GW INSTEK

POWER SUPPLIES CATALOG



www.gwinstek.com

World-Class Quality and Performance Affordable Price A Wide Range of Selections

Originally known and founded in 1975 as Good Will Instrument, GW Instek is the first professional manufacturer in Taiwan specializing in electrical test and measurement instruments. GW Instek began as a manufacturer of power supplies and quickly expanded into developing high precision electronic test and measurement instruments. After 48 years in the test and measurement industry, GW Instek has grown to become one of the most recognized manufacturers of instruments in the world. Today, GW Instek has more than 300 items ranging from oscilloscopes, spectrum analyzers, signal sources, DC power supplies, AC power sources, digital meters, LCR meters, other specific application meters to video surveillance systems.

Think of the word "innovation" and it's easy to think of R&D, new inventions, faster processing and groundbreaking technologies. At GW Instek, we focus on another type of innovation that is based on flexibility, manageability and efficient performance in real-world test applications. We call this "customer-focused" innovation and we strongly believe in it. By listening to our customers around the world, we are able to anticipate their needs and respond quickly to emerging trends. So when one of our customers introduces an exciting new technology, GW Instek is ready to test it.

Whether our customers are designing products with the ability to change people's lives, educating and training the engineers of tomorrow, or discovering new technologies that solve complex problems, GW Instek can be trusted to perform reliably and accurately in even the most demanding test environments. How can we be sure? We have the numbers to back it up. Actually, we have just one: 40. That's the number of in-house quality and performance verification tests each GW Instek product must pass before it leaves our facilities. This thorough process starts with environmental, safety and durability testing in the product design phase, through to burn-in and shipping tests ahead of final inspection and packing. Furthermore, our two manufacturing facilities in Taiwan and China all adhere to ISO quality and environmental management standards, as well as European CE safety regulations. That's why GW Instek products can be trusted to test.

At GW Instek, quality is reflected not in higher cost, but in greater value. We pride ourselves on the quality, reliability and affordability of our test and measurement instruments. With each of our products often in use for decades, it's not hard to understand the importance of measuring a product's value not by price, but by lifetime cost. This importance is deep-rooted to us; we have consistently produced products with some of the industry's lowest total cost per ownership. Reducing the total cost per ownership of our products allows us to provide exceptional value, reliability and performance with leading service and support over the lifetime of a product. That's why year after year, GW Instek can be trusted to perform reliably.

The industries we serve are as diverse as they are specialized. Our experience and expertise allow us to deliver high-performance test solutions that address the unique requirements of each client. GW Instek provides customized solutions that are backed by reliable products, comprehensive after-sales support, warranty, calibration services, and one of the industry's lowest Total Cost per Ownership.



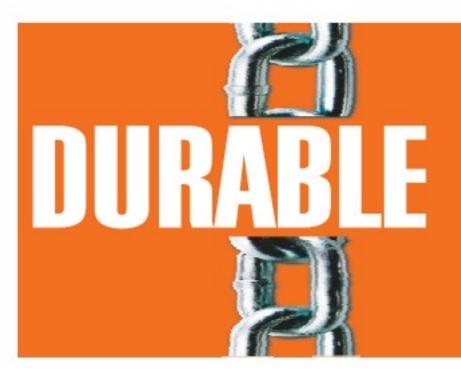
Simply Reliable



48 Years of Reputation & Trust

We take prides in creating more than 48 years of satisfied customer experiences throughout the world. Today, GW Instek is considered the most Reliable Brand for professional measurement instruments with supreme quality and the lowest TCO - Total Cost per Ownership.

We invite you to be part of GW Instek success story and help perpetuate this value.



Uncompromised Durability

With an overriding commitment to provide highly durable products, GW Instek is your most **Reliable choice** when it comes to selecting the best measurement instruments with the **lowest TCO - Total Cost per Ownership.** Highly durable products mean long product lifetime capable of reducing operation & maintenance costs. This is definitely what you need to consider before investing.



Your Most Trustworthy Partner

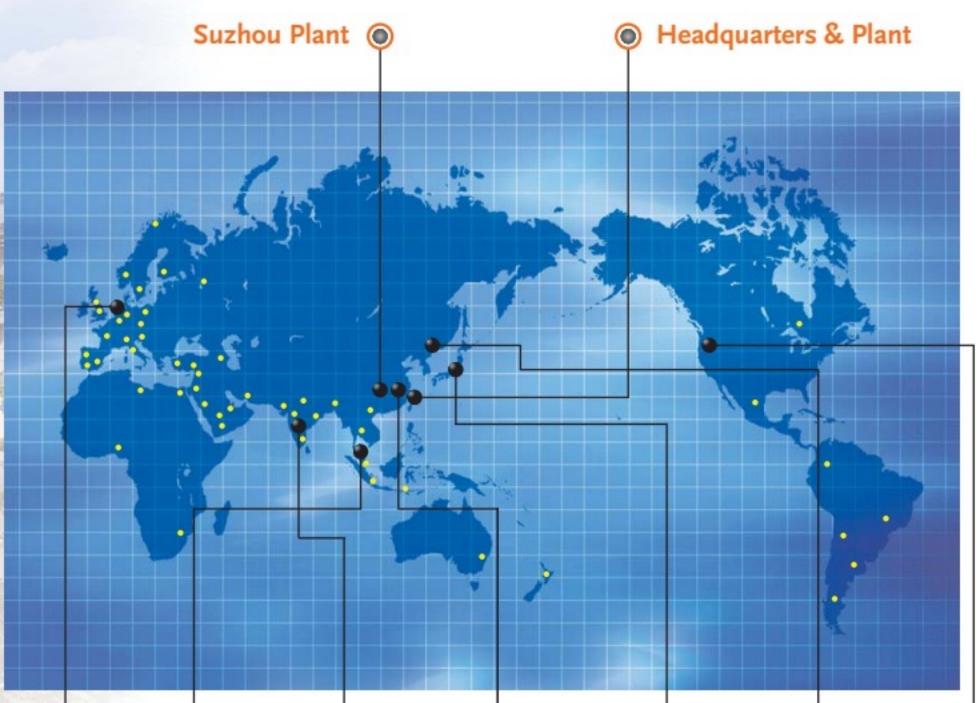
Being your most trustworthy and Reliable Partner, GW Instek promises to proactively provide insightful business solutions and products with the lowest TCO – Total Cost per Ownership, assisting your business to thrive in the highly competitive world. From feasibility evaluation, product selection, solution adaptation to timely after-sales service, we are dedicated to serving each individual customer and making your professional life easier than ever.

1975	Good Will Instrument Co., Ltd was established as a Power Supply manufacturer.		
1983	The Kaohsiung branch was established.		
1985	The Taichung branch was established.		
1989	Good Will Southeast Asia (Malaysia) was established.		
1991	Instek America Corp. was established.		
1993	Taiwan headquarters was ISO-9002 certified. Granted the National Small and Medium Enterprise Award. Granted the Industrial Technology Advancement Award of Distinction.		
996	Good Will Southeast Asia (Malaysia) was ISO-9002 certified.		
998	Taiwan headquarters was ISO-9001 certified.		
1999	Taiwan headquarters was ISO-14001 Environmental Management certified. Good Will Instrument Co., Ltd. delivered Initial Public Offer on Taiwan's Over-The-Counter	r Security Exchange (OTC).	
2000	The CNLA Electricity Calibration Laboratory certification was granted. Good Will Instrument was went public on the Taiwan Stock Exchange.		
2001	Good Will Instrument Suzhou was established.		1
2002	Taiwan headquarters was ISO-9001 : 2000 certified.		1
2003	Suzhou subsidiary was ISO-9001 : 2000 certified.		1
2004	Instek Electronics Shanghai was established.		,
2005	Global operational headquarters was established in Taiwan. The brand new CIS (Corporate Identity System) was introduced.		
2006	Instek Japan Corporation was established.	THE RESIDENCE	
007	Good Will Instrument Korea was established.		ii
009	The Group Quality Award of Business Excellence Performance Model from the Chinese So	ciety for Quality was granted.	7
2010	Marketing office was set up in India.		800
2011	GW Instek won Taiwan Excellence Award for GDS-1000-U Series, AFG-3000 Series, PEL-20	000 Series and GDM-8261.	gen Jane
2012	GW Instek won Technology Innovation Award for GDS-3000 Series and GSP-930. Acquired Japan TEXIO technology corporation.	T THE REAL PROPERTY.	THE REAL PROPERTY.
2013	Instek Digital was merged to become a member of GW Instek business group. GW Instek cooperated with Hitachi and EMIC to establish GW Alliance in Suzhou, China. GW Instek won Technology Innovation Award for PPH-1503 and AFG-2225.		
2014	GW Instek won Technology Innovation Award (Gold) for GDS-300 full touch screen oscillo European subsidiary was established in the Netherlands.	scope.	
2015	GW Instek won Taiwan Excellence Award for GDS-300/200 Series and PEL-3000 Series.		開発する
016	GW Instek won Taiwan Excellence Award for GDS-2000E Series and GSP-9330.	411/2	科技
017	GW Instek won Taiwan Excellence Award for C-1100 and GPM-8213.		大樓
018	GW Instek won Taiwan Excellence Award for C-1200 and GDM-906X Series.		
2019	GW Instek INDIA LLP was established.		
	GW Instek won Taiwan Excellence Award for GPT-12000 Series and SKTS-5000.		
2020	GW Instek won Taiwan Excellence Award for C-3200 and GPM-8310.		









Europe Subsidiary

Malaysia Subsidiary

India Subsidiary

China Subsidiary

Japan Subsidiary

Korea Subsidiary

diary U.S.A. Subsidiary















Power Supplies Application Guide

Comprehensive Electronic Measurement Solutions

Becoming the highest customer value TMI products and services provider in the global market is the vision of GW Instek and this vision, in the meantime, has always been the managerial objective ever since the establishment of the company. Over the span of 44 years' continuous refinement and progression, GW Instek began as a manufacturer of the earliest models of analog power supplies and has rapidly expanded to provide users of nowadays with more than 300 products consisting of 500 MHz Digital Oscilloscope, High-Power D.C. Power Supplies, High-Power D.C. Electronic Loads, 3 GHz Spectrum Analyzer, 80 MHz /25 MHz Arbitrary Waveform Generator, Programmable D.C. Power Supplies, A.C.(D.C.) Power Source, 6 1/2 Digit Dual Measurement Multi-Meter, 10 MHz High Frequency LCR Meter, and All-in-one electronic Safety Testers, etc. so as to not only fully satisfy users' demands in the process of product development, verification, production, test and quality assurance, but also meet comprehensive and complete equipment requirements for a wide extent of tests, including military industry and scientific research.

Manufacturers of various industrial electronic and consumer electronic products are seeking ways to reduce production costs down in order to keep up with the market competitiveness while facing the dramatic changes of the global electronic industry. The design of the new generation programmable switching power supply satisfies the recharging test applications for high power batteries. The built-in Sink Current Circuit not only effectively expedites the voltage fall time during output off mode, but also prevents reverse voltage from happening so as to effectively protect the power supply. Reverse voltage occurs when external voltage is higher than the internal voltage of the power supply once the external unit is fully charged. The new generation Programmable Switching D.C. Power Supply adopts Interleaved PFC (Power Factor Correction Circuit) and DC/DC module circuit to effectively reduce high frequency ripples during output on and to meet the requirements of low ripple applications.

In recent years, we have successfully constructed power measurement functions on Digital Storage Oscilloscopes. Via the combination of Power Management App and internal measurement hardware module, we have simplified the required power measurement equipment. With respect to AC/DC Power Source products, we have met the international regulation (Energy Star) for low standby mode power consumption measurement requirements. To meet the requirements of all-in-one equipment, we have combined A.C. power source with power meter measurement functions. All-in-one equipment provides convenience for measurement and system integration, and most importantly, it strengthens the market competitiveness and dramatically enhances functionality. In the future, we will devote our efforts to strengthening single instrument's performance, including A. user interface; B. measurement items; C. measurement accuracy; and D. measurement speed to meet the recent industrial requirements from power supply manufacturing, automotive electronics, and green energy industry.

More than a simple instrument provider, GW Intek, with scores of practically appplied experiences in instruments, is now offering this specific catalog for power supplies to betterly provide users with a conceptaully systematic combination, further assisting our customers acheiving the purposes of both products applications and measurements.

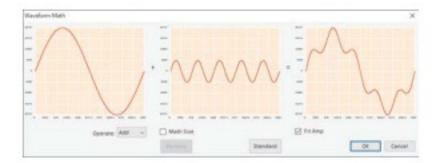
Uncompromised Durability
with Highest Quality Standard

Editing and Synthesis of Power Supply Output Waveform

In the development and verification process of electronic products, signal generators are often utilized to generate test signals or simulate signals for testing and specification/ function verification of the designed electronic circuit. Common test signals include Sine, Square, Triangle, Ramp, Pulse, Noise, Burst waveform and communications modulation waveform etc. Signal generators provide a variety of test waveforms that can meet a variety of applications, however, signal generators generally only provide 10Vp-p signal output, which cannot meet the requirement of the test signals for high-voltage outputs. Using a signal generator with a GW Instek ASR series power source can provide high-voltage output test signals.

Select AC power output mode (AC-INT Mode) or AC/DC power output mode (AC+DC-INT Mode) of ASR-Series to set AC power output or AC&DC power output; select External AC signal source mode (AC-EXT Mode) or External AC/DC signal source mode (AC+DC-EXT Mode) to use the ASR series as an amplifier, which can directly amplify and output external input signals by the ASR series; select External AC signal superimposition mode (AC-ADD Mode) or External AC/DC signal superimposition mode (AC+DC-ADD Mode) to superimpose and output the external input signals and the voltage signals set by the ASR series. Signal generator+ASR-3000 provides a maximum signal output of 400Vrms/±570Vdc/999.9Hz, and signal generator+ASR-2000 provides a maximum signal output of 350Vrms/±500Vdc/999.9Hz.

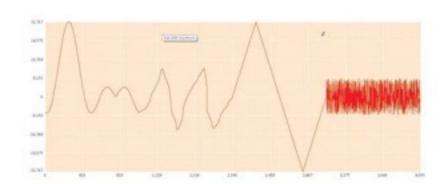
In addition, the editing and synthesis of power waveforms can also be realized via the PC Software provided by the ASR series. PC Software's built-in Arbitrary Waveform Function (ARB) editing function can directly save the edited test waveforms to a USB flash drive and upload it to the ASR series or directly transmit them to the ASR series through a communications interface (USB, LAN, RS-232 or GPIB) for the output to the DUT. The ARB editing screen has a canvas with a horizontal axis of 4096 points (0~4095) and a vertical axis of 16bits resolution (-32767 ~ +32767) for users to edit user-defined arbitrary waveforms. Editing methods include 1) Draw hand-drawn pen mode; 2) Line straight line mode; 3) Insert function mode Sine, Square, Triangle, Exponential Rise, Exponential Fall, Noise, DC and Harmonic Synthesizer; 4) Oscilloscope directly imports waveforms (GDS-3000 only); 5) Mathematical synthesis waveform modes: Add, Subtract, Multiply. The examples in the figures below are i). Sine waveform mathematically synthesized 1/4 amplitude & 5 times frequency Sine waveform; ii) Sinc waveform starting from 90 degrees and lasting 1024 points to connect with two cycles of hand-drawn waveforms; connect the Triangle waveform starting from 0 degree and last for 1024 points; and finally connect the Noise waveform.



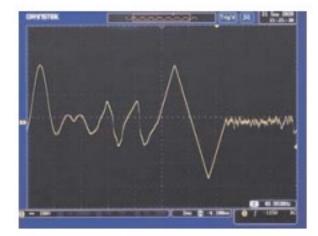
Sine+(1/4 Amplitude& 5 Times feq.) Sine Waveform



Shown on Oscilloscope



Sinc+Draw+Triangle+Noise Waveform



Shown on Oscilloscope

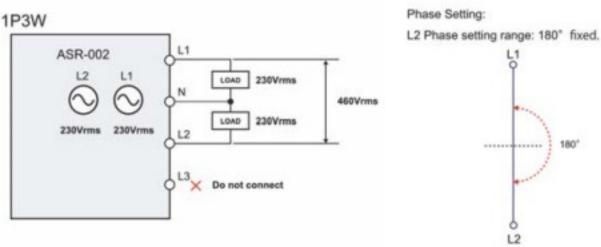
Single-phase AC Power Source and Applications of Three-phase System

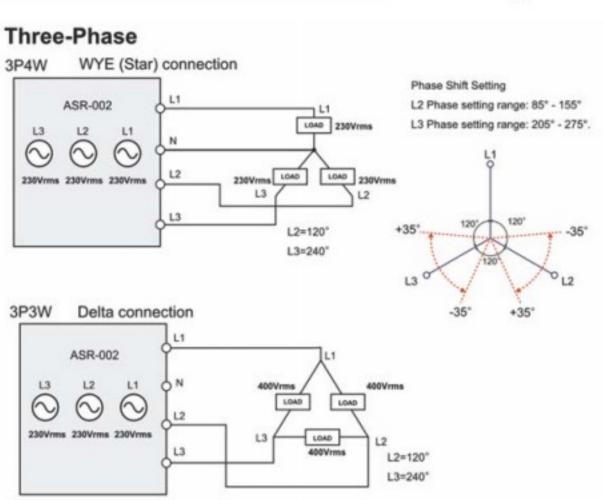
AC power is a power supply whose voltage amplitude and current direction change periodically. AC power is often used as a source of household power and industrial power. AC power is mainly divided into single-phase and three-phase power supplies. Single-phase power includes a live wire and a neutral wire. In most cases, household power and general commercial power are provided by single-phase power, since single-phase power has the advantages of simple wiring and low design cost. Three-phase power includes three live wires and a neutral wire. The three live wires have same frequency, same voltage amplitude and the phase difference of 120 degrees. The advantages of the three-phase power are small power loss, better power output efficiency, stable current, and operating under a larger power load, therefore, three-phase power is often utilized in industries, power grids, and places with large power load requirements.

GW Instek ASR-2000/3000 Series are a single-phase AC+DC Power Source. ASR-3000 Series provides a maximum power output of 4kVA/400Vrms/±570Vdc, which not only outputs AC sine wave, square wave, triangle wave, but also allows users to edit 16 sets of arbitrary waveforms. Furthermore, the powerful ASR-2000/3000 Series AC power source can measure Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, Voltage Harmonic and Current Harmonic, and set the start /stop phase of the output waveform to generate sequential AC and DC power output.

ASR-2000/3000 Series have an option of ASR-002 three-phase power controller to achieve voltage multiplication and meet the output requirements of 1P3W, 3P3W, and 3P4W power output. Users use a computer to communicate with ASR-002 and ASR-002 synchronously controls signals so as to control the output amplitude, frequency and phase angle of three ASR-2000/3000 Series to provide a three-phase power output. ASR-2000/3000+ASR-002 is a practical single-phase three-phase AC output solution.

*Functions of ASR-Series are limited when ASR-Series applied to ASR-002. Please refer to ASR-2000/3000 for detailed information.

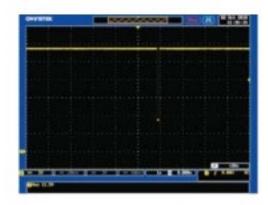




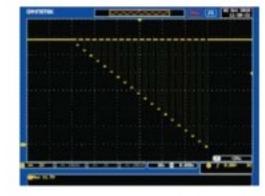
ISO-16750-2 Pretest with ASR-2000 Series

The applications of electronic technology products are growing at a fast pace in our daily lives. Other than mobile phones, tablet computers or general consumer electronics, electronic technology products are also utilized in the automotive industry, including LED headlights / taillights, HUD (Head Up Display), adaptive front lighting, tire pressure monitoring system, ABS system, GPS, windshield wiper, AV system, etc. In order to ensure the safety of drivers and passengers as well as driving, vehicle manufacturers are required to have a higher product stability and stricter quality control standards for electronic devices installed in the automobile.

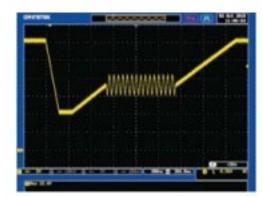
Vehicle driving process is an extremely harsh challenge for electronics manufacturers manufacturing automotive electronics. Rough-road driving, vibration from a piston-engine, electrical systems exposed to low or high temperatures, temporary exposure to unknown chemical mixtures, alternator overvoltage, and momentary drop in supply voltage all may cause the product to malfunction. Therefore, the environmental reliability requirements of automotive electronic products will be more rigorously regulated. At present, the ISO-16750 has been widely adopted and referenced by relevant automotive electronics manufacturers. ISO-16750 contains 5 parts. In addition to ISO-16750-1 General, the rest are ISO-16750-2 Electrical loads, ISO-16750-4 Climate loads, and ISO-16750-5 Chemical loads. The sequence mode of ASR-2000 can arbitrarily edit the voltage test waveform, which is very suitable for generating the verification waveform of ISO-16750-2 Electrical loads.



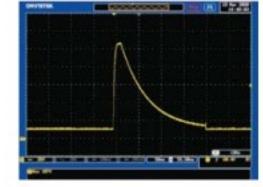
Momentary drop in supply voltage by ASR-2000 Series



Reset behavior at voltage drop by ASR-2000 Series



Starting profile by ASR-2000 Series



Load dump by ASR-2000 Series

ASR-2000 for the Applications of ISO-16750-2 Verification Items are as Follows:

Direct Current Supply Voltage

ASR-2000 Series provides the maximum / minimum supply voltage to verify the DUT of a full range of 12V power supply system and the 24V power supply system.

Overvoltage

ASR-2000 Series simulates the occurrence of overvoltage when the generator regulator fails.

Superimposed Alternating Voltage

The internal resistance parameter requirements of the power supply is not considered. ASR-2000 Series collocating with a signal generator can simulate power output to have the frequency change from 1 to 999.9Hz.

Slow Decrease And Increase of Supply Voltage

ASR-2000 Series sequence mode can simulate the battery being gradually charged and discharged.

Momentary Drop in Supply Voltage

Setting ASR-2000 Series power supply voltage to be interrupted instantaneously can simulate the effect caused by the melting of the conventional fuse component in another circuit. ASR-2000 Series can provide a minimum power interruption output of 100us.

Reset Behaviour at Voltage Drop

ASR-2000 Series can flexibly set different voltage drop times to test the reset behaviour of the DUT.

Starting Profile

The starting profile generated by ASR-2000 Series can verify the characteristics of the DUT during and after the car ignition.

Load Dump

Load dump is generated when the battery powering the generator or inductive component is instantaneously disconnected. If the parameter requirements of the input impedance of the power supply are not considered, editing the ASR-2000's Series sequence mode can obtain the waveforms of ISO-16750 test A and test B.

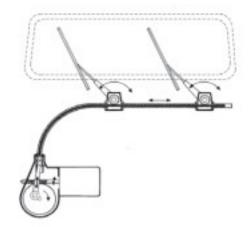
Reversed Voltage

ASR-2000 Series reversed output can meet the verification requirements of various automotive electronic products.

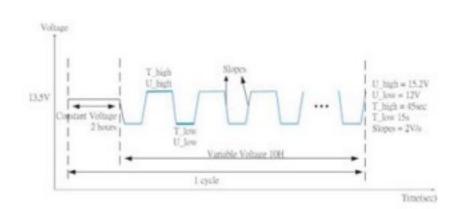
Vehicle Power Supply Simulation and Windshield Wiper Motor Application

With the popularity of technology and the evolution of electronic products, the electronic components used in today's cars are also becoming more diverse. Power windows, power mirrors, parking sensors, windshield wiper motors, etc., use batteries as a source of power. However, during the running of the vehicle, the supplied power supply is not constant. In order to ensure that the electronic components of the vehicle can still work normally under the condition of power supply fluctuation, the power supply can be used to simulate the abnormal output that may be generated by the battery to perform functional tests on the vehicle electronic products that is conducive to screen out defective components and products during the product testing phase.

Take the windshield wiper motor as an example. The processes of the windshield wiper motor operation generally include: 1 The rotation of the motor drives the back and forth of the windshield wiper. 2 Each time the windshield wiper is stationary, the windshield wiper must stay at the edge of the viewing angle without obstructing the driver's line of sight. 3 When the two windshield wipers are brushed at the same time, there should be no collision. The motor operating voltage range is DC: 10V ~ 15V, and its maximum operating current will be different at low speed or high speed. In order to verify that the varying power supply voltage does not affect the operation of the windshield wiper motor, the DC power supply can be used directly to generate a series of varying power outputs to the windshield wiper motor. The following figure shows the variable power supply for testing the windshield wiper motor. As follows, after a stable DC power supply, an unstable power supply output is provided to the windshield wiper motor and its operation is evaluated.



Schematic Windshield Wiper Motor



PSW-Series Test Scripts Function

The PSW Test Script function can be used to plan a continuous set of voltage changes. Users can edit the output voltage, current and execution time separately. For individual steps, OVP, OCP, voltage rise/fall slope or current rise/fall slope, and constant voltage or constant current priority mode can be set.

By editing the required power change output (eg. 200 cycles) on the Excel table, then loading the Excel table into the PSW stand-alone unit to perform the stand-alone automated execution, users can perform the above power output to verify the operation of the windshield wiper motor by a stand-alone unit.

Step	Point	Output	Time(sec)	Voltage (V	Cament (/	OVP(V)	OCP(A)	Bleeder	IV Mode	Vsr up(V)	/s Vsz down	(Isr up(A/s)	Isr down(AIR(ohm)	Beeper	Sense Ave Jump to	Jump Cnt
	1 start	On	7200	13.5		MAX	MIN	ON	CVHS	MAX	MAX	MAX	MAX			
	2	On	1.5	12		MAX	MIN	ON	CVHS	MAX	- 2	MAX	MAX			
	3	On	15	12	- 4	MAX	MIN	ON.	CVHS	MAX	MAX	MAX	MAX			
	4	On	1.6	15.2	- 6	MAX	MIN	ON	CVHS		2 MAX	MAX	MAX			
	5	On	45	15.2	- 6	MAX	MIN	ON	CVHS	MAX	MAX	MAX	MAX			
	6	On	1.6	12		MAX	MIN	ON	CVHS	MAX		MAX	MAX		1	569
	7 end	On	1	13.5		MAX	MIN	ON	CVHS	MAX	MAX	MAX	MAX			1 19
	В															
1	9															
1	0															
1	1															
1	2															

With the Test Script function provided by GW Instek, it is very easy to perform the complex power output control under Excel editing. For users, there is no need to install an additional software, and there is no cumbersome step. Hence, using the PSW to perform complex sequential power outputs is a simple task.



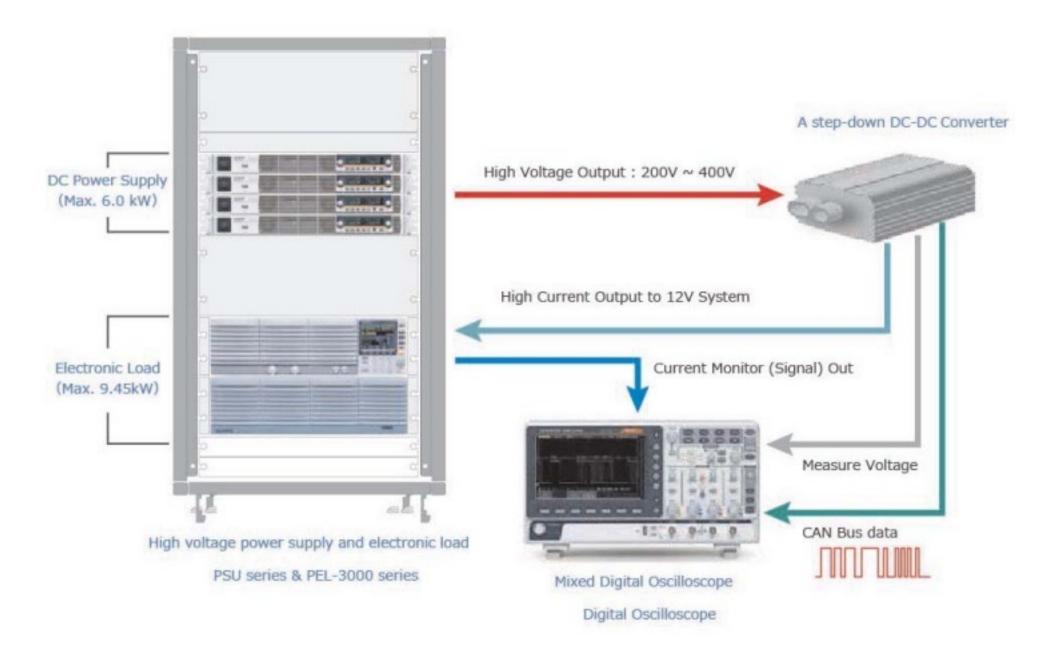
PSW Built-in Resistance Variable Function Simulating Battery Output Resistance and Wire Harness

In addition, for the simulation of the real power supply situation at the factory, PSW can simulate the battery to supply power to the windshield wiper motor and activate PSW's built-in resistance variable function to set the built-in resistance value to simulate the battery output resistance and Wire Harness's resistance. By so doing, PSW can verify the output characteristics of the windshield wiper motor before it is installed in the car.

Car DC-DC Converter Effectiveness Evaluation

The output voltage of common electric vehicle batteries is high voltage ranging from 200V to 400V. In order to drive conventional 12V vehicle electronic devices, e.g. instrument panel display, lighting, electronic control unit (ECU), etc., the high-voltage output battery often transforms the high voltage of the battery into a 12V output through the step-down DC-DC converter. The step-down DC-DC converter is generally required to provide a stable voltage output, even if its input source cannot be maintained at a stable output. Therefore, the output characteristic test of the step-down DC-DC converter is very important. Generally, a high-voltage power supply can be used to simulate the input of the step-down DC-DC converter, and a large-capacity electronic load can be used to simulate vehicle electronic devices to test the output capability of the step-down DC-DC converter.

The PSU high-voltage model includes a voltage output range from 200V to 400V, and it can achieve a power output of 6KW through parallel connection, which can be used to simulate the battery output of the electric vehicle. The PEL-3955 can simulate the power consumption of a 12V automotive electronic device and output the monitored current to the oscilloscope for observation.

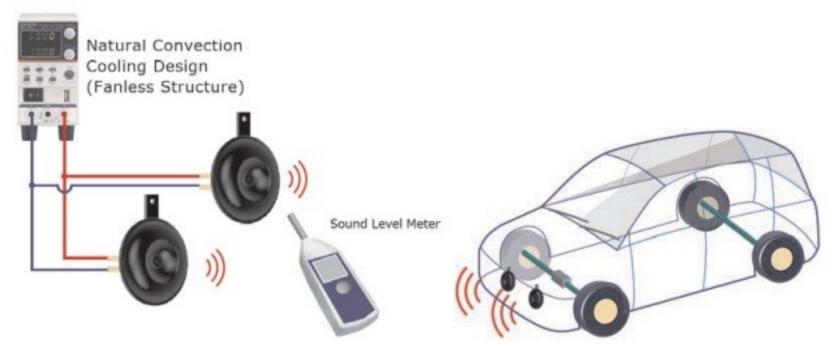


PSU can set the sequential power output to generate a set of varying power outputs to the step-down DC-DC converter to evaluate the Line Regulation characteristics of the step-down DC-DC converter. In addition, setting the PEL-3955 to operate under the Dynamic mode, users can evaluate the transient recovery time and load regulation of the step-down DC-DC converter. According to the load waveform of the vehicle device, users can edit the PEL-3955's sequence function to generate the load waveform so as to verify the output capability of the step-down DC-DC converter.

The Reliability Test of Vehicle Horn

Vehicle Horn is often used in transportation such as cars, motorcycles, trucks, buses, trains, etc. During the travel of the vehicle, the Vehicle Horn can sound to warn other vehicles or draw attention to avoid danger. If the sound intensity of the Vehicle Horn is to be measured during the burn-in test, the fanless PFR series power supply best meets such test requirements. The PFR series fanless design structure can quietly output power to the Vehicle Horn and the sequential output power function Test Script allows users to edit the burn-in test process.

PFR-Series



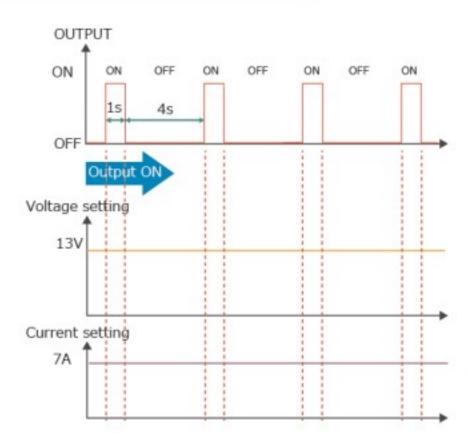
A Sound Measurement of the Vehicle Horn

A Car Equipped Vehicle Horn

Edited Test Script to PFR for Burn-in Test:

	A	В	С	D	E	F		Voltage: 13.0V	Voltage: 13.0V
1	memo	Hone test					_	Current: 7.0A	
2	DisplayItem	VI					_		
3	CycleItems	Number	Start Step	End step				Cycle : 50,000	Cycle : 30,000
4	Cycle	50000	2	3					
5	Step	Point	Output	Time(sec)	Voltage(V)	CurrentA)		•	
6	1	Start	Off	0.5	0		7	_	
7	2		On	1	13		7		,
8	3		Off	4	13		7		
9	4	End	Off	0.5	0		7		
10									

PFR Output Waveform for Burn-in Test:



LED Test Application

The light-emitting diode is a special diode. Its main structure is the same as that of a common diode. It is composed of a P-type and N-type semiconductor. It uses the different characteristics of the forward bias and reverse bias of the P-N junction to turn on or off. The voltage-current output relationship when applying a forward bias to a light-emitting diode (see Fig. 1.). When the applied forward bias is greater than the Vf value, the diode begins to emit light, and the luminosity of the LED is directly related to the magnitude of the driving current. The larger the current value, the stronger the illuminance. If the current value is too large and exceeds the rated current value, the LED will have permanent damage.

In the actual test process of the LED, the conventional power supply output is usually under the CV mode. When the forward bias voltage is greater than the Vf value of the LED, the LED may be given a surge current due to the instantaneous conduction. If this surge current exceeds the rated maximum current value, it may cause permanent damage to the LED.

The CC priority mode function designed by GW Instek on the power supplies allows the output of the power supply to run under the CC mode preferentially to avoid the surge current and prevent the LED from being damaged by the surge current during the LED test.

Note: PFR series, PLR series, PSW series, PSU series, PSB-1000 series support the CC priority mode function.

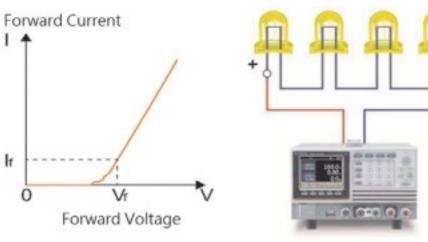
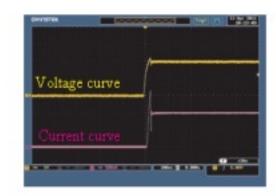


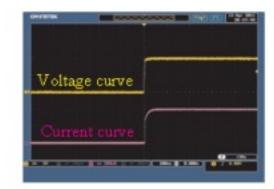
Fig. 1.: V-I Characteristic

Chart

Illustrations of PSB-1000 Connecting to LEDs



Under the Conventional C.V Mode, Inrush Current and Surge Voltage Appeared at Forward Voltage (Vf) of LED



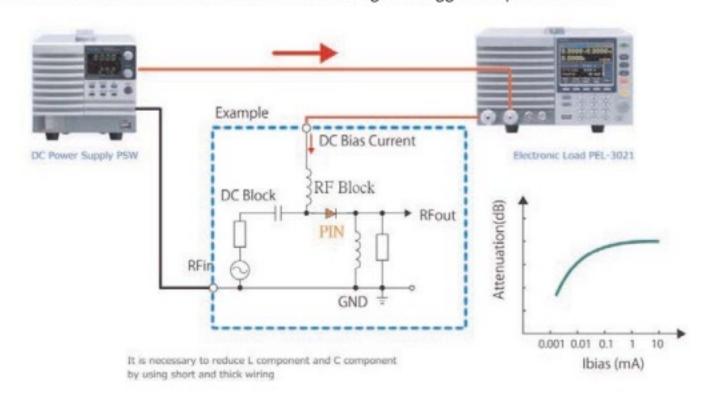
Under C.C Priority Mode, Inrush and Surge Voltage are Effectively Restrained

Precise Control RF Attenuator with PEL-3021

PSW+PEL-3000 can form a low-cost, high-accuracy, high-resolution current output controller. Typical RF Attenuators often use PIN diodes as microwave switches and microwave attenuators. In high frequency applications, providing a PIN diode forward bias or reverse bias can control whether the high frequency signal RFin can be output to RFout.

As shown in the figure below, the DC Block component is nearly short-circuited for the high-frequency RFin signal, so the RFin signal can pass directly. The RF Block is nearly open-circuited for the high-frequency RFin signal, so that the RFin signal is output to the RFout via the DC Block and the PIN diode. Precise control of the DC current flowing through the PIN diode allows precise determination of how much RFin signal is attenuated and then be output to RFout.

The PEL-3021 has a high resolution setting of 0.01mA. It can increase the DC control current by the increment of 10uA to observe the relationship between the measurement signal RFin and RFout, and further draw the attenuation curve of the RF Attenuator. The RF Attenuator's automated measurement can automatically increase the load current value using the PEL-3021's Sequence Function and simultaneously trigger the external device to conduct measurement using the Trigger Output function.

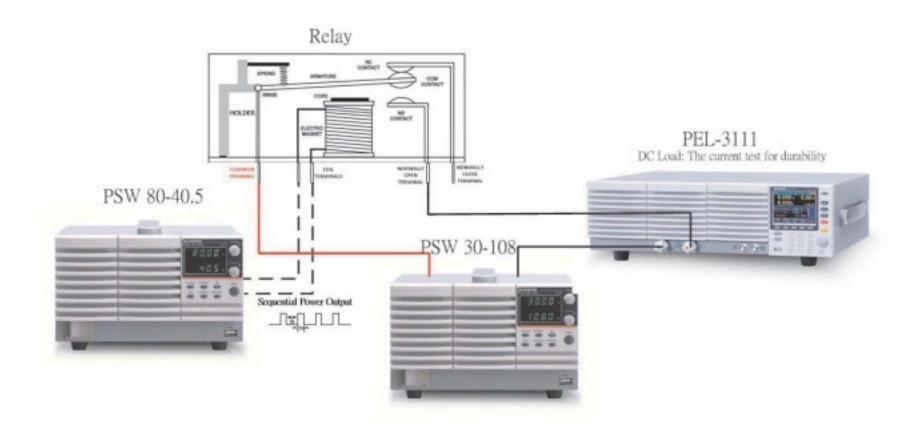


Bias Current vs. Attenuations

Reliability Test for Relay Using GW PSW Power Supply and PEL-3111 E. Load

How do you conduct relay connection point (N.O. / N.C.) tests? How do you test the life cycle of relay's connection point (N.O. / N.C.)? How do you evaluate the connection resistance of connection point (N.O. / N.C.) after multiple tests? How do you evaluate the speed for operating connection point (N.O. / N.C.)?

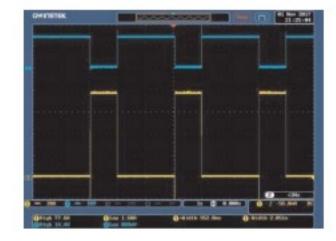
Relay, functioning to produce mechanical on-off movement by receiving electric signal to change electro magnet, is often applied to control other electronic device via receiving electronic signal. Voltage exerted on relay's coil allows current to pass through coil and magnetizes core. Armature is then be pulled by core due to electromagnetic force. Hence, a mechanical on-off movement is produced.



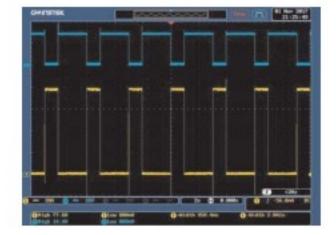
As shown on the top diagram, PSW 30-108, Relay and PEL-3111 are connected by series. PEL-3111 is set to 80A current sink. Each time, Relay's NO-COM is closed, NO-COM is tested for its current reliability. In the meantime, PSW 80-40.5 is utilized to output sequential power supply to produce control signal to control Relay's NO-COM.

One GW Instek PSW 80-40.5 can meet the actual measurement requirements via planning Relay's control signal. It not only controls signal's voltage, current, time and period, but also determines the number of operating cycle. There are totally 20,000 steps and each step can be set from 50ms to 20 days. The number of cycle can reach 1 billion or infinite by different specifications. Relay's control signal can only verify the mechanical characteristics of NO-COM and NC-COM. For further electric characteristic verification of NO-COM and NC-COM, PSW 30-108 and PEL-3111 must be concurrently utilized to produce C.C. output. Based upon Relay's specifications, the combined application of two instruments can conduct fast current switching test and provide large current verification, including current withstanding value and current withstanding time so as to ensure Relay's quality.

Waveforms Measured



Ch1: Current Waveform



Ch2: Voltage Waveform for Relay 80A for 1s and 0A for 2s

Note:

NO: The NO pin is open to com pin in general unless the power provides to the coil. So it calls Normally Open Terminal of Relay.

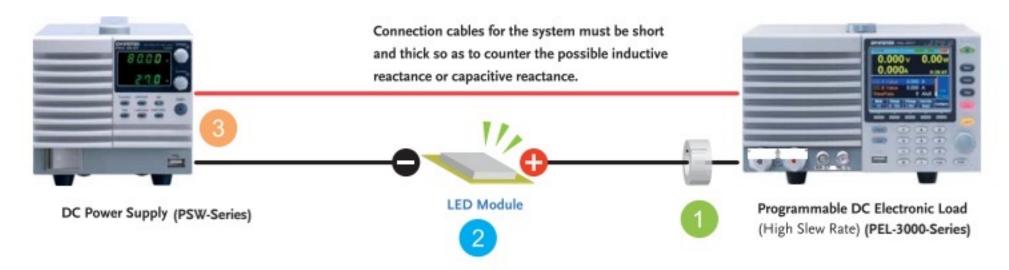
NC: The NC pin is short to com pin in general unless the power provides to the coil. So it calls Normally Closed Terminal of Relay.

NO-COM: Its a connection status between NO pin and COM pin. It is short when power provides the coil; otherwise, it keeps open.

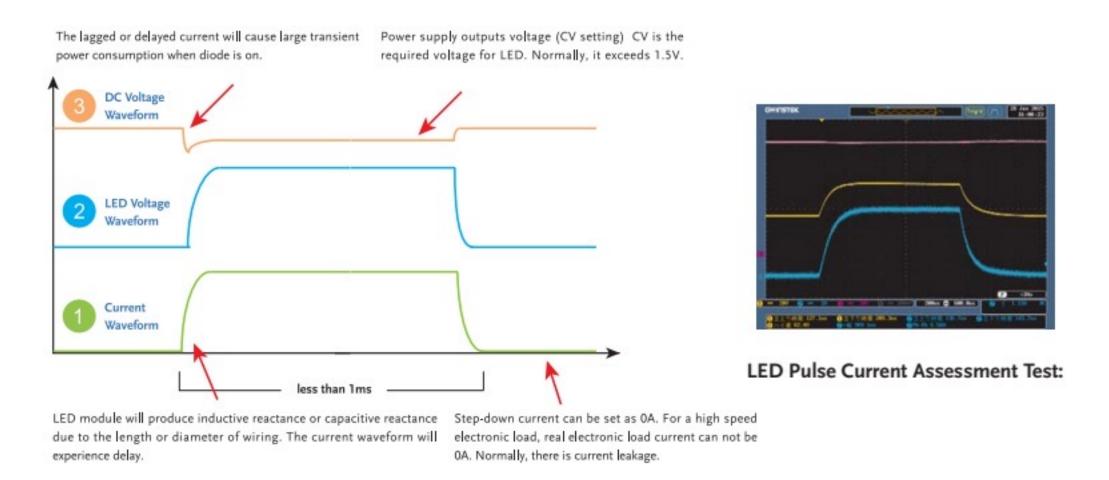
LED Pulse Current Assessment Test

Electronic load simulates actual loads by drawing current. The drawn current is called load current for power supply that can be used to test the characteristics of power supply or battery. By placing an electronic load in series with a power supply and a load (such as LED Module) and by setting different constant current conditions on the electronic load, the electronic load can draw different current targets from the system loop. The PEL-3000 series features the fast slew rate and the sequence function to simulate real and fast load changes.

The following diagram illustrates a pulse current test system composed of a programmable DC electronic load and a DC power supply to conduct tests on LED illumination characteristics.



Programmable DC electronic loads, after settings, simulate DUT's pulse current (fast load changes) capability by drawing large and small current. Electronic loads produce pulse current and collocate with the sequence function to execute tests on fast or arbitrary waveform current. Oscilloscope monitors voltage waveform changes for LED and current source. Oscilloscope with a current probe can monitor current waveform in real time.



Benefits of PEL-3000 Series Applications

Construct A Large Pulse Current Source with Lower Costs

Normally, bipolar power is fast in response but it is also very expensive. Therefore, equipment for large pulse current is expensive. The feature of fast switching of electronic load can be used to construct pulse current source with lower costs.

Rating Current Requires Only 1.5V Input Voltage

Power supply outputs voltage - the required voltage of LED is approximately 1.5V, which requires only 1.5V peak value. PEL-3021(175W) can satisfy 35A pulse current requirement with 1.5V voltage input.

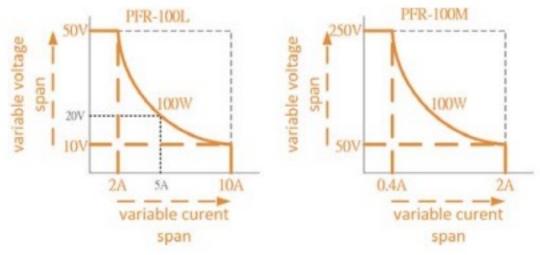
For Constant Current Usages and Multiple DUT Applications

Constant current source can be used on changing characteristics for diode device of LED, surface processing (electroplating), pulse charging of rechargeable battery, burn-out of various fuses, and current sensor applications.

The Benefits That PFR-100 Power Supply Can Provide in Burn-in Test

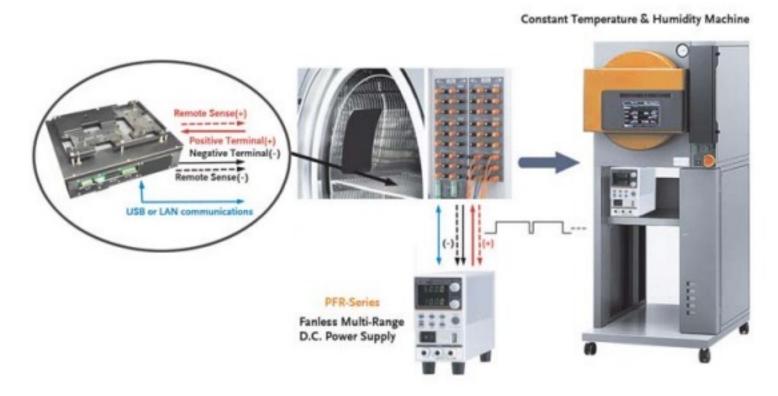
Burin-in is one of many common methods manufacturers utilize to sort out defective components and products during the testing process of the electronic products. Burn-in test is normally conducted in the factory before shipment and after products are completely assembled. Burn-in process helps manufacturers sieve out defective components so as to prevent defective products from being sold to customers. Burn-in test requires additional space for power supplies and its power consumption for a long period of time will increase energy demand and electric bill. Burn-in test is a tremendous cost challenge to all manufacturers in terms of space, electric power and man power. To tackle this cost challenge, GW Instek PFR series can easily assist manufacturers in solving all difficult problems.

- * With respect to space, the PFR series provides better space flexibility in the limited test area by its 3U height (H:124/W:70/D:300 mm) and as light as a total weight of 2.5kg.
- * Pertaining to power saving, the PFR series, a high-efficiency power conversion power supply, adopts high-efficiency PWM design comparing with low-efficiency linear power supplies. Hence, the PFR series is capable of saving electricity during long-time burn-in test. Compared the same 100W output power supplies, the PFR series requires 143W of input power, while the linear power supplies with 0.5 efficiency require 200W of input power. After a full year of burn-in test, the PFR series will consume 1235 kWh and the linear power supplies will consume 1728kWh. For three years of burn-in test, the PFR series only consumes 3703kWh and linear power supplies consume 5184kWh.
- * The PFR series is a five-fold multi-range power supply, which allows users to arbitrarily adjust voltage and current within the rated power. This function allows users to adjust the voltage and current settings according to the maximum output power. Compared with the conventional 100W power supplies with maximum output 20V/5A, the 100W PFR-100L provides a maximum output of 50V@2A or 10V@10A, and the PFR-100M provides an output of up to 250V@0.4A or 50V@2A.



Voltage/Current Operating Area

- * In terms of personnel operation, the Test Script function of PFR series edits sequential power outputs based upon customer's burn-in test process and executes automatically during the burn-in procedures. Additionally, the built-in USB, RS- 232/485 communications of the PFR series allow testing personnel to remotely control or execute self-defined programs to realize automated tests and reduce manpower investment during burn-in process.
- * For power supplies connected to the inside of the Chamber, the phenomenon of voltage drop is often happened due to the long wiring. The PFR series provides the Remote Sense function to compensate the voltage drop so as to ensure an accurate voltage output to the DUT. The operator does not need to adjust voltage for voltage drop.
- * Conventional power supplies produce fan noise while in operation. Power supplies with fan design will absorb dust in the fan filter during long-term operation. The accumulated dust may affect the air circulation inside the power supply. Poor air circulation inside the power supply will cause the internal components of the power supply to function under a high-temperature environment. The components that work in the high-temperature environment for a long time will shorten the life cycle of the power supply. The fanless PFR series without fan noise is suitable for a quiet working environment, furthermore, fanless design is ideal for clean and quiet test environment (e.g. clean room). The fanless PFR series can prolong its life cycle during burn-in test.



Schematic Diagram for Burn-in Test

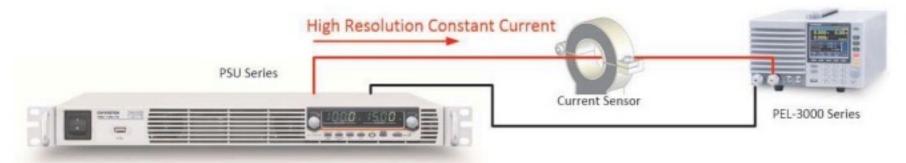
Best-fitting Electronic Load for Your Test (Single Channel or Multiple Channels?)

Electronic loads are often simulated as the characteristics (constant resistance, constant voltage or constant current) of the DUTs to test whether the output capability of the battery, power supply, solar cell, or power supply unit meets user's requirements. Unlike using general resistive components to test batteries and power supplies, electronic loads can dynamically switch simulated resistors, voltages or currents, customize the rise and fall times of current sink, and even edit a complex and continuous load change.

THE BASIC APPLICATIONS OF THE SINGLE-CHANNEL DC ELECTRONIC LOAD PEL-3000 SERIES

Current Sensor Evaluation

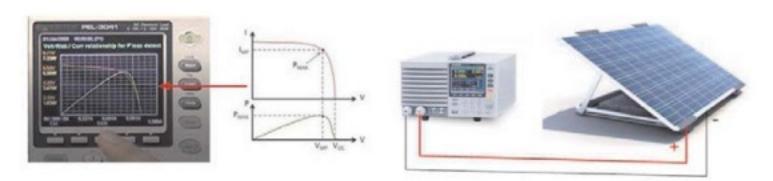
The PEL-3000 series provides three current levels: high, medium and low. The minimum current resolution of 0.01 mA can be selected based upon the test requirements. If a PEL-3000 collocating with a DC power supply, a high-precision constant current power supply can be formed to evaluate the current sensor.



Current Sensor Evaluation

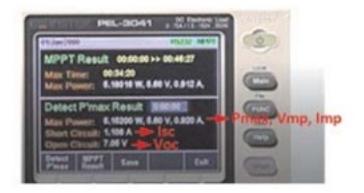
Solar Panel I-V Curve Display & MPPT Measurement

The MPPT Function can be done by the PEL-3000 series to simulate the operating current of the solar panel ranging from zero to the maximum current value, and at the same time measuring the output voltage and power of the solar panel to obtain the solar panel output voltage/current/power curve. The MPPT Function of the PEL-3000 series not only provides users with the Pmax, Vmp, Imp, Isc, Voc values of the solar panel, but also tracks the maximum power point of the solar panel in different shade conditions.



I-V Curve of The Solar Panel

Connections Between PEL-3041 and Solar Panel



Measurements for MPPT

Remark:

Pmax→ Maximum Power Point

V_{MP}→ Voltage at Maximum Power

I_{MP}→ Current at maximum power

Voc→ Open Circuit Voltage

Isc→ Short Circuit Current

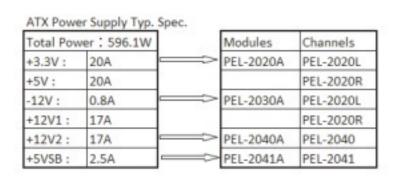
Best-fitting Electronic Load for Your Test (Single Channel or Multiple Channels?)

If users need to measure multiple sets of batteries or power supply units at a time, or evaluate multi-channel power output in the circuit, the multi-channel DC electronic load PEL-2000A will be the best measurement solution. PEL-2000A can evaluate the simultaneous power output capability of multiple power supplies, or test the output current of multiple power supplies by sequentially loading each output current according to the time interval defined by each output.

THE BASIC APPLICATIONS OF THE MULTI-CHANNEL DC ELECTRONIC LOAD PEL-2000A SERIES

The Output Test of PC Power Supply

Power supply output devices with small-power, multi-group and different specifications such as the ATX power supply for PCs can use PEL-2000A to evaluate the synchronous power output of multiple power supplies. A typical ATX power supply has 6 outputs. In order to ensure that the ATX power supply can provide sufficient power output when the 6 channels output simultaneously, the PEL-2000A can perform dynamic mode and load regulation tests on six outputs at the same time, or users can edit the Program mode to customize the severe test conditions to automatically determine the Pass or Fail of the ATX

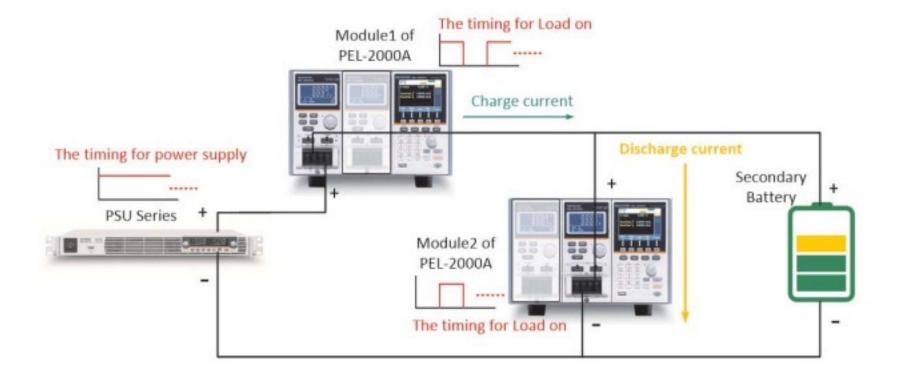




Test Diagram for ATX Power Supply

Battery Evaluation Test

Automated testing of high-speed battery charge and high-speed discharge can be achieved by using the PEL-2000A electronic load module in series and parallel with the power supply. The automated switching operation between the module and the module of the PEL-2000A can greatly shorten the test time and increase the reliability during the measurement process while comparing with the manual operation.



Automated Charge/ Discharge Test with PEL-2000A

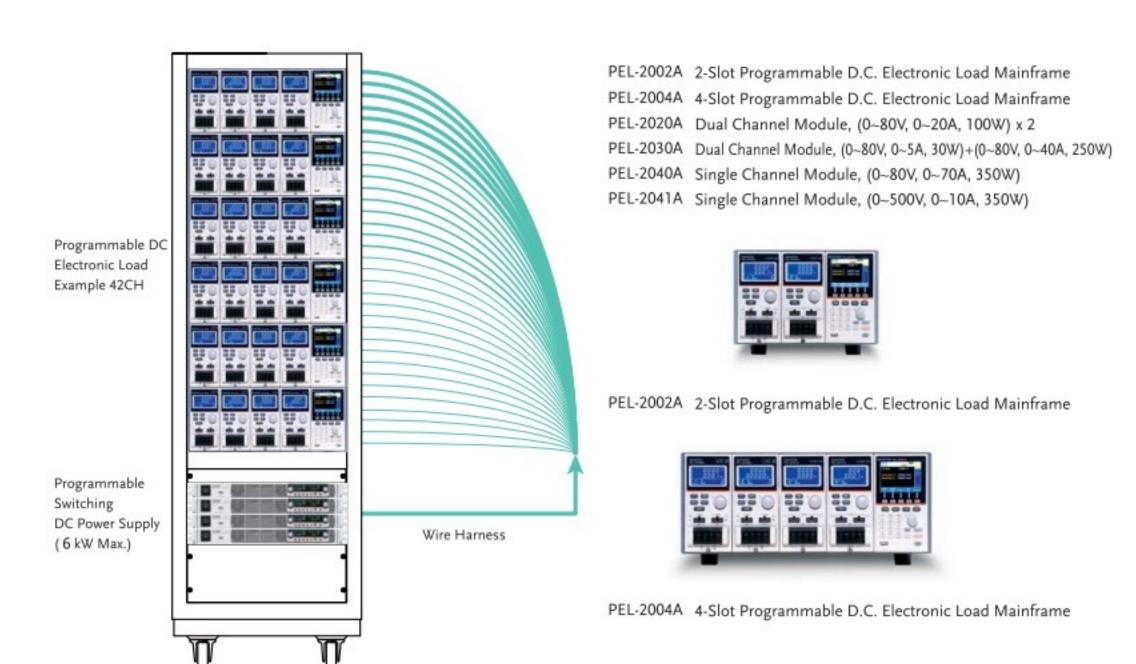
Automotive Wire Harness Performance Test System

Automotive Wire Harness Uses Multi-Channel and Continuous Power Supply Test System

Electric wire, installed in the automobile, plays an important role in supplying power and transmitting signals. The importance of electric wire has increased in the wake of the evolution of automotive electronization. For safe and comfortable driving, the reliability test for automotive wire harness is essential. The multi-channel test system, composed of a DC electronic load and a large current power supply, saves time in testing each wire harness and saves space for placing test instruments.

DC power supply and DC electronic load can be rack mounted by customers' electric power wiring test requirements. The following diagram shows many units of PEL-2000A series were used for providing power to multi-channel automotive wire harness in a long period of time.

The PEL-2000A series saves system rack space and costs. The series can flexibly arrange the required number of channels according to the actual requirements of DUTs. The series can also simulate many automotive devices to conduct continuous tests.



The PEL-2000A series saves system rack space and costs. The PEL-2000A series programmable DC electronic load, via USB or GPIB, can conduct independent control over multiple channels. By using custom-made monitor software, the series can simultaneously control many independent channels.

Test terminal and rack can be custom made. Users' test wire harness required terminal can be jointly mounted on a rack.

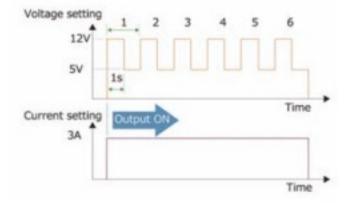
Test Script Applications-Solving Complex Test Patterns

The uniqueness of GW Instek Test Script function is to streamline test operator's complex measurement work by directly planning a set of changing voltage and current parameters via Microsoft Excel and uploading the edited Excel file to GW Instek power supplies so as to execute sequential power outputs. The following four test applications with different test patterns were easily executed by GW Instek Test Script function without software programming.

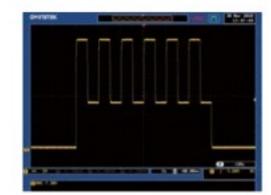
Test Script allows users to run repetitive cycle tests by setting parameters including output voltage, current, time, cycle, OVP, OCP, Bleeder, etc. Four GW Instek Power supplies support Test Script, including PFR, PSU, PSB, and PSW.



Parrern 1: Pulse output



Pattern Setting



Waveform Measurement

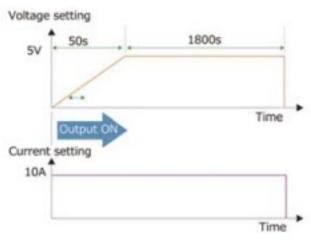
Settings: Set and execute a pattern that switches 12V/1sec to 5V/1sec for 6 times with the current setting of 3A.

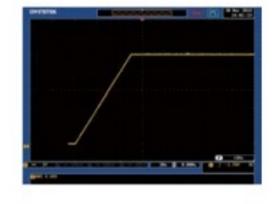
Test Script Setting:

28	CycleItem	s Number	Start Step	End Step							
29	Cycle										
30											
31	Step	Point	Output	Time(sec)	Voltage (V	Current (A	Веерег	Sense Aver	Jump to	Jump Cnt	Trig
32		1 Start	On	0.5	0	0					
33	- 1	2	On	1	12	3	On				
34 35		3	On	1	5	3			2	5	
35		4 end	On	1	0	0					

Test Script Applications - Solving Complex Test Patterns

Parrern 2: Aging test with a controlled rise time





Pattern Setting

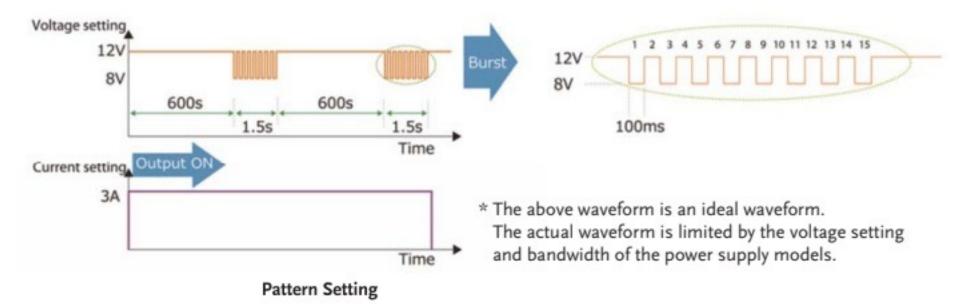
Waveform Measurement

The output voltage rises from 0V to 5V in 50 seconds at current setting of 10A and maintains the settings for 30 minutes and then output is turned off automatically.

Test Script Setting:



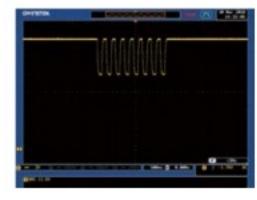
Parrern 3: Add burst noise



Burst signals are applied in the middle of the constant voltage output. For example, a continuous voltage output generates a burst noise that fluctuates between 12V and 8V. Each burst signal is 100ms and the burst signals last 1.5s that appears after every 10 minutes (600 s) of constant 12V output.

Test Script Setting:

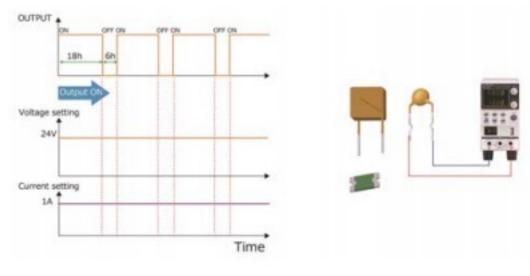


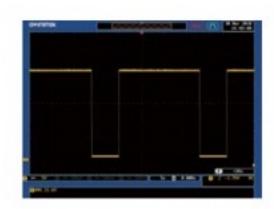


Waveform Measurement

Test Script Applications - Solving Complex Test Patterns

Parrern 4: Lifetime test





Pattern Setting

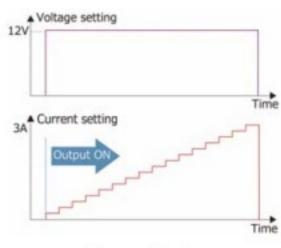
Waveform Measurement

For durability tests such as lights, heaters, etc., pattern that repeats for 18-hour output on and 6-hour output off for 100 days is as follows.

Test Script Setting:



Parrern 5: PPTC device (Resettable fuse) test



Pattern Setting



Waveform Measurement

A test example of self-resetting PTC verifies its open circuit characteristic by increasing current from 0 to 3A with 16-step resolutions. Test Script can easily execute a series of different currents under a constant voltage setting to test the blown and reset characteristic of a self-resetting PTC.

Test Script Setting:

Cyclelten	n Number	Start Step	End Step												
Cycle	1	1	16												
Step	Point	Output	Time(sec)	Voltage (V	Current (A	OVP(V)	OCP(A)	Eleeder	IV Mode	Var up (V/a	Var down(In up(A/m	Int down (A	(R(ohm)	Beep
	Start	Oa	0.1	12	0.1875	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
	2	On	0.1	12	0.375	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
- 1	3	On	0.1	12	0.5625	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
	4	On	0.1	12	0.75	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
	5	On	0.1	12	0.9375	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
	5	On	0.1	12	1.125	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
	7	On	0.1	12	1.3125	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
	8	Os	0.1	12	1.5	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
. 5	9	On	0.1	12	1.6875	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
- 10	0	On	0.1	12	1.875	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
1.	1	On	0.1	12	2.0625	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
13	2	On	0.1	12	2.25	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
1.	3.	On	0.1	12	2.4375	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
1	4	On	0.1	12	2,625	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
12	5	Oa	0.1	12	2.8125	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	
- 16	6 End	Os	1.0	12	3	MAX	MAX	ON	CCHS	MAX	MAX	MAX	MAX	MIN	

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AE			GPS-1830D	54W Linear D.C. Power Supply	D69
AEL-5002-350-18.75	50V/18.75A/1875W AC & DC Electronic Load	D119	GPS-1850D	90W Linear D.C. Power Supply	D69
AEL-5003-350-28	350V/28A/2800W AC & DC Electronic Load	D119	GPS-3030D	90W Linear D.C. Power Supply	D69
AEL-5004-350-37.5	350V/37.5A/3750W AC & DC Electronic Load	D119	GPS-3030DD	90W Linear D.C. Power Supply	D69
AEL-5006-350-56	350V/56A/5600W AC & DC Electronic Load	D119	GPS-2303	180W, 2-Channel, Linear D.C. Power Supply	D65
AEL-5008-350-75	350V/75A/7500W AC & DC Electronic Load	D119	GPS-3303	195W, 3-Channel, Linear D.C. Power Supply	D65
AEL-5012-350-112.5	350V/112.5A/111250W AC & DC Electronic Load	D119	GPS-4303	200W, 4-Channel, Linear D.C. Power Supply	D65
AEL-5015-350-112.5	350V/112.5A/15000W AC & DC Electronic Load	D119	GPW-001	Accessory UL/CSA Power Cord, 3000mm	D129
AEL-5019-350-112.5	350V/112.5A/18750W AC & DC Electronic Load	D119	GPW-002	Accessory VDE Power Cord, 3000mm	D129
AEL-5023-350-112.5	350V/112.5A/22500W AC & DC Electronic Load	D119	GPW-003	Accessory PSE Power Cord, 3000mm	D129
AEL-5002-425-18.75	425V/18.75A/1875W AC & DC Electronic Load	D119	GPW-005 GPW-006	Accessory Power Cord, 3000mm Accessory Power Cord, 3000mm	D129 D129
AEL-5003-425-28	425V/28A/2800W AC & DC Electronic Load	D119	GPW-007	Accessory Power Cord, 3000mm	D129
AEL-5004-425-37.5	425V/37.5A/3750W AC & DC Electronic Load	D119	GR	Accessory a Power Cord, Jovonnii	0125
AEL-5006-425-56	425V/56A/5600W AC & DC Electronic Load	D119	100000	B. 1.1.1	D100
AEL-5008-425-75 AEL-5012-425-112.5	425V/75A/7500W AC & DC Electronic Load 425V/112.5A/11250W AC & DC Electronic Load	D119 D119	GRA-401	Accessory Rack Adapter Kit, 19", 4U Size	D129
AEL-5012-425-112.5 AEL-5015-425-112.5	425V/112.5A/11250W AC & DC Electronic Load	D119	GRA-403 GRA-407	Accessory Rack Adapter Kit, 19", 4U Size Accessory Rack Adapter Kit, 19", 4U Size	D129 D129
AEL-5019-425-112.5	425V/112.5A/18750W AC & DC Electronic Load	D119	GRA-408	Accessory Rack Adapter Kit, 19", 40 Size	D129
AEL-5023-425-112.5	425V/112.5A/22500W AC & DC Electronic Load	D119	GRA-409	Accessory Rack Adapter Kit, 19*, 40 Size	D129
AEL-5003-480-18.75	480V/18.75A/2800W AC & DC Electronic Load	D119	GRA-410-E	Accessory Rack Mount Kit (EIA), 19*, 3U Size	D129
AEL-5004-480-28	480V/28A/3750W AC & DC Electronic Load	D119	GRA-410-J	Accessory Rack Mount Kit (JIS), 19", 3U Size	D129
AP			GRA-413-E	Accessory Rack Mount Kit (EIA), 19*, 3U Size for PEL-3211	D129
	Assessment COMP Later Cond	D100	GRA-413-J	Accessory Rack Mount Kit (JIS), 19", 3U Size for PEL-3211	D129
APS-001	Accessory - GPIB Interface Card	D129	GRA-414-E	Accessory Rack Mount Kit (EIA), 19*, 3U Size for PEL-3021/3041/311	
APS-002 APS-003	Accessory - RS-232/USB Interface Card	D129 D129	GRA-414-J	Accessory Rack Mount Kit (JIS), 19", 3U Size for PEL-3021/3041/311	
APS-003 APS-004	Accessory Output Voltage Capacity (0 ~ 600Vrms) Accessory Output Frequency Capacity (45–999.9Hz)	D129	GRA-418-E	Accessory Rack Mount Kit (EIA), 19*, 2U Size	D129
APS-007	Accessory - Output Frequency Capacity (43–999.9H2) Accessory - RS-232 Interface Card	D129	GRA-418-J	Accessory Rack Mount Kit (JIS), 19", 2U Size	D129
APS-008	Accessory - Air Inlet Filter	D129	GRA-423	Accessory Rack Mount Kit, 19", 2U Size	D129
APS-7050	500VA Programmable Linear AC Power Source	D83	GRA-424	Accessory Rack Mount Kit, 19", 2U Size	D129
APS-7100	1000VA Programmable Linear AC Power Source	D83	GRA-428	Accessory Rack Mount Kit (EIA), 19*, 3U Size	D129
APS-7050E	500VA AC Power Source	D87	GRA-429	Accessory Rack Mount Kit, 7U Size	D129
APS-7100E	1000VA AC Power Source	D87	GRA-430	Accessory Rack Mount Kit, 9U Size	D129
APS-7200	2000VA Programmable Linear AC Power Source	D83	GRA-431-J	Accessory Rack Mount Kit (JIS)	D129
APS-7300	3000VA Programmable Linear AC Power Source	D83	GRA-431-E	Accessory Rack Mount Kit (EIA)	D129
AS			GRA-439-J	Accessory Rack Mount Kit (JIS), 19", 4U Size	D129
ASR-001	Accessory Air Inlet Filter	D129	GRA-439-E GRA-441-I	Accessory Rack Mount Kit (EIA), 19", 4U Size Accessory Rack Mount Kit (JIS), 19", 4U Size	D129 D129
ASR-002	Accessory External Three Phase Control Unit	D129	GRA-441-E	Accessory Rack Mount Kit (JIS), 19 , 40 Size Accessory Rack Mount Kit (EIA), 19*, 40 Size	D129
ASR-2050	500VA Programmable AC/DC Power Source	D79	GRA-442-J	Accessory Rack Mount Kit (IS), 19", 4U Size	D129
ASR-2100	1000VA Programmable AC/DC Power Source	D79	GRA-442-E	Accessory Rack Mount Kit (EIA), 19*, 4U Size	D129
ASR-2050R	500VA Programmable AC/DC Power Source for 3U 1/2 Rack Mount	D79	GRA-449-J	Accessory Rack Mount Kit (JIS), 19", 3U Size	D129
ASR-2100R	1000VA Programmable AC/DC Power Source for 3U 1/2 Rack Mount	D79	GRA-449-E	Accessory Rack Mount Kit (EIA), 19*, 4U Size	D129
ASR-3200	2kVA Programmable AC/DC Power Source	D73	GRJ-1101	Accessory Module Cable (0.5m)	D129
ASR-3300	3kVA Programmable AC/DC Power Source	D73	GRM-001	Accessory Slide Bracket 2pcs/set	D129
ASR-3400	4kVA Programmable AC/DC Power Source	D73	GS		
ASR-3400HF	4kVA Programmable AC/DC Power Source	D73	E-177		
GE			GSM-20H10	Source Measure Unit	D39
GET-001	Accessory Extended Terminal for 30V/80V/160V Models	D129	GT		
GET-002	Accessory Extended Terminal for 250V/800V Models	D129	GTL-104A	Accessory Test Lead, U-type to Alligator Test Lead, Max. Current	D129
GET-003	Accessory Extended Universal Power Socket	D129		10A, 1000mm	
GET-004	Accessory Extended European Power Socket	D129	GTL-120	Accessory Test Lead, O-type to O-type Test Lead, Max. 40A,	D129
GET-005	Accessory Extended European Terminal for 30V/80V/160V Models	D129	GTL-121	1200mm	D129
GP			GTL-121	Accessory Sense Lead, O-type to free Lead, 1200mm Accessory Test Lead, U-type to Alligator Test Lead, Max. Current	D129
GPC-3060D	375W, 3-Channel, Linear D.C. Power Supply	D66	GILIZZ	40A, 1200mm	0125
GPC-6030D	375W, 3-Channel, Linear D.C. Power Supply	D66	GTL-123	Accessory Test Lead, O-type to O-type Test Lead, 1200mm	D129
GPD-2303S	180W, 2-Channel, Programmable Linear D.C. Power Supply	D58	GTL-130	Accessory Test Leads: 2 x red, 2 x Black, for 250V/800V Models,	D129
GPD-3303D	195W, 3-Channel, Programmable Linear D.C. Power Supply	D58		1200mm	
GPD-3303S	195W, 3-Channel, Programmable Linear D.C. Power Supply	D58	GTL-134	Accessory Test Leads for Rear Panel, 1200mm, 10A, 16 AWG	D129
GPD-4303S	195W, 4-Channel, Programmable Linear D.C. Power Supply	D58	GTL-137	Accessory Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V)	D129
GPE-1326	192W, Single Channel, Linear D.C. Power Supply	D64	GTL-202		D120
GPE-2323	192W, 2-Channel, Linear D.C. Power Supply	D64	315-202	Accessory Sense Lead, Banana to Banana Lead, European Terminal 200mm	, 5129
GPE-3323 GPE-4323	217W, 3-Channel, Linear D.C. Power Supply 212W, 4-Channel, Linear D.C. Power Supply	D64 D64	GTL-203A	Accessory Test Lead, Banana to Alligator, European Terminal, Max.	D129
GPP-1326	Single-Output Programmable DC Power Supply	D56		Current 3A, 1000mm	
GPP-2323	Dual-Output Programmable DC Power Supply	D56	GTL-204A	Accessory Test Lead, Banana to Alligator, European Terminal, Max.	D129
GPP-3323	Three-Output Programmable DC Power Supply	D56	CTI 210	Current 10A, 1000mm	D120
GPP-3060	385W Triple-channel Programmable DC Power Supply	D52	GTL-218	Accessory Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm	D129
GPP-3650	385W Triple-channel Programmable DC Power Supply	D52	GTL-219	Accessory Test Lead, O-type to O-type Test Lead, Max. 200A,	D129
GPP-4323	Four-Output Programmable DC Power Supply	D56		3000mm	
GPP-6030	385W Triple-channel Programmable DC Power Supply	D52	GTL-220	Accessory Test Lead, O-type to O-type Test Lead, Max. 300A,	D129
GPR-0830HD	240W Linear D.C. Power Supply	D67	A	1500mm	
GPR-11H30D	330W Linear D.C. Power Supply	D67	GTL-221	Accessory Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm	D129
GPR-1810HD	180W Linear D.C. Power Supply	D68	GTL-222	Accessory Test Lead, O-type to O-type Test Lead, Max. 400A,	D129
GPR-1820HD	360W Linear D.C. Power Supply	D67		1500mm	- 120
GPR-3060D	180W Linear D.C. Power Supply	D68	GTL-223	Accessory Test Lead, O-type to O-type Test Lead, Max. 400A,	D129
GPR-30H10D	300W Linear D.C. Power Supply	D67	10 <u>100 100 100 100 100 100 100 100 100 </u>	3000mm	
GPR-3510HD	350W Linear D.C. Power Supply	D67	GTL-232	Accessory RS-232C Cable, 9-pin, F-F Type, Null Modern, 2000mm	D129
GPR-6030D	180W Linear D.C. Power Supply	D68	GTL-238	Accessory RS-232 Cable, 9-pin, M-F type, 1000mm	D129
GPR-6060D	360W Linear D.C. Power Supply	D67	GTL-240 GTL-246	Accessory USB Cable, USB 2.0, A-B type (L type), 1200mm Accessory USB Cable, USB 2.0, A-B type, 1200mm	D129 D129
GPR-7550D	375W Linear D.C. Power Supply	D67	GTL-246 GTL-248	Accessory USB Cable, USB 2.0, A-B type, 1200mm Accessory GPIB Cable, Double Shielded, 2000mm	
GPS-001	Accessory Knob, Voltage/Current Protection Knob	D129	G11-240	receasory or to capie, bouble shielded, 2000min	D129

CT1 242		D120	
GTL-249 GTL-255	Accessory Frame Link Cable, 300mm Accessory Frame Link Cable, 300mm	D129 D129	PEL-5008C-150-1
GTL-258	Accessory GPIB Cable, 25 pins Micro-D Connector	D129	PEL-5012C-150-
GTL-259	Accessory RS-232 Cable with DB9 connector to RJ45	D129	PEL-5015C-150-
GTL-260	Accessory RS-485 Cable with DB9 connector to RJ45	D129	PEL-5018C-150-
GTL-261	Accessory Serial Master Cable+Terminator, 0.5M	D129	PEL-5020C-150-2
GTL-262	Accessory RS-485 Slave cable	D129	PEL-5024C-150-2
GU			PEL-5006C-600- PEL-5008C-600-
GUG-001	Accessory GPIB-USB Adaptor, GPIB to USB Adaptor	D129	PEL-5010C-600-
GUR-001A	Accessory RS232-USB Cable, 300mm	D129	PEL-5012C-600-
GUR-001B	Accessory RS-232 to USB Adapter with #4-40 UNC Rivet Nut	D129	PEL-5015C-600-
PE			PEL-5018C-600-
PEL-001	Accessory GPIB Card	D105	PEL-5020C-600-
PEL-002	Accessory Rack Mount Kit, PEL-2000 Series	D105	PEL-5024C-600-
PEL-003	Accessory Panel Cover	D105	PEL-5006C-1200
PEL-004 PEL-005	Accessory GPIB Card	D129	PEL-5008C-1200
PEL-005 PEL-006	Accessory Connect Cu Plate Accessory Connect Cu Plate	D129 D129	PEL-5010C-1200 PEL-5012C-1200
PEL-007	Accessory Connect Cu Plate	D129	PEL-5015C-1200
PEL-008	Accessory Connect Cu Plate	D129	PEL-5018C-1200
PEL-009	Accessory Connect Cu Plate	D129	PEL-5020C-1200
PEL-010	Accessory Dust Filter	D129	PEL-5024C-1200
PEL-011	Accessory Load Input Terminal Cover	D129	PEL-5004G-150-
PEL-012	Accessory Terminal Fittings Kits	D129	PEL-5005G-150-
PEL-013	Accessory Flexible Terminal Cover	D129	PEL-5006G-150-
PEL-014	Accessory J1/J2 Protection Plug	D129	PEL-5004G-600-
PEL-016 PEL-018	Accessory LAN Card Accessory LAN Card	D105 D129	PEL-5005G-600- PEL-5006G-600-
PEL-018	Accessory CPIB Card	D110	PEL-5004G-1200
PEL-023	Accessory RS-232 Card	D110	PEL-5005G-1200
PEL-024	Accessory LAN Card	D110	PEL-5006G-1200
PEL-025	Accessory USB Card	D110	DE
PEL-026	Accessory Hook Ring	D110	P.F.
PEL-027-1-4	Accessory Rack Mount Kit	D110	PFR-100M
PEL-028	Accessory HANDLES, U-shaped Handle(Fixed to the Bracket)	D110	PFR-100L
PEL-029	Accessory HANDLES, Rack Accessories	D124	PP
PEL-030 PEL-031	Accessory GPIB+RS-232 Card Accessory Rack Mount Kit	D111 D125	PPE-3323
PEL-031	Accessory Rack Mount Kit Accessory 9923 Current Waveform Generator + RS232 Interface	D125	PPH-1503
PEL-503-80-50	80V/50A/250W DC Electronic Load	D117	PPH-1503D
PEL-504-80-70	80V/70A/350W DC Electronic Load	D117	PPH-1506D
PEL-504-500-15	500V/15A/350W DC Electronic Load	D117	PPH-1510D PPT-1830
PEL-507-80-140	80V/140A/700W DC Electronic Load	D117	PPT-3615
PEL-507-500-30	500V/30A/700W DC Electronic Load	D117	PPX-1005
PEL-2002A(B)	2-Slot Programmable D.C. Electronic Load Mainframe	D105	PPX-2002
PEL-2004A(B)	4-Slot Programmable D.C. Electronic Load Mainframe	D105	PPX-2005
PEL-2020A(B)	200W, Dual Channel D.C. Electronic Load Module, (1-80V, 20A, 100W) x 2	D105	PPX-3601
PEL-2030A(B)	200W, Dual Channel D.C. Electronic Load Module, (1~80V, 5A, 30W)	D105	PPX-3603
	& (1-80V, 40A, 250W)		PPX-10H01
PEL-2040A(B)	350W, Single Channel D.C. Electronic Load Module, (1~80V, 70A,	D105	PPX-G
PEL-2041A(B)	350W) 350W, Single Channel D.C. Electronic Load Module, (2.5–500V, 10A,	D105	PS
a La La Milaj	350W)	0.103	PSB-001
PEL-3021	175W Programmable D.C. Electronic Load	D93	PSB-003
PEL-3041	350W Programmable D.C. Electronic Load	D93	PSB-004
PEL-3111	1050W Programmable D.C. Electronic Load	D93	F30-004
PEL-3211	2100W Booster Unit for PEL-3111 only	D93	PSB-005
PEL-3212 PEL-3322	2100W Programmable D.C. Electronic Load 3150W Programmable D.C. Electronic Load	D93 D93	PSB-006
PEL-3322 PEL-3323	3150W Programmable D.C. Electronic Load 3150W Programmable D.C. Electronic Load	D93	PSB-007
PEL-3424	4200W Programmable D.C. Electronic Load	D93	PSB-008
PEL-3533	5250W Programmable D.C. Electronic Load	D93	PSB-101
PEL-3535	5250W Programmable D.C. Electronic Load	D93	PSB-102
PEL-3744	7350W Programmable D.C. Electronic Load	D93	PSB-103
PEL-3955	9450W Programmable D.C. Electronic Load	D93	PSB-104
PEL-3021H	175W Programmable D.C. Electronic Load	D93	PSB-105 PSB-106
PEL-3041H	350W Programmable D.C. Electronic Load	D93	PSB-1400L
PEL-3111H	1050W Programmable D.C. Electronic Load	D93	PSB-1400M
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PEL-3212H PEL-3322H	3150W Programmable D.C. Electronic Load	D93	PSB-1800M
PEL-3322H	3150W Programmable D.C. Electronic Load 3150W Programmable D.C. Electronic Load	D93	PSB-2400H PSB-2400L
PEL-3424H	4200W Programmable D.C. Electronic Load	D93	PSB-2400L2
PEL-3533H	5250W Programmable D.C. Electronic Load	D93	PSB-2800H
PEL-3535H	5250W Programmable D.C. Electronic Load	D93	PSB-2800L
LET-333311	7350W Programmable D.C. Electronic Load	D93	PSB-2800LS
PEL-3744H PEL-3955H	9450W Programmable D.C. Electronic Load	D93	PSH-2018A
PEL-3744H PEL-3955H PEL-3031E	9450W Programmable D.C. Electronic Load 150V/60A/300W Programmable Single-channel D.C. Electronic Load	D93 D99	PSH-3610A
PEL-3744H PEL-3955H PEL-3031E PEL-3032E PEL-5006C-150-600	9450W Programmable D.C. Electronic Load	D93	

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PEL-5015C-150-1500	150V/1500A/15kW High Power DC Electronic Load	D109
PEL-5018C-150-1800	150V/1800A/18kW High Power DC Electronic Load	D109
PEL-5020C-150-2000	150V/2000A/20kW High Power DC Electronic Load	D109
PEL-5024C-150-2000	150V/2000A/24kW High Power DC Electronic Load	D109
PEL-5006C-600-420	600V/420A/6kW High Power DC Electronic Load	D109
PEL-5008C-600-560 PEL-5010C-600-700	600V/560A/8kW High Power DC Electronic Load 600V/700A/10kW High Power DC Electronic Load	D109
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PEL-5015C-600-1050	600V/1050A/15kW High Power DC Electronic Load	D109
PEL-5018C-600-1260	600V/1260A/18kW High Power DC Electronic Load	D109
PEL-5020C-600-1400	600V/1400A/20kW High Power DC Electronic Load	D109
PEL-5024C-600-1680	600V/1680A/24kW High Power DC Electronic Load	D109
PEL-5006C-1200-240	1200V/240A/6kW High Power DC Electronic Load	D109
PEL-5008C-1200-320	1200V/320A/8kW High Power DC Electronic Load	D109
PEL-5010C-1200-400	1200V/400A/10kW High Power DC Electronic Load	D109
PEL-5012C-1200-480	1200V/480A/12kW High Power DC Electronic Load	D109
PEL-5015C-1200-600 PEL-5018C-1200-720	1200V/600A/15kW High Power DC Electronic Load	D109
PEL-5018C-1200-720 PEL-5020C-1200-800	1200V/720A/18kW High Power DC Electronic Load 1200V/800A/20kW High Power DC Electronic Load	D109
PEL-5024C-1200-960	1200V/960A/24kW High Power DC Electronic Load	D109
PEL-5004G-150-400	150V/400A/4000kW High Power DC Electronic Load	D125
PEL-5005G-150-500	150V/500A/5000kW High Power DC Electronic Load	D125
PEL-5006G-150-600	150V/600A/6000kW High Power DC Electronic Load	D125
PEL-5004G-600-280	600V/280A/4000kW High Power DC Electronic Load	D125
PEL-5005G-600-350	600V/350A/5000kW High Power DC Electronic Load	D125
PEL-5006G-600-420	600V/420A/6000kW High Power DC Electronic Load	D125
PEL-5004G-1200-160	1200V/160A/4000kW High Power DC Electronic Load	D125
PEL-5005G-1200-200	1200V/200A/5000kW High Power DC Electronic Load	D125
PEL-5006G-1200-240	1200V/240A/6000kW High Power DC Electronic Load	D125
PF		
PFR-100M	Fanless Multi-range D.C. Power Supply	D27
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PPE-3323 PPH-1503	207W, 3-Channel, Programmable Linear D.C. Power Supply 45W Programmable High Precision Linear D.C. Power Supply	D61 D43
PPH-1503 PPH-1503D	45W/18W Programmable High Precision Linear D.C. Power Supply	D43
PPH-1506D	45W/36W Programmable High Precision Linear D.C. Power Supply	D43
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PPH-1510D PPT-1830 PPT-3615 PPX-1005	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply	D43 D62 D62 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply	D43 D62 D62 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply	D43 D62 D62 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply	D43 D62 D62 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply	D43 D62 D62 D47 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply	D43 D62 D62 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed)	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed)	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1)	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1)	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D29 D29
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2, PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Joint Kit: Includes 4 Joining plates, [M3x6]screws x 4;	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D29 D29
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2, PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Joint Kit: Includes 4 Joining plates, [M3x6]screws x 4; [M3x8]screw x 2	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D29 D29 D29 D29
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2, PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory RS232C Cable (PSB-2000 Only)	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D29 D29 D29 D29 D29
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008 PSB-101	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2, PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory RS232C Cable (PSB-2000 Only) Accessory RS232C Cable (PSB-2000 Only) Accessory Cable for 2 units	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D29 D29 D29 D29 D29 D29
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2, PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory RS232C Cable (PSB-2000 Only)	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D29 D29 D29 D29 D29
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008 PSB-101 PSB-102 PSB-103 PSB-103 PSB-104	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Cable for 2 units Accessory Cable for 3 units Accessory Cable for 4 units Accessory Cable for 2 units Accessory Cable for 2 units	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory RS232C Cable (PSB-2000 Only) Accessory Cable for 2 units Accessory GPIB Card	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-105 PSB-106	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory RS232C Cable (PSB-2000 Only) Accessory Cable for 2 units Accessory Cable for 3 units Accessory Cable for 4 units Accessory Cable for 2 units Accessory Cable for 2 units Accessory Cable for 2 units Accessory Basic Accessory Kit	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-106 PSB-106 PSB-106 PSB-106 PSB-106	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2, PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory RS232C Cable (PSB-2000 Only) Accessory Cable for 2 units Accessory Cable for 3 units Accessory Cable for 4 units Accessory Cable for 2 units Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D29 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-105 PSB-106	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory RS232C Cable (PSB-2000 Only) Accessory Cable for 2 units Accessory Cable for 3 units Accessory Cable for 4 units Accessory Cable for 2 units Accessory Cable for 2 units Accessory Cable for 2 units Accessory Basic Accessory Kit	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-008 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-104 PSB-105 PSB-106 PSB-106 PSB-106 PSB-1400L PSB-1400M	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory RS232C Cable (PSB-2000 Only) Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply 160V/10A/400W Programmable Multi-Range D.C. Power Supply 160V/10A/400W Programmable Multi-Range D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33 D3
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-102 PSB-103 PSB-104 PSB-105 PSB-105 PSB-106 PSB-106 PSB-106 PSB-106 PSB-1400L PSB-1800M PSB-1800M PSB-1800M PSB-1800M PSB-2400H	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply 160V/10A/400W Programmable Multi-Range D.C. Power Supply 160V/20A/800W Programmable Multi-Range D.C. Power Supply 160V/20A/800W Programmable Multi-Range D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33 D3
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-106 PSB-106 PSB-106 PSB-1400L PSB-1400M PSB-1800L PSB-1800M PSB-1800M PSB-2400H PSB-2400L	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Cable for 2 units Accessory Cable for 2 units Accessory Cable for 3 units Accessory Cable for 4 units Accessory Cable for 2 units Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33 D3
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-106 PSB-106 PSB-106 PSB-106 PSB-1400L PSB-1800L PSB-1800L PSB-1800M PSB-2400H PSB-2400L PSB-2400L PSB-2400L	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes; (PSB-007 Joint Kit, Verical bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Joint Kit: Includes 4 Joining plates, [M3x6]screws x 4; [M3x8]screw x 2 Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33 D3
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-104 PSB-105 PSB-104 PSB-105 PSB-104 PSB-105 PSB-106 PSB-106 PSB-106 PSB-1400L PSB-1400L PSB-1400M PSB-1800M PSB-2400L PSB-2400L PSB-2400L PSB-2400L PSB-2400L	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes; (PSB-007 Joint Kit, Verical bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Joint Kit: Includes 4 Joining plates, [M3x6]screws x 4; [M3x8]screw x 2 Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 800W Multi-Range Programmable Switching D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33 D3
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-102 PSB-103 PSB-104 PSB-105 PSB-104 PSB-105 PSB-104 PSB-105 PSB-104 PSB-105 PSB-104 PSB-105 PSB-106 PSB-100 P	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 800W Multi-Range Programmable Switching D.C. Power Supply 800W Multi-Range Programmable Switching D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D29 D29 D29 D2
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-104 PSB-105 PSB-104 PSB-105 PSB-104 PSB-105 PSB-106 PSB-106 PSB-106 PSB-1400L PSB-1400L PSB-1400M PSB-1800M PSB-2400L PSB-2400L PSB-2400L PSB-2400L PSB-2400L	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 800W Multi-Range Programmable Switching D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33 D3
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-101 PSB-102 PSB-103 PSB-104 PSB-105 PSB-106 PSB-106 PSB-106 PSB-1400L PSB-1400L PSB-1800L PSB-1800L PSB-2400L PSB-2400L PSB-2400L PSB-2400L PSB-2800L PSB-2800L PSB-2800L PSB-2800L PSB-2800LS	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Cable for 2 units Accessory Basic Accessory Kit 40V/40A/400W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 40V/80A/800W Programmable Multi-Range D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 400W Multi-Range Programmable Switching D.C. Power Supply 800W Multi-Range Programmable Switching D.C. Power Supply 800W Multi-Range Programmable Switching D.C. Power Supply	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D29 D29 D29 D2
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-103 PSB-104 PSB-103 PSB-104 PSB-105 PSB-106 PSB-1400L PSB-1400M PSB-1400M PSB-1400M PSB-2400L PSB-2400L PSB-2400L PSB-2400L PSB-2400L PSB-2800L PSB-2800L PSB-2800L PSB-2800L PSB-2800L PSB-2800LS PSH-2018A	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/1A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Card Accessory GPIB Interface(Factory Installed) Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Parallel Connection Signal Cable Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Cable for 2 units	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D49 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33 D3
PPH-1510D PPT-1830 PPT-3615 PPX-1005 PPX-2002 PPX-2005 PPX-3601 PPX-3603 PPX-10H01 PPX-G PS PSB-001 PSB-003 PSB-004 PSB-005 PSB-006 PSB-007 PSB-101 PSB-102 PSB-102 PSB-103 PSB-104 PSB-105 PSB-104 PSB-105 PSB-104 PSB-105 PSB-106 PSB-100	45W/36W Programmable High Precision Linear D.C. Power Supply 138W, 3-Channel, Programmable Linear D.C. Power Supply 126W, 3-Channel, Programmable Linear D.C. Power Supply 10V/5A/50W Programmable High-precision DC Power Supply 20V/2A/40W Programmable High-precision DC Power Supply 20V/5A/100W Programmable High-precision DC Power Supply 36V/1A/36W Programmable High-precision DC Power Supply 36V/3A/108W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply 100V/1A/100W Programmable High-precision DC Power Supply Accessory GPIB Interface(Factory Installed) Accessory GPIB Card Accessory Parallel Connection kit (for horizontal installation), Kit includes: (PSB-007 Joint Kit, Horizontal bus bar x 2 , PSB-005 x1) Accessory Parallel Connection kit (for vertical installation) Kit includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005x1) Accessory Parallel Connection Signal Cable Accessory Parallel Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Serial Connection Signal Cable Accessory Gable for 2 units Accessory Cable for 2 units Accessory Cable for 3 units Accessory Cable for 4 units Accessory Cable for 9 units Ac	D43 D62 D62 D47 D47 D47 D47 D47 D47 D47 D47 D47 D29 D29 D29 D29 D29 D29 D33 D33 D33 D33 D33 D33 D33 D33 D33 D3

PSM-2010	200W Programmable Dual-Range Linear D.C. Power Supply	D59
PSM-3004	120W Programmable Dual-Range Linear D.C. Power Supply	D59
PSM-6003	200W Programmable Dual-Range Linear D.C. Power Supply	D59
PSP-2010	200W Programmable Switching D.C. Power Supply	D36
PSP-405	200W Programmable Switching D.C. Power Supply	D36
PSP-603	200W Programmable Switching D.C. Power Supply	D36
PSS-2005	100W Programmable Linear D.C. Power Supply	D60
PSS-3203	96W Programmable Linear D.C. Power Supply	D60
PST-3201	96W Triple Output Programmable D.C. Power Supply	D63
PST-3202	158W Triple Output Programmable D.C. Power Supply	D63
PSU 6-200	1200W Programmable Switching DC Power Supply	D19
PSU 8-180	1440W Programmable Switching DC Power Supply	D19
PSU 12.5-120	1500W Programmable Switching DC Power Supply	D19
PSU 15-100	1500W Programmable Switching DC Power Supply	D19
PSU 20-76	1520W Programmable Switching DC Power Supply	D19
PSU 30-50 PSU 40-38	1500W Programmable Switching DC Power Supply	D19
PSU 50-30	1520W Programmable Switching DC Power Supply 1500W Programmable Switching DC Power Supply	D19
PSU 60-25	1500W Programmable Switching DC Power Supply	D19
PSU 80-19	1520W Programmable Switching DC Power Supply	D19
PSU 100-15	1500W Programmable Switching DC Power Supply	D19
PSU 150-10	1500W Programmable Switching DC Power Supply	D19
PSU 300-5	1500W Programmable Switching DC Power Supply	D19
PSU 400-3.8	1520W Programmable Switching DC Power Supply	D19
PSU 600-2.6	1560W Programmable Switching DC Power Supply	D19
PSU-001	Accessory Front Panel Filter kit (factory Installed)	D19
PSU-01A	Accessory Joins a Vertical Stack of 2 PSU Units Together. 2U-Sized	D19
	Handles x2, Joining Plates x2	319
PSU-01B	Accessory Bus Bar for 2 units in Parallel Operation	D19
PSU-01C	Accessory Cable for 2 units in Parallel Operation	D19
PSU-02A	Accessory Joins a Vertical Stack of 3 PSU units Together. 3U-sized	D19
	handles x2, Joining Plates x2	
PSU-02B	Accessory Bus Bar for 3 units in Parallel Operation	D19
PSU-02C	Accessory Cable for 3 units in Parallel Operation	D19
PSU-03A	Accessory Joins a Vertical Stack of 4 PSU units Together.	D19
	4U-sized Handles x2, Joining Plates x2	
PSU-03B	Accessory Bus Bar for 4 units in Parallel Operation	D19
PSU-03C	Accessory Cable for 4 units in Parallel Operation	D19
PSU-232	Accessory RS232 Cable with DB9 Connector kit	D19
PSU-485	Accessory RS485 Cable with DB9 Connector kit	D19
PSU-GPIB	Accessory PSU GPIB Interface Card (Factory Installed)	D19
PSU-ISO-I	Accessory Isolated Current Remote Control Card (Factory Installed)	D19
PSU-ISO-V	Accessory Isolated Voltage Remote Control Card (Factory Installed)	D19
PSW160-14.4	720W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW160-21.6	1080W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW160-7.2	360W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW250-13.5	1080W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW250-4.5	360W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW250-9	720W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW30-108	1080W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW30-36	360W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW30-72	720W Multi-Range Programmable Switching D.C. Power Supply 1080W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW40-27 PSW40-54	360W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW40-81	720W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW-720L11	30V/36A*2 720W Multi-Range D.C. Power Supply	D9
PSW-720L12	30V/36A*1 40V/27A*1 720W Multi-Range D.C. Power Supply	D9
PSW-720L14	30V/36A*1 80V/13.5A*1 720W Multi-Range D.C. Power Supply	D9
PSW-720L15	30V/36A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply	D9
PSW-720L22	40V/27A*2 720W Multi-Range D.C. Power Supply	D9
PSW-720L24	40V/27A*1 80V/13.5A*1 720W Multi-Range D.C. Power Supply	D9
PSW-720L25	40V/27A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply	D9
PSW-720L44	80V/13.5A*2 720W Multi-Range D.C. Power Supply	D9
PSW-720L45	80V/13.5A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply	D9
PSW-720L55	160V/7.2A=2 720W Multi-Range D.C. Power Supply	D9
PSW-720H66	250V/4.5A*2 720W Multi-Range D.C. Power Supply	D9
PSW-720H68	250V/4.5A*1 800V/1.44A*1 720W Multi-Range D.C. Power Supply	D9
PSW-720H88	800V/1.44A*2 720W Multi-Range D.C. Power Supply	D9
PSW800-1.44	360W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW800-2.88	720W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW800-4.32	1080W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW80-13.5	360W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW80-27	720W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW80-40.5	1080W Multi-Range Programmable Switching D.C. Power Supply	D15
PSW-1080L111	30V/36A*3 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L112	30V/36A°2 40V/27A°1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L114	30V/36A*2 80V/13.5A*1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L115	30V/36A*2 160V/7.2A*1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L122	30V/36A*1 40V/27A*2 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L124	30V/36A*1 40V/27A*1 80V/13.5A*1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L125	30V/36A*1 40V/27A*1 160V/7.2A 1080W Multi-Range D.C. Power Supply	D9

PSW-1080L144	30V/36A*1 80V/13.5A*2 1080W Multi-Range D.C. Power supply	D9
PSW-1080L145	30V/36A*1 80V/13.5A*1 160V/7.2A*1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L155	30V/36A*1 160V/7.2A*2 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L222	40V/27A*3 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L224	40V/27A*2 80V/13.5A*1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L225	40V/27A°2 160V/7.2A°1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L244	40V/27A*1 80V/13.5A*2 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L245	40V/27A*1 80V/13.5A*1 160V/7.2A*1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080L255	40V/27A*1 160V/7.2A*2 1080W Multi-Range D.C. Power supply	D9
PSW-1080L444	80V/13.5A°3 1080W Multi-Range D.C. Power supply	D9
PSW-1080L445	80V/13.5A*2 160V/7.2A*1 1080W Multi-Range D.C. Power supply	D9
PSW-1080L455	80V/13.5A*1 160V/7.2A*2 1080W Multi-Range D.C. Power supply	D9
PSW-1080L555	160V/7.2A°3 1080W Multi-Range D.C. Power supply	D9
PSW-1080H666	250V/4.5A*3 1080W Multi-Range D.C. Power Supply	D9
PSW-1080H668	250V/4.5A*2 800V/1.44A*1 1080W Multi-Range D.C. Power Supply	D9
PSW-1080H688	250V/4.5A*1 800V/1.44A*2 1080W Multi-Range D.C. Power Supply	D9
PSW-1080H888	800V/1.44A+3 1080W Multi-Range D.C. Power Supply	D9
PSW-001	Accessory Accessory Kits	D1:
PSW-002	Accessory Simple IDC Tool	D1:
PSW-003	Accessory Contact Removal Tool	D1:
PSW-004	Accessory Basic Accessory Kit for 30V/80V/160V Models	D1:
PSW-005	Accessory Series Operation Cable for 2 units(for 30V/80V/160V)	D1:
PSW-006	Accessory Parallel Operation Cable for 2 units	D1:
PSW-007	Accessory Parallel Operation Cable for 3 units	D1:
PSW-008	Accessory Basic Accessory Kit for 250V/800V Models	D1:
PSW-009	Accessory Output Terminal Cover for 30V/80V/160V Models	D1:
PSW-010	Accessory Large Filter (Type II/III)	D15
PSW-011	Accessory Output Terminal Cover for 250V/800V Models	D1:
PSW-012	Accessory High Voltage Output Terminal for 250V/800V Model	D15
SP		
SPD-3606	375W, 3-Channel, Programmable Switching D.C. Power Supply	D3
SPS-1230	360W Switching D.C. Power Supply	D3
SPS-1820	360W Switching D.C. Power Supply	D3
SPS-2415	360W Switching D.C. Power Supply	D3
SPS-3610	360W Switching D.C. Power Supply	D3
SPS-606	360W Switching D.C. Power Supply	D3



DC POWER SUPPLIES

Stemming from the design and manufacture demands of electronic industries, GW Instek offers diverse power supply product lines to meet user's demand for a variety of applications. Based on different needs, the product lines can be divided into several categories including DC Power Supply, AC Power Source, DC Electronic Load and Source Measure Unit.

For DC Power Supply, the products can be briefly categorized by the following types, Technic, Programmable or Non-programmable, Single or Multiple Outputs, High Precision or Affordable Price, Dual Range and Wide Combinations of Voltage and Current, which can be selected to meet the application requirements.

Precision source meter is the latest product offering a four-quadrant power supply, which can accurately utilize voltage or current and measure voltage and/or current at the same time.

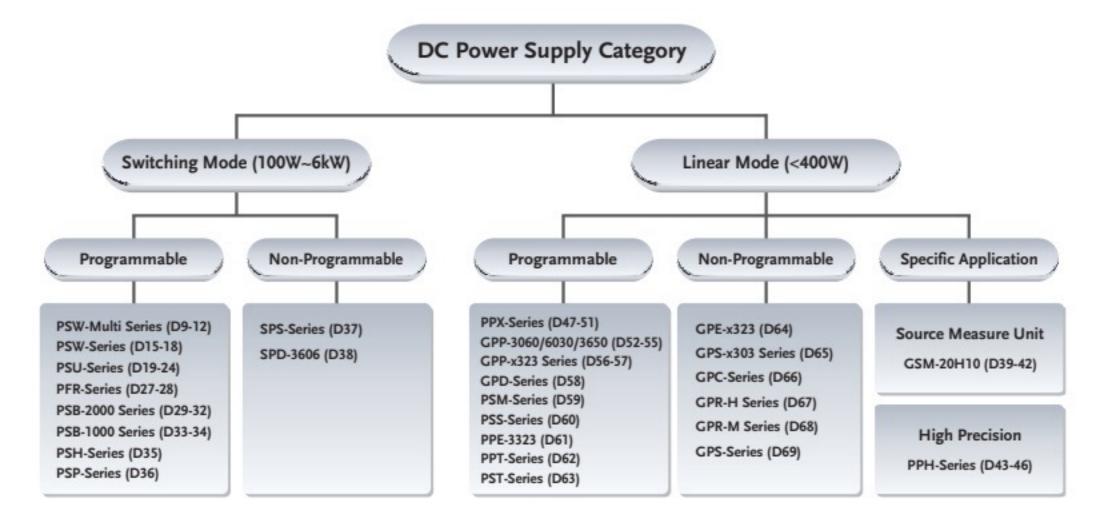
GW Instek offers more than 100 power supply products, Which are suitable for the requirements of Electronic Assembly Testing, Education, Component Testing, Wireless Product Testing, Burn-in, Battery-Power Product Testing Automotive, Aerospace industries and so on.

PRODUCTS

- Programmable & Single Channel DC Power Supply
- Non-Programmable & Single Channel DC Power Supply
- Programmable & Multiple Channel DC Power Supply
- Non-Programmable & Multiple Channel DC Power Supply
- Source Measure Unit

DC POWER SUPPLIES

GENERAL SELECTION GUIDE OF POWER SUPPLY BY APPLICATION



Series	Education	R&D/ Research Lab	Production Testing	ATE for Production	Burn-IN	Page
PSW-Multi Series		٧	V	٧	V	D9-12
PSW-Series		V	V	V	V	D15-18
PSU-Series		V	V	V	V	D19-24
PFR-Series		٧		V		D27-28
PSB-2000 Series		٧	V	V	V	D29-32
PSB-1000 Series		٧	V	V	V	D33-34
PSH-Series		٧	V	V	V	D35
PSP-Series	٧	V		V		D36
SPS-Series			V	V	V	D37
SPD-3606	٧	٧	V		٧	D38
GSM-20H10	٧	٧	٧	٧		D39-42
PPH-Series		٧	V		٧	D43-46
PPX-Series		٧	V		V	D47-51
GPP-3060/6030/3650		٧	V	V	٧	D52-55
GPP-x323 Series	V	V	V		V	D56-57
GPD-Series	V	V	V			D58
PSM-Series		V	٧		٧	D59
PSS-Series		V	V	V		D60
PPE-3323	V	٧	٧	V		D61
PPT-Series	V	٧	V	V		D62
PST-Series	V	٧	٧	V		D63
GPE-x323	٧	V	V			D64
GPS-x303 Series	٧	V	٧			D65
GPC-Series	٧	V	٧			D66
GPR-H Series		٧	٧		٧	D67
GPR-M Series		٧	٧		V	D68
GPS-Series	V	٧	٧			D69

GENERAL SELECTION GUIDE OF DC POWER SUPPLY BY TECHNIC

Technic	Channel	Programmability	Display	Model Series	Page	
	2, 3		LED	PSW-Multi Series	D9-12	
	1		LED	PSW-Series	D15-18	
	1		LED	PSU-Series	D19-24	
	1	Programable	LED	PFR-Series	D25-28	
	1	Programable	LED	PSB-2400L/PSB-2800L/PSB-2400H/PSB-2800H/PSB-2800LS	D29-32	
Switching	1		LCD	PSB-1000 Series	D33-34	
	1		LCD	PSH-Series	D35	
	1		LCD	PSP-Series	D36	
	1	Non-Programable	LED	SPS-Series	D37	
	2	Programable	LED	PSB-2400L2	D29-32	
	3	Non-Programable	LED	SPD-3606	D38	
	1		LCD	PPH-1503	D43-46	
	1		LCD	GSM-20H10	D39-42	
	1		LED	GPP-1326	D56-57	
	1	Programable	LCD	PPX-Series	D47-51	
	1		VFD	PSM-Series	D59	
	1		LCD	PSS-Series	D60	
	1		LED	GPR-H Series	D67	
	1	Non-Programable	LED	GPR-M Series	D68	
	1		LED	GPS-1830D/GPS-1850D/GPS-3030D/GPS-3030DD	D69	
	1		LED	GPE-1326	D64	
	2		LCD	PPH-1503D/PPH-1506D/PPH-1510D	D43-46	
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	2				GPP-2323	
Linear	3		LCD	GPP-3323	D56-57	
	4			GPP-4323	2	
	2	Programable		GPD-2303S		
	3	Trogramable	LED	GPD-3303S	D58	
	4			GPD-4303S		
	3		LED	PPE-3323	D64	
	3		LED	PPT-Series	D62	
	3		LED	PST-3201	563	
	3		LED	PST-3202	D63	
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	3 4		LED	GPE-3323	D64	
				GPE-4323)	
	2	Non-Programable		GPS-2303		
	3		LED	GPS-3303	D65	
	4			GPS-4303)	
	3		LED	GPC-Series	D66	

DC POWER SUPPLIES

GENERAL SELECTION GUIDE OF DC POWER SUPPLY BY CHANNEL

Channel	Programmability	Technic	Display	Model Series	Page
			LED	PSW-Series	D15-18
			LED	PSU-Series	D19-24
		Switching	LED	PFR-Series	D25-28
		Switching	LED	PSB-2400L/PSB-2800L/PSB-2400H/PSB-2800H/PSB-2800LS	D29-32
			LCD	PSB-1000 Series	D33-34
	Programable		LCD	PSH-Series	D35
			LCD	PSP-Series	D36
6. 1.61			LCD	PPH-1503	D43-46
Single Channel			LCD	GSM-20H10	D39-42
			LED	GPP-1326	D56-57
		Linear	LCD	PPX-Series	D47-51
			VFD	PSM-Series	D59
			LCD	PSS-Series	D60
	Non-Programable	Switching	LED	SPS-Series	D37
		Linear	LED	GPE-1326	D64
			LED	GPR-H Series	D67
			LED	GPR-M Series	D68
			LED	GPS-1830D/GPS-1850D/GPS-3030D/GPS-3030DD	D69
		Switching	LED	PSB-2400L2	D29-32
		Switching	LED	PSW-Multi Series	D9-12
			LCD	PPH-1503D/PPH-1506D/PPH-1510D	D43-46
			LCD	GPP-3060/GPP-6030	D52-55
			LCD	GPP-2323/GPP-3323/GPP-4323	D56-57
	Programable	Lincor	LED	GPD-Series	D58
		Linear	LED	PPE-3323	D61
Multiple Channel			LED	PPT-Series	D62
			LED	PST-3201	D63
			LED	PST-3202	D63
		Switching	LED	SPD-3606	D38
	Non Programation		LED	GPE-2323/GPE-3323/GPE-4323	D64
	Non-Programable	Linear	LED	GPS-x303 Series	D65
			LED	GPC-Series	D66

PROGRAMMABLE & SINGLE CHANNEL DC POWER SUPPLY

Voltage(V)	Current(A)	Total Power(W)	Model Name	Display	Technic	Interface	Page
6	200	1200	PSU 6-200	LED	Switching		1 45
		100000000000000000000000000000000000000					
8	180	1440	PSU 8-180	LED	Switching	RS-232, RS-485, USB, LAN, Analog Control, (Opt)GPIB	
15	100	1500	PSU 15-100	LED	Switching	RS-232, RS-485, USB, LAN, Analog Control, (Opt)GPIB	D19-24
30	50	1500	PSU 30-50	LED	Switching	RS-232, RS-485, USB, LAN, Analog Control, (Opt)GPIB	
50	30	1500	PSU 50-30	LED	Switching	RS-232, RS-485, USB, LAN, Analog Control, (Opt)GPIB	
80	19	1520	PSU 80-19	LED	Switching	RS-232, RS-485, USB, LAN, Analog Control, (Opt)GPIB	
8	20	200	PSM-2010	VFD	Linear	RS-232, (Opt)GPIB	D59
9	5	45	PPH-1503	LCD	Linear	USBCDC, LAN, GPIB	D43-46
10	5	50	PPX-1005	LCD	Linear	USBCDC, LAN, RS-232, RS-485, (Opt)GPIB	D47-51
12.5	120	1500	PSU 12.5-120	LED	Switching	RS-232, RS-485, USB, LAN, Analog Control, (Opt)GPIB	D19-24
15	3	45	PPH-1503	LCD	Linear	USBCDC, LAN, GPIB	D43-46
15	7	120	PSM-3004	VFD	Linear	RS-232, (Opt)GPIB	D59
20	1	20	GSM-20H10	LCD	Linear	RS-232, USBTMC, LAN, GPIB	D39-42
20	2	40	PPX-2002	LCD	Linear	USBCDC, LAN, RS-232, RS-485, (Opt)GPIB	547.53
20	5	100	PPX-2005	LCD	Linear	USBCDC, LAN, RS-232, RS-485, (Opt)GPIB	D47-51
20	5	100	PSS-2005	LCD	Linear	RS-232, (Opt)GPIB	D60
20	10	200	PSP-2010	LCD	Switching	RS-232	D36
20	10	200	PSM-2010	VFD	Linear	RS-232, (Opt)GPIB	D59
20	18	360	PSH-2018A	LCD	Switching	RS-232, (Opt)GPIB	D35
20	76	1520	PSU 20-76	LED	Switching	RS-232, RS-485, USB, LAN, Analog Control, (Opt)GPIB	D19-24
30	4	120	PSM-3004	VFD	Linear	RS-232, (Opt)GPIB	D1324
30		200					D59
	6		PSM-6003	VFD	Linear	RS-232, (Opt)GPIB	1
30	36	360	PSW 30-36	LED	Switching	LAN, USB, Analog Control, (Opt)GPIB, RS-232	
30	72	720	PSW 30-72	LED	Switching	LAN, USB, Analog Control, (Opt)GPIB, RS-232	D15-18
30	108	1080	PSW 30-108	LED	Switching	LAN, USB, Analog Control, (Opt)GPIB, RS-232	10 I
32	3	96	PSS-3203	LCD	Linear	RS-232, (Opt)GPIB	D60
32	6	192	GPP-1326	LCD	Linear	USBCDC, RS-232, (Opt)LAN, GPIB	D56-57
36	1	36	PPX-3601	LCD	Linear	USBCDC, LAN, RS-232, RS-485, (Opt)GPIB	D47-51
36	3	108	PPX-3603	LCD	Linear	USBCDC, LAN, RS-232, RS-485, (Opt)GPIB	
36	10	360	PSH-3610A	LCD	Switching	RS-232, (Opt)GPIB	
36	20	720	PSH-3620A	LCD	Switching	RS-232, (Opt)GPIB	D35
36	30	1080	PSH-3630A	LCD	Switching	RS-232, (Opt)GPIB	is a
40	27	360	PSW 40-27	LED	Switching	LAN, USB, Analog Control, (Opt)GPIB, RS-232	
40	54	720	PSW 40-54	LED	Switching	LAN, USB, Analog Control, (Opt)GPIB, RS-232	D15-18
40	81	1080	PSW 40-81	LED	Switching	LAN, USB, Analog Control, (Opt)GPIB, RS-232	
40	5	200	PSP-405	LCD	Switching	RS-232	D36
40	38	1520	PSU 40-38	LED	Switching	RS-232, RS-485, USB, LAN, Analog Control, (Opt)GPIB	D19-24
40	40	400	PSB-1400L	LCD	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB	100000000000000000000000000000000000000
40	80	800	PSB-1800L	LCD	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB	D33-34
50	10	100	PFR-100L	LED	Switching	RS-232, RS-485, USB, LAN, (Opt)GPIB	D25-28
60	3.3	200	PSM-6003	VFD	Linear	RS-232, (Opt)GPIB	D59
60	3.5	200	PSP-603	LCD	Switching	RS-232	D36
60	25	1500	PSU 60-25	LED			10000000000
					Switching	RS-232, RS-485, USBCDC, LAN, Analog Control, (Opt)GPIB	D19-24
80	13.5	360	PSW 80-13.5	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	D15-18
80	27	720	PSW 80-27	LED	Switching		Pac
80	40	400	PSB-2400L	LED	Switching	USBCDC, Analog Control, (Opt)GPIB, RS-232	D29-32
80	40.5	1080	PSW 80-40.5	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB	D15-18
80	80	800	PSB-2800L	LED	Switching	RS-232, USBCDC, Analog Control, (Opt)GPIB	D29-32
80	80	800	PSB-2800LS	LED	Switching	RS-232, USBCDC, Analog Control, (Opt)GPIB	
100	1	100	PPX-10H01	LCD	Linear	USBCDC, LAN, RS-232, RS-485, (Opt)GPIB	D47-51
100	15	1500	PSU 100-15	LED	Switching	RS-232, RS-485, USBCDC, LAN, Analog Control, (Opt)GPIB	D19-24
150	10	1500	PSU 150-10	LED	Switching	RS-232, RS-485, USBCDC, LAN, Analog Control, (Opt)GPIB	D13-24
	7.2	360	PSW 160-7.2	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	D15-18

Voltage(V)	Current(A)	Total Power(W)	Model Name	Display	Technic	Interface	Page
160	10	400	PSB-1400M	LCD	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	D33-34
160	14.4	720	PSW 160-14.4	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	D15-18
160	20	800	PSB-1800M	LCD	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB	D33-34
160	21.6	1080	PSW 160-21.6	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB	D15-18
200	0.1	20	GSM-20H10	LCD	Linear	RS-232, USBTMC, LAN, GPIB	D39-42
250	2	100	PFR-100M	LED	Switching	RS-232, RS-485, USBCDC, LAN,(Opt) GPIB, RS-232	D25-28
250	4.5	360	PSW 250-4.5	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	
250	9	720	PSW 250-9	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	D15-18
250	13.5	1080	PSW 250-13.5	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	
300	5	1500	PSU 300-5	LED	Switching	RS-232, RS-485, USBCDC, LAN, Analog Control, (Opt)GPIB	
400	3.8	1520	PSU 400-3.8	LED	Switching	RS-232, RS-485, USBCDC, LAN, Analog Control, (Opt)GPIB	D19-24
600	2.6	1560	PSU 600-2.6	LED	Switching	RS-232, RS-485, USBCDC, LAN, Analog Control, (Opt)GPIB	
800	1.44	360	PSW 800-1.44	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	D1F 10
800	2.88	720	PSW 800-2.88	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	D15-18
800	3	400	PSB-2400H	LED	Switching	RS-232, USBCDC, Analog Control, (Opt)GPIB	D29-32
800	4.32	1080	PSW 800-4.32	LED	Switching	LAN, USBCDC, Analog Control, (Opt)GPIB, RS-232	D15-18
800	6	800	PSB-2800H	LED	Switching	RS-232, USBCDC, Analog Control, (Opt)GPIB	D29-32

NON-PROGRAMMABLE & SINGLE CHANNEL DC POWER SUPPLY

Voltage(V)	Current(A)	Total Power(W)	Model Name	Display	Technic	Remark	Page	
8	30	240	GPR-0830HD	LED	Linear	Rear-Panel Output	D67	
12	30	360	SPS-1230	LED	Switching	Rear-Panel Output	D37	
18	3	54	GPS-1830D	LED	Linear	Rear-Panel Output	D69	
18	5	90	GPS-1850D	LED	Linear		D69	
18	10	180	GPR-1810HD	LED	Linear	Rear-Panel Output	D68	
18	20	360	SPS-1820	LED	Switching	Rear-Panel Output	D37	
18	20	360	GPR-1820HD	LED	Linear	Rear-Panel Output	D67	
24	15	360	SPS-2415	LED	Switching		D37	
30	3	90	GPS-3030D	LED	Linear	Rear-Panel Output	D69	
30	3	90	GPS-3030DD	LED	Linear		D69	
30	6	180	GPR-3060D	LED	Linear	Rear-Panel Output	D68	
32	6	192	GPE-1326	LED	Linear	Rear-Panel Output	D64	
35	10	350	GPR-3510HD	LED	Linear	Rear-Panel Output	D67	
36	10	360	SPS-3610	LED	Switching	Rear-Panel Output	D37	
60	3	180	GPR-6030D	LED	Linear	Rear-Panel Output	D68	
60	6	360	SPS-606	LED	Switching	Rear-Panel Output	D37	
60	6	360	GPR-6060D	LED	Linear	Rear-Panel Output		
75	5	375	GPR-7550D	LED	Linear	Rear-Panel Output	D/7	
110	3	330	GPR-11H30D	LED	Linear	Rear-Panel Output	D67	
300	1	300	GPR-30H10D	LED	Linear	Rear-Panel Output		

DC POWER SUPPLIES

PROGRAMMABLE & MULTIPLE CHANNEL DC POWER SUPPLY

Ve	oltage(V)	Current(A)	Power per CH	Total Power(W)	Model Name	Channel	Display	Technic	Interfere	Page
	15	3	45	lotal Fower(w)	Model Name	Channel	Display	lechnic	Interface	rage
CH1	9	5	45	63	PPH-1503D	2	LCD	Linear	USBTMC, LAN, GPIB	
CH2	12 15	1.5	18 45						S 0.2% (0)	
CH1	9	5	45	81	PPH-1506D	2	LCD	Linear	USBTMC, LAN, GPIB	D43-46
CH2	12 15	3	36 45	0.90		c (077)	1000001			5.5.0
CH1	9	5	45	01	DDH 1510D		LCD	Hanne	LIEDTING LAN COID	
	4.5	10	45	81	PPH-1510D	2	LCD	Linear	USBTMC, LAN, GPIB	
CH2 CH1	12 18	3	36 54							1
CH2	18	3	54	138	PPT-1830	3	LED	Linear	GPIB	D62
CH3	6 30	5 6	30 180						N S	1 1400000
CH2	30	6	180	385	GPP-3060	3	LCD	Linear	USBCDC, RS-232,	D52-55
CH3	1.8/2.5/3.3/5.0	5	25	503.5	200 TO 100 TO 10				(Opt)LAN, GPIB	
CH1 CH2	30 30	3	90 90	180	GPD-2303S	2	LED	Linear	USBCDC	
CH1	30	3	90							
CH2 CH3	30 2.5/3.3/5.0	3	90 15	195	GPD-3303S	3	LED	Linear	USBCDC	
CH1	30	3	90							D58
CH2 CH3	30 5	3	90 15	195	GPD-4303S	4	LED	Linear	USBCDC	D30
CH4	5	3	5							
CH1	30	3	90	305	CDD 33435				uenene	
CH2 CH3	30 2.5/3.3/5.0	3	90 15	195	GPD-3303D	3	LED	Linear	USBCDC	
CH1	32	3	96	192	GPP-2323	2	LCD	Linear	USBCDC, RS-232,	
CH2 CH1	32 32	3	96 96	1,72	G. 1. 2.32.3	-		Lincut	(Opt)LAN, GPIB	
CH1	32	3	96	217	GPP-3323	3	LCD	Linear	USBCDC, RS-232,	
CH3	1.8/2.5/3.3/5.0	5	25						(Opt)LAN, GPIB	D56-57
CH1 CH2	32 32	3	96 96		GDG 1533	232	99200		USBCDC, RS-232,	
CH3	5	1	5	212	GPP-4323	4	LCD	Linear	(Opt)LAN, GPIB	
CH4 CH1	15 32	3	15 96							
CH2	-32	3	96	207	PPE-3323	3	LED	Linear	RS-232	D61
CH3	3.3 / 5	3	15							501
CH1 CH2	36 36	1.5 1.5	54 54	126	PPT-3615	3	LED	Linear	GPIB	D62
CH3	6	3	18							D02
CH1	32 32	2	64 64	158	PST-3202	3	LED	Linear	RS-232(O), GPIB	
CH3	6	5	30	150	1013202			Emour	no estion or io	5.00
CH1	32 32	1	32 32	96	PST-3201	3	LED	Linear	RS-232(O), GPIB	D63
CH2	32	i	32	96	P31-3201	,	LED	Linear	K3-232(O), GPIB	
CH1	60	3	180	205	CDD CO20		1.60		USBCDC, RS-232,	
CH2 CH3	60 1.8/2.5/3.3/5.0	3 5	180 25	385	GPP-6030	3	LCD	Linear	(Opt)LAN, GPIB	D52-55
CH1	80	40	400	800	PSB-2400L2	2	LED	Switching	RS-232, USB, Analog	D29-32
CH2 CH1	80 30	40 36	400 360	10.70.20	200700000000000000000000000000000000000	3 100000	10.0000		Control, LAN, USB, Analog Control,	025-32
CH2	30	36	360	720	PSW-720L11	2	LED	Switching	(Opt)GPIB, RS-232	
CH1	30 40	36 27	360 360	720	PSW-720L12	2	LED	Switching	LAN, USB, Analog Control,	
CH1	30	36	360	720	PSW-720L14	2	LED	Switching	(Opt)GPIB, RS-232 LAN, USB, Analog Control,	
CH2	80	13.5	360	720	P3W-720L14	-	LED	Switching	(Opt)GPIB, RS-232	
CH1 CH2	30 160	36 7.2	360 360	720	PSW-720L15	2	LED	Switching	LAN, USB, Analog Control, (Opt)GPIB, RS-232	
CH1	40	27	360	720	PSW-720L22	2	LED	Switching	LAN, USB, Analog Control,	
CH2 CH1	40 40	27 27	360 360	30720-30		3 (2.5)	10075257		(Opt)GPIB, RS-232 LAN, USB, Analog Control,	
CH2	80	13.5	360	720	PSW-720L24	2	LED	Switching	(Opt)GPIB, RS-232	P0
CH1 CH2	40 160	7.2	360 360	720	PSW-720L25	2	LED	Switching	LAN, USB, Analog Control,	D9
CH2	80	13.5	360	720	DSW 7201 44	2	150	Cuitable	(Opt)GPIB, RS-232 LAN, USB, Analog Control,	
CH2	80	13.5	360	720	PSW-720L44	2	LED	Switching	(Opt)GPIB, RS-232	
CH1 CH2	80 160	13.5 7.2	360 360	720	PSW-720L45	2	LED	Switching	LAN, USB, Analog Control, (Opt)GPIB, RS-232	
CH1	160	7.2	360	720	PSW-720L55	2	LED	Switching	LAN, USB, Analog Control,	
CH2 CH1	160 250	7.2 4.5	360 360	50720		3 05500	0/02/99/9		(Opt)GPIB, RS-232 LAN, USB, Analog Control,	
CH2	250	4.5	360	720	PSW-720H66	2	LED	Switching	(Opt)GPIB, RS-232	
CH1	250	4.5	360	720	PSW-720H68	2	LED	Switching	LAN, USB, Analog Control,	
CH2 CH1	800 800	1.44	360 360	700	DCW 7201100	2	155		(Opt)GPIB, RS-232 LAN, USB, Analog Control,	
CH2	800	1.44	360	720	PSW-720H88	2	LED	Switching	(Opt)GPIB, RS-232	
CH1	30 30	36 36	360 360	1080	PSW-1080L111	3	LED	Switching	LAN, USB, Analog Control,	
CH3	30	36	360					- Indiana	(Opt)GPIB, RS-232	
CH1	30 30	36 36	360 360	1080	PSW-1080L112	3	LED	Switching	LAN, USB, Analog Control,	
CH2 CH3	40	27	360	1000	F3W-1000L11Z	,	LED	Switching	(Opt)GPIB, RS-232	
CH1	30	36	360	1000	DCW 3000133		150	Sudad:	LAN, USB, Analog Control,	D9
CH2 CH3	30 80	36 13.5	360 360	1080	PSW-1080L114	3	LED	Switching	(Opt)GPIB, RS-232	55
CH1	30	36	360	2020-20		None	910000		LAN, USB, Analog Control,	
CH2 CH3	30 160	36 7.2	360 360	1080	PSW-1080L115	3	LED	Switching	(Opt)GPIB, RS-232	
CH1	30	36	360	Sicrema (55,000 (0.50 heavens der einstere	3 4570	State Per		LAN, USB, Analog Control,	
CH2	40	27	360	1080	PSW-1080L122	3	LED	Switching	(Opt)GPIB, RS-232	
CH3	40	27	360							

DC POWER SUPPLIES

V	oltage(V)	Current(A)	Power per. CH	Total Power(W)	Model Name	Channel	Display	Technic	Interface	Page
CH1	30	36	360						LANGUED A LOCALITY	
CH2	40	27	360	1080	PSW-1080L124	3	LED	Switching	LAN, USB, Analog Control,	
CH3	80	13.5	360	S 250000		S 52	3884-3	100000000000000000000000000000000000000	(Opt)GPIB, RS-232	
CH1	30	36	360	9		9 9	3		LAN, USB, Analog Control,	1
CH2	40	27	360	1080	PSW-1080L125	3	LED	Switching	(Opt)GPIB, RS-232	
CH3	160	7.2	360						(Opt)GPIB, R3-232]
CH1	30	36	360	0.003885	608007800080000000	199	93000	150000000000	LAN, USB, Analog Control,	1
CH2	80	13.5	360	1080	PSW-1080L144	3	LED	Switching	(Opt)GPIB, RS-232	l .
CH3	80	13.5	360	l					(Оріјань, ка-232]
CH1	30	36	360						LAN, USB, Analog Control,	l
CH2	80	13.5	360	1080	PSW-1080L145	3	LED	Switching	(Opt)GPIB, RS-232	
CH3	160	7.2	360						(opijorio, no zaz	1
CH1	30	36	360						LAN, USB, Analog Control,	l .
CH2	160	7.2	360	1080	PSW-1080L155	3	LED	Switching	(Opt)GPIB, RS-232	
CH3	160	7.2	360						(1
CH1	40	27	360	2000	DCIV. 10001 222		150	C. A. Line	LAN, USB, Analog Control,	l .
CH2	40	27	360	1080	PSW-1080L222	3	LED	Switching	(Opt)GPIB, RS-232	I
CH3	40	27	360						And the confidence of	1
CH1	40	27	360	7000	DCW/ 1000/ 224	,	LED	Cuitabina	LAN, USB, Analog Control,	l .
CH2	40 80	27 13.5	360 360	1080	PSW-1080L224	3	LED	Switching	(Opt)GPIB, RS-232	
CH3 CH1	40	27	360							1
CH2	40	27	360	1080	PSW-1080L225	3	LED	Switching	LAN, USB, Analog Control,	
CH2	160	7.2	360	1000	F3W-1000L223	,	LED	Switching	(Opt)GPIB, RS-232	
CH1	40	27	360							1
CH2	80	13.5	360	1080	PSW-1080L244	3	LED	Switching	LAN, USB, Analog Control,	l .
CH3	80	13.5	360	1000	13W-1000EETT	. f	LLD	Switching	(Opt)GPIB, RS-232	
CH1	40	27	360		 		_			1
CH2	80	13.5	360	1080	TURE PSW-TURE /45 4 TED SWITCHING	PSW-1080L245 3 LED	LED	Switching	LAN, USB, Analog Control,	
CH3	160	7.2	360	1000			3.00		(Opt)GPIB, RS-232	D9
CH1	40	27	360	9399333	13 to 10 p.		3.777000	100000000000000000000000000000000000000		, , , , , , , , , , , , , , , , , , ,
CH2	160	7.2	360	1080	PSW-1080L255	3	LED	Switching	LAN, USB, Analog Control,	l .
CH3	160	7.2	360	1					(Opt)GPIB, RS-232	l .
CH1	80	13.5	360						LANLUED Andre Control	1
CH2	80	13.5	360	1080	PSW-1080L444	3	LED	Switching	LAN, USB, Analog Control,	l .
CH3	80	13.5	360	1				1073	(Opt)GPIB, RS-232	
CH1	80	13.5	360						LAN, USB, Analog Control,	1
CH2	80	13.5	360	1080	PSW-1080L445	3	LED	Switching		l .
CH3	160	7.2	360	300000000000000000000000000000000000000	-0.000 081100 -0.000 000 000 000 000 000 000 000 00	204	750756W		(Opt)GPIB, RS-232	l
CH1	80	13.5	360	29700350	27270 885 and 1806 2 13 vitt	60	105075035		LAN, USB, Analog Control,	1
CH2	160	7.2	360	1080	PSW-1080L455	3	LED	Switching	(Opt)GPIB, RS-232	I
CH3	160	7.2	360						(Opt)OF18, N3-232	J
CH1	160	7.2	360	03828		10	18,277.50		LAN, USB, Analog Control,	1
CH2	160	7.2	360	1080	PSW-1080L555	3	LED	Switching	(Opt)GPIB, RS-232	
CH3	160	7.2	360					1.00	(abillatio) wassa	1
CH1	250	4.5	360	****	DOWN 200011555			# n 11	LAN, USB, Analog Control,	
CH2	250	4.5	360	1080	PSW-1080H666	3	LED	Switching	(Opt)GPIB, RS-232	I
CH3	250	4.5	360						111111111111111111111111111111111111111	1
CH1	250	4.5	360	1000	DEW JORGILICA		LED	Control in a	LAN, USB, Analog Control,	I
CH2	250	4.5	360	1080	PSW-1080H668	3	LED	Switching	(Opt)GPIB, RS-232	I
CH3	800	1.44	360							1
CH1 CH2	250 800	4.5 1.44	360 360	1080	PSW-1080H688	3	LED	Switching	LAN, USB, Analog Control,	
CH2 CH3	800	1.44	360	1000	P3 W-100011000	,	LED	Switching	(Opt)GPIB, RS-232	
CH3	800	1.44	360							1
CH2	800	1.44	360	1080	PSW-1080H888	3	LED	Switching	LAN, USB, Analog Control,	I
CH3	800	1.44	360	1000	1311-1000/1000			Januaring	(Opt)GPIB, RS-232	I
-113	000	1.44	300							

NON-PROGRAMMABLE & MULTIPLE CHANNEL DC POWER SUPPLY

	Voltage(V)	Current(A)	Power per. CH	Total Power(W)	Model Name	Channel	Display	Technic	Page
CH1	30	6	180	16004	700 N 70 T 2 S 10	70.4	20,500,2		
CH2	30	6	180	375	SPD-3606	3	LED	Switching	D38
CH3	5	3	15						2707ATA
CH1	32	3	96	192	GPE-2323	2	LED	Linear	
CH2	32	3	96	172	GrE-EJEJ	*	LLD	Ellical	
CH1	32	3	96						1
CH2	32	3	96	217	GPE-3323	3	LED	Linear	DC4
CH3	1.8/2.5/3.3/5.0	5	25		F 1755 1		3		D64
CH1	32	3	96					Linear	
CH2	32	3	96	212	GPE-4323	4	LED		
CH3	5	1	5	2.12		7			
CH4	15	1	15						10
CH1	30	3	90	180	GPS-2303	2	LED	Linear	D. (1)
CH2	30	3	90	100	GP3-2303		LED	Linear	
CH1	30	3	90		GPS-3303	3		Linear	
CH2	30	3	90	195			LED		
CH3	5	3	15	M-2-015					D65
CH1	30	3	90						1
CH2	30	3	90	200	GPS-4303	4	LED	Linear	
CH3	2.2 ~ 5.2	1	5.2	200	GF3-4303	· 7	LED	Linear	
CH4	8 ~ 15	1	15		3		3		92
CH1	30	6	180	1903/9	S. Conservation to provide	97, 50	3 2000000		9
CH2	30	6	180	375	GPC-3060D	3	LED	Linear	
CH3	5	3	15						D66
CH1	60	3	180						200
CH2	60	3	180	375	GPC-6030D	3	LED	Linear	
CH3	5	3	15						XI

Dual-channel/Triple-channel Programmable Switching D.C. Power Supply



PSW-Multi Series





Analog Control LAN

FEATURES

- * Multi-channel: Maximum 720W for Dualchannel Module and Maximum 1080W for Triple-channel Models; The PSW-Multi Series Aslo Features a New Built-in Function That Allows Individualor Synchronizd Output Control of Eachvoltage Module Output Latency Between Channels with the Same Voltage Module is Less Than 0.1ms
- * Multiple Voltage Combinations: Low Voltage Combinations Can be Selected From 30V/ 40V/80V/160V; High Voltage Combinations Can be Selected From 250V/800V
- * Advanced Web Server: Executes SCPI Commands; Web Controls Through Server; Data Log; Edit Sequence
- * CC/CV Priority Mode Selection is Ideal for Battery and LED Industries
- * Adjustable Rising and Falling Slew Rate
- * 720W/1080W Adopt 1/3, 1/2 Rack Mount Frame Designs (Standard EIA/JIS)
- * Standard Communications Interfaces: LAN, USB, External Analog Remote Control Terminal
- * Optional Communications Interfaces: GPIB-USB Adapter, RS232-USB Cable
- * Support LabVIEW Driver

PSW-Multi Series is a dual-channel or triple-channel wide range output programmable switching DC power supply. The maximum output power can reach 1080W. There are 13 dual-channel models with a rated power of 720W, and 24 triple-channel models with a rated power of 1080W. The rated voltages of low voltage modules are 30V, 40V, 80V, 160V. The rated voltages of high voltage modules are 250V and 800V.

The CV/CC priority selection of the PSW-Multi Series is a very useful feature for DUT protection. The conventional power supply normally operates under CV mode when the power output is turned on. This could bring a high inrush current to the capacitive load or current-intensive load at the power output-on stage. Taking the I-V curve verification of LED as an example, it becomes a very challenging task to perform this measurement using a conventional power supply.

With LED connected to a power supply under CV mode as the initial setting, when the power output is turned on and the voltage rises to the LED forward voltage, the current will suddenly peak up and exceed the preset value of current limit. Upon detecting this high current, the power supply starts the transition from CV mode to CC mode. Though the current becomes stable after the CC mode being activated, the current spike occurred at the CV and CC crossover point may possibly damage the DUT. At the power output-on stage, the PSW-Multi Series is able to operate under CC priority to limit the current spike occurred at the threshold voltage and therefore protects DUT from the inrush current damage.

The adjustable slew rate of the PSW-Multi Series allows users to set for either output voltage or output current, a specific rise time from low to high level transition, and a specific fall time from high to low level transition. This facilitates the characteristic verification of a DUT during voltage or current level changes with controllable slew rates. Most manufacturing tests of lighting device or large capacitor during power output-on are associated with the occurrence of high surge current, which can greatly reduce the life time of the DUT. To prevent inrush current from damaging current-intensive devices, a smooth and slow voltage transition during power On-Off can significantly reduce the pike current and protect the device from high current damage.

The OVP and OCP are provided with the PSW-Multi Series. Both OVP and OCP levels can be selected, with default level set at 110%, of the rated voltage/current of the power supply. When any of the protection levels is tripped, the power output will be switched off to protect the DUT. The PSW-Multi Series provides USB Host/Device and LAN interfaces as standard, GPIB-USB adapter and RS232-USB cable as optional. The LabVIEW driver and the Data Logging PC software are supported on all the available interfaces. An analog control/monitoring connector is also available on the rear panel for external control of power On/Off and external monitoring of power output Voltage and Current.

DUAL-CHANNEL MODELS ARE AS FOLLOWS

MODEL	CH1	CH2	SIZE
PSW-720L11	30.00V	30.00V	1/3 Rack 3U
PSW-720L12	30.00V	40.00V	1/3 Rack 3U
PSW-720L14	30.00V	80.00V	1/3 Rack 3U
PSW-720L15	30.00V	160.0V	1/3 Rack 3U
PSW-720L22	40.00V	40.00V	1/3 Rack 3U
PSW-720L24	40.00V	80.00V	1/3 Rack 3U
PSW-720L25	40.00V	160.0V	1/3 Rack 3U
PSW-720L44	80.00V	80.00V	1/3 Rack 3U
PSW-720L45	80.00V	160.0V	1/3 Rack 3U
PSW-720L55	160.0V	160.0V	1/3 Rack 3U
PSW-720H66	250.0V	250.0V	1/3 Rack 3U
PSW-720H68	250.0V	800.0V	1/3 Rack 3U
PSW-720H88	800.0V	800.0V	1/3 Rack 3U

TRIPLE-CHANNEL MODELS ARE AS FOLLOWS

MODEL	CH1	CH2	CH3	SIZE
PSW-1080L111	30.00V	30.00V	30.00V	1/2 Rack 3U
	30.00V			,
PSW-1080L112		30.00V	40.00V	1/2 Rack 3U
PSW-1080L114	30.00V	30.00V	80.00V	1/2 Rack 3U
PSW-1080L115	30.00V	30.00V	160.0V	1/2 Rack 3U
PSW-1080L122	30.00V	40.00V	40.00V	1/2 Rack 3U
PSW-1080L124	30.00V	40.00V	80.00V	1/2 Rack 3U
PSW-1080L125	30.00V	40.00V	160.0V	1/2 Rack 3U
PSW-1080L144	30.00V	80.00V	80.00V	1/2 Rack 3U
PSW-1080L145	30.00V	80.00V	160.0V	1/2 Rack 3U
PSW-1080L155	30.00V	160.0V	160.0V	1/2 Rack 3U
PSW-1080L222	40.00V	40.00V	40.00V	1/2 Rack 3U
PSW-1080L224	40.00V	40.00V	80.00V	1/2 Rack 3U
PSW-1080L225	40.00V	40.00V	160.0V	1/2 Rack 3U
PSW-1080L244	40.00V	80.00V	80.00V	1/2 Rack 3U
PSW-1080L245	40.00V	80.00V	160.0V	1/2 Rack 3U
PSW-1080L255	40.00V	160.0V	160.0V	1/2 Rack 3U
PSW-1080L444	80.00V	80.00V	80.0V	1/2 Rack 3U
PSW-1080L445	80.00V	80.00V	160.0V	1/2 Rack 3U
PSW-1080L455	80.00V	160.0V	160.0V	1/2 Rack 3U
PSW-1080L555	160.0V	160.0V	160.0V	1/2 Rack 3U
PSW-1080H666	250.0V	250.0V	250.0V	1/2 Rack 3U
PSW-1080H668	250.0V	250.0V	800.0V	1/2 Rack 3U
PSW-1080H688	250.0V	800.0V	800.0V	1/2 Rack 3U
PSW-1080H888	800.0V	800.0V	800.0V	1/2 Rack 3U

GRA-410-J/E Rack Mount Kit (JIS/EIA)

For : PSW-Series





Notes:

- *1: At 85 ~ 132Vac or 170 ~ 265Vac, constant load.
- *2: From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
- *3: Measure with JEITA RC-9131B (1:1) probe
- *4: Measurement frequency bandwidth is 10Hz to 20MHz.
- *5: Measurement frequency bandwidth is 5Hz to 1MHz.
- *6: From 10% to 90% of rated output voltage, with rated resistive load.
- *7: From 90% to 10% of rated output voltage, with rated resistive load.
- *8: Time for output voltage to recover within 0.1% + 10mV of its rated output for a load change from 50 to 100% of its rated output current.
- *9: For load voltage change, equal to the unit voltage rating, constant input voltage.

CONCURRENTIANIC								
SPECIFICATIONS				2		-		8
Module Type H/L Voltage Classic Cation		_		2 L	4	5	6 H	H
Rated output voltage		v	30	40	80	160	250	800
Rated output current		A	36	27	13.5	7.2	4.5	1.44
Rated output power		W	360	360	360	360	360	360
Power ratio		-	3	3	3	3.2	3.125	3.2
Constant Voltage Mode			30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
Line regulation (*1)		mV	18	23	43	83	128	403
Load regulation (°2)		mV	20	25	45	85	130	405
Ripple and noise (*3)	p-p (*4)	mV	60	60	60	60	80	150
T	r.m.s. (45)	mV.	7	7	7	12	15	30
Temperature coefficient Remote snese compensation voltage (single wire)		ppm/C V	0.6	output voltage, after a 30 0.6	0.6	0.6	1	,
Rise time (°6)	Rated load	ms	50	50	50	100	100	150
Kise time (-0)	No load	ms	50	50	50	100	100	150
Fall time (°7)	Rated load	ms	50	50	50	100	150	300
	No load	ms	500	500	500	1000	1200	2000
Transient response time (°8)		ms	1	1	1	2	2	2
Constant Current Mode		8	30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
Line regulation (*1)		mA	41	32	18.5	12.2	9.5	6.44
Load regulation (°9)		mA	41	32	18.5	12.2	9.5	6.44
Ripple and noise	r.m.s.	mA	72	54	27	15	10	5
Temperature coefficient		ppm/C		output current, after a 30				
Protection Function	F-W-		30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
Over voltage protection (OVP)	Setting range	V	3-33	4-44	8-88	16-176	20-275	20-880
Disse support analysis in the se	Setting accuracy		± (2% of rated output		1373460	0.22.2.02	0.45 / 05	0.144.7.66
Over current protection (OCP)	Setting range	А	3.6-39.6 a (2% of rated output	2.7-29.7	1.35-14.85	0.72-7.92	0.45-4.95	0.144-1.584
Over temperature protection (OTP)	Setting accuracy Operation	<u> </u>	Turn the output off					
Low AC input protection (AC-FAIL)	Operation		Turn the output off					
Power limit (POWER LIMIT)	Operation	9	Over power limit.					
	Value (fixed)		Approx. 105% of rate	ed output power				
Analog Programming and Monitoring	2 2	<u> </u>	30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
External voltage control output voltage	at 23 °C ± 5 °C			y: ±0.5% of rated output				
External voltage control output current	at 23 °C ± 5 °C	9		ty: ±1% of rated output o				
External resistor control output voltage	at 23 °C ± 5 °C	6		y: ±1.5% of rated output				
External resistor control output current	at 23 °C ± 5 °C			y: ±1.5% of rated output	current.			
Output voltage monitor	at 23 °C ± 5 °C		Accuracy: ±1%	0.000			Accuracy: ±2%	
Output current monitor	at 23 °C ± 5 °C		Accuracy: ±1%		and a stance		Accuracy: ±2%	
Shutdown control				with a LOW (0V to 0.5V)		A or short-rirruit turn	the output off using a H	IGH (4.5V to 5V) or
Output on/off control							off using a LOW (0V to 0	
CV/CC/ALM/PWR ON/OUT ON indicator			Photocoupler open o	ollector output; Maximu	m voltage 30V, maximur	n sink current 8mA.		
Front Panel			30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
Display, 4 digits Voltage accuracy	at 23 °C ± 5 °C; ± (0.1% +	mV	20	20	20	100	200	400
Current accuracy	at 23 °C ± 5 °C; ± (0.1% +	mA	40	30	20	5	5	2
Indications				C, VSR, ISR, DLY, RMT,	20, 40, 60, 80, 100, %W,	W, V, A		
Puttons		6	RED LED's: ALM	Set Took Look/Local D	tueto IG2O GW			
Buttons Knobs				, Set, Test, Lock/Local, P	WK DSPL, Output			
USB port			Voltage, Current Type A USB connects	OF.				
Programming and Measurement (USB, LAN, GPIB)		8	30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
Output voltage programming accuracy	at 23 °C ± 5 °C; ± (0.1% +	mV.	10	10	10	100	200	400
Output current programming accuracy	at 23 °C ± 5 °C; ± (0.1% +	mA	30	20	10	5	5	2
Output voltage programming resolution		mV	1	1	2	3	5	14
Output current programming resolution		mA	1	1	1	1	1	1
Output voltage measurement accuracy	at 23 °C ± 5 °C; ± (0.1% +	mV	10	10	10	100	200	400
Output current measurement accuracy	at 23 °C ± 5 °C; ± (0.1% +	mA.	30	20	10	5	5	2
Output voltage measurement resolution		mV.	1	1	2	3	5	14
Output current measurement resolution		mA	1	1	1	1	1	1
Input Characteristics	8.000	St. State 1	30-36	40-27	80-13.5	160-7.2	250-4.5	800-1.44
Efficiency	100Vac	%	77 79	78	78	79	79	
Input Characteristics	200Vac	96	70		4.6			80
Input Characteristics		W 100 100 100 100 100 100 100 100 100 10	/7	80 Dual Channel	80	81	81	80 82
Norminal input rating				Dual Channel				
Norminal input rating Input voltage range							81	
Input voltage range			100Vac to 240Vac, 50	Dual Channel			81	
	100Vac	A	100Vac to 240Vac, 50 85Vac ~ 265Vac	Dual Channel			81	
Input voltage range Input frequency range Maximum input current	100Vac 200Vac	A A	100Vac to 240Vac, 50 85Vac ~ 265Vac	Dual Channel OHz to 60Hz, single phase 10 5			Triple Channel	
Input voltage range Input frequency range Maximum input current Inrush current		Α	100Vac to 240Vac, 50 85Vac ~ 265Vac	Dual Channel OHz to 60Hz, single pha			15 7.5 Less than 75A	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power	200Vac		100Vac to 240Vac, 56 85Vac ~ 265Vac 47Hz - 63Hz	Dual Channel OHz to 60Hz, single phase 10 5			Triple Channel	
Input voltage range Input frequency range Maximum input current Inrush current	200Vac 100Vac	Α	100Vac to 240Vac, 50 85Vac ~ 265Vac 47Hz - 63Hz	Dual Channel OHz to 60Hz, single pha			15 7.5 Less than 75A	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor	200Vac	Α	100Vac to 240Vac, 50 85Vac ~ 265Vac 47Hz - 63Hz 0.99	Dual Channel OHz to 60Hz, single pha			15 7.5 Less than 75A	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time	200Vac 100Vac	Α	100Vac to 240Vac, 50 85Vac ~ 265Vac 47Hz - 63Hz	Dual Channel OHz to 60Hz, single pha			15 7.5 Less than 75A	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor	200Vac 100Vac	Α	100Vac to 240Vac, 50 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater	Dual Channel OHz to 60Hz, single phase 10 5 Less than 50A 1000 Dual Channel		81	15 7.5 Less than 75A 1500	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities	200Vac 100Vac	Α	100Vac to 240Vac, 50 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB:	Dual Channel OHz to 60Hz, single phase 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U	se	81 sications Device Class	15 7.5 Less than 75A 1500	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB	200Vac 100Vac	Α	100Vac to 240Vac, 50 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS	Dual Channel OHz to 60Hz, single phase 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U	se SB Class: CDC(Commun	81 sications Device Class	15 7.5 Less than 75A 1500	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB LAN	200Vac 100Vac	Α	100Vac to 240Vac, 50 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS Optional: GUG-001	Dual Channel OHz to 60Hz, single phase 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U	se SB Class: CDC(Commun	81 sications Device Class	15 7.5 Less than 75A 1500	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB LAN GPIB Environmental Conditions Operaing temperature	200Vac 100Vac	Α	100Vac to 240Vac, 50 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS Optional: GUG-001	Dual Channel OHz to 60Hz, single phase 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U IP Address, User Passwo (GPIB to USB Adapter)	se SB Class: CDC(Commun	81 sications Device Class	15 7.5 Less than 75A 1500 Triple Channel	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB LAN GPIB Environmental Conditions Operaing temperature Storage temperature	200Vac 100Vac	Α	100Vac to 240Vac, 56 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS Optional: GUG-001 (Dual Channel OHz to 60Hz, single phase 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U IP Address, User Passwo (GPIB to USB Adapter) Dual Channel	se SB Class: CDC(Commun	81 sications Device Class	15 7.5 Less than 75A 1500 Triple Channel	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB LAN GPIB Environmental Conditions Operaing temperature Storage temperature Operating humidity	200Vac 100Vac	Α	100Vac to 240Vac, 56 85Vac ~ 265Vac 47Hz ~ 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS Optional: GUG-001 (0°C to 50°C -25°C to 70°C 20% to 85% RH; No	Dual Channel OHz to 60Hz, single phase 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U IP Address, User Passwo (GPIB to USB Adapter) Dual Channel condensation	se SB Class: CDC(Commun	81 sications Device Class	15 7.5 Less than 75A 1500 Triple Channel	
Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB LAN GPIB Environmental Conditions Operaing temperature Storage temperature Operating humidity Storage humidity	200Vac 100Vac	Α	100Vac to 240Vac, 56 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS Optional: GUG-001 0°C to 50°C -25°C to 70°C 20% to 85% RH; No 90% RH or less; No	Dual Channel OHz to 60Hz, single phase 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U IP Address, User Passwo (GPIB to USB Adapter) Dual Channel condensation	se SB Class: CDC(Commun	81 sications Device Class	15 7.5 Less than 75A 1500 Triple Channel	
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Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB LAN GPIB Environmental Conditions Operaing temperature Storage temperature Operating humidity Storage humidity Altitude	100Vac 200Vac	A VA	100Vac to 240Vac, 56 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS Optional: GUG-001 0°C to 50°C -25°C to 70°C 20% to 85% RH; No 90% RH or less; No	Dual Channel 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U IP Address, User Passwo (GPIB to USB Adapter) Dual Channel condensation condensation Dual Channel Approx. 5.4kg	se SB Class: CDC(Commun	81 sications Device Class	15 7.5 Less than 75A 1500 Triple Channel	
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Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB LAN GPIB Environmental Conditions Operaing temperature Storage temperature Storage temperature Operating humidity Storage humidity Altitude General Specifications Weight Dimensions Cooling EMC Safety	200Vac 100Vac 200Vac main unit only (W×H×D) Between input and chassis Between output and chassis Between input and chassis	A VA	100Vac to 240Vac, 56 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS Optional: GUG-001 i 0°C to 50°C -25°C to 70°C 20% to 85% RH; No 90% RH or less; No Maximum 2000m Forced air cooling by Complies with the Ec No abnormalities at	Dual Channel 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U IP Address, User Passwo (GPIB to USB Adapter) Dual Channel condensation condensation Dual Channel Approx. 5.4kg 142 x 124 x 350 Internal fan uropean EMC directive fouropean Low Voltage Dir 1500 Vac for 1 minute 3000 Vac for 1 minute for more	SB Class: CDC(Commun ord, Gateway IP Address, or Class A test and measurective and carries the CE	ications Device Class Instrument IP Addres urement products marking	15 7.5 Less than 75A 1500 Triple Channel ss, Subnet Mask Triple Channel Approx. 7.7kg	
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Input voltage range Input frequency range Maximum input current Inrush current Maximum input power Power factor Hold-up time Interface Capabilities USB LAN GPIB Environmental Conditions Operaing temperature Storage temperature Operating humidity Storage humidity Altitude General Specifications Weight Dimensions Cooling EMC Safety Withstand voltage	200Vac 100Vac 200Vac main unit only (W×H×D) Between input and chassis Between output and chassis Between input and chassis	A VA	100Vac to 240Vac, 56 85Vac ~ 265Vac 47Hz - 63Hz 0.99 0.97 20ms or greater TypeA: Host, TypeB: MAC Address, DNS Optional: GUG-001 i 0°C to 50°C -25°C to 70°C 20% to 85% RH; No 90% RH or less; No Maximum 2000m Forced air cooling by Complies with the Ei No abnormalities at S00 Vdc, 100 MΩ or 500 Vdc, 100 MΩ or	Dual Channel 10 5 Less than 50A 1000 Dual Channel Slave, Speed: 1.1/2.0, U IP Address, User Passwo (GPIB to USB Adapter) Dual Channel condensation condensation Dual Channel Approx. 5.4kg 142 x 124 x 350 Internal fan uropean EMC directive for a 1500 Vac for 1 minute for 1500 Vdc for 1 minute for more more	SB Class: CDC(Commun ord, Gateway IP Address, or Class A test and measurective and carries the CE or 30V, 40V, 80V, 160V models	ications Device Class Instrument IP Addres urement products marking	15 7.5 Less than 75A 1500 Triple Channel ss, Subnet Mask Triple Channel Approx. 7.7kg	

Dual-channel/Triple-channel Programmable Switching D.C. Power Supply



PSW-Multi Series (Three-channel)



PSW-Multi Series (Two-channel)



PSW-Multi Series (LV) Three-channel Models Rear Panel



PSW-Multi Series (HV) Three-channel Models Rear Panel



PSW-Multi Series (LV) Two-channel Models Rear Panel



PSW-Multi Series (HV) Two-channel Models Rear Panel

ORDERING INFORMATION

Dual Channel Model

PSW-720L11	30V/36A*2 720W Multi-Range D.C. Power Supply
PSW-720L12	30V/36A*1 40V/27A*1 720W Multi-Range D.C. Power Supply
PSW-720L14	30V/36A*1 80V/13.5A*1 720W Multi-Range D.C. Power Supply
PSW-720L15	30V/36A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply
PSW-720L22	40V/27A*2 720W Multi-Range D.C. Power Supply
PSW-720L24	40V/27A*1 80V/13.5A*1 720W Multi-Range D.C. Power Supply
PSW-720L25	40V/27A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply
PSW-720L44	80V/13.5A*2 720W Multi-Range D.C. Power Supply
PSW-720L45	80V/13.5A*1 160V/7.2A*1 720W Multi-Range D.C. Power Supply
PSW-720L55	160V/7.2A*2 720W Multi-Range D.C. Power Supply
PSW-720H66	250V/4.5A*2 720W Multi-Range D.C. Power Supply
PSW-720H68	250V/4.5A*1 800V/1.44A*1 720W Multi-Range D.C. Power Suppl
PSW-720H88	800V/1.44A*2 720W Multi-Range D.C. Power Supply

Triple Channel	Model
PSW-1080L111	30V/36A*3 1080W Multi-Range D.C. Power Supply
PSW-1080L112	30V/36A*2 40V/27A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L114	30V/36A*2 80V/13.5A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L115	30V/36A*2 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L122	30V/36A*1 40V/27A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L124	30V/36A*1 40V/27A*1 80V/13.5A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L125	30V/36A*1 40V/27A*1 160V/7.2A 1080W Multi-Range D.C. Power Supply
PSW-1080L144	30V/36A*1 80V/13.5A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L145	30V/36A*1 80V/13.5A*1 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L155	30V/36A*1 160V/7.2A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L222	40V/27A*3 1080W Multi-Range D.C. Power Supply
PSW-1080L224	40V/27A*2 80V/13.5A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L225	40V/27A*2 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L244	40V/27A*1 80V/13.5A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L245	40V/27A*1 80V/13.5A*1 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L255	40V/27A*1 160V/7.2A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L444	80V/13.5A*3 1080W Multi-Range D.C. Power Supply
PSW-1080L445	80V/13.5A*2 160V/7.2A*1 1080W Multi-Range D.C. Power Supply
PSW-1080L455	80V/13.5A*1 160V/7.2A*2 1080W Multi-Range D.C. Power Supply
PSW-1080L555	160V/7.2A*3 1080W Multi-Range D.C. Power Supply
PSW-1080H666	250V/4.5A*3 1080W Multi-Range D.C. Power Supply
PSW-1080H668	250V/4.5A*2 800V/1.44A*1 1080W Multi-Range D.C. Power Supply
PSW-1080H688	250V/4.5A*1 800V/1.44A*2 1080W Multi-Range D.C. Power Supply
PSW-1080H888	800V/1.44A*3 1080W Multi-Range D.C. Power Supply
Acces Commission April 1985	the state of the s

Apart from the differences in output type, each unit differs at output channels and voltage. The PSW-720 is dual channel output and PSW-1080 is triple channel output.

ACCESSORIES :

Power Cord x1 (Region dependent)

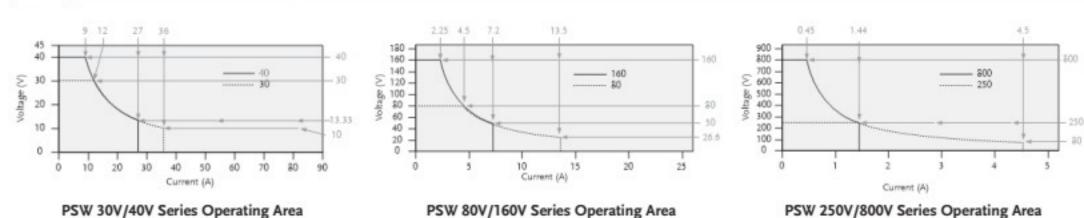
GTL-123	Test Lead x 1 (30V/40V/80V/160VOne low voltage module for each channel)
GTL-240	USB Cable"L" Type x1
PSW-004	Basic Accessories Kit x1 (30V/40V/80V/160V low voltage module)
PSW-008	Basic Accessories Kit x1 (250V/800V high voltage module)
PSW-009	Output terminal cover (30V/40V/80V/160V low voltage module)
PSW-011	Output terminal cover (250V/800V high voltage module)
PSW-012	High voltage output terminal (250V/800V high voltage module)

OPTIONAL ACCESSORIES

PSW-001	Accessory Kit
PSW-002	Simple IDC Tool
PSW-003	Contact Removal Tool
GUG-001	GPIB to USB Adaptor
GRA-410-J	Rack Mount Kit(JIS)
GRA-410-E	Rack Mount Kit(KIA)
GET-001	Extended Terminal with max. 30A (30V/40V/80V/160V low voltage module)
GET-002	Extended Terminal with max. 10A (250V/800V high voltage module)
GET-005	Extended European Terminal with max. 20A (30V/40V/80V/160V low voltage module)
GTL-130	Test Lead: 2x red, 2x black (250V/800V high voltage module)
GTL-248	GPIB Cable, 2000mm
GTL-250	GPIB Cable, 600mm
GUR-001A	USB to RS-232 Cable (M3), 3000mm
GUR-001B	USB to RS-232 Cable (#4-40 UNC), 3000mm



A. MULTI-RANGE OPERATION



When the power supply is configured that the total output (Current x Voltage output) is less than the rated power output, it functions as a typical Constant Current (CC) and Constant Voltage (CV) power supply.

However, when the power supply is configured such that the total output power (Current x Voltage Output) exceeds the rated power output, the effective output is actually limited to the operation area of the unit.

B. MULTI-CHANNEL

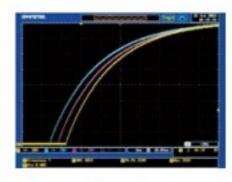


Figure 1

Multi-Channel, Dual-channel or triple-channel; the output latency between channels for same voltage module is less than 0.1ms.

When using a single-channel power supply for parallel multiple voltage output testing, there are different delays and slew rate settings, resulting in longer voltage output delay times and lack of control. The PSW-Multi Series features a built-in synchronous output control function (F130) that allow Dual-channel or triple-channel; the output latency between channels for same voltage module is less than 0.1ms.

It can fulfill diverse testing applications, for example: multi-channel digital device testing, electronic circuit verification, battery charging and discharging testing, and more.

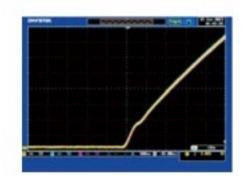


Figure 2

When using a single-channel power supply with three units connected in parallel through the backplane for synchronized output, each unit will experience a voltage output latency of approximately 5 to 10 ms. (Figure 1)

The waveform of PSW-Multi Series in triple-channel synchronized output mode exhibits voltage output latency times less than 0.1 ms for each channel (with the same voltage model) (Figure 2)

Dual-channel/Triple-channel Programmable Switching D.C. Power Supply

ADVANCED WEB SERVER

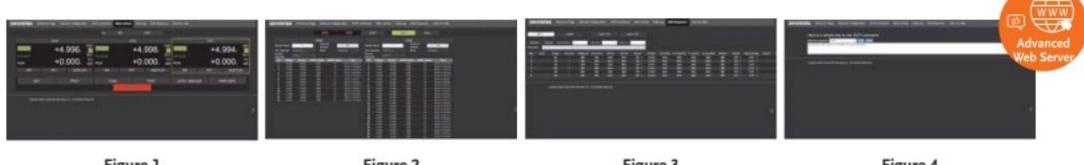


Figure 3 Figure 4 Figure 1 Figure 2

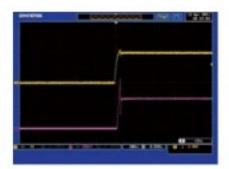
SCPI commands can be issued directly on the browser, examples are as follows: Direct control of PSW-Multi series power supplies on the browser. (Figure 1)

Data Log can be performed on the browser. For standard web server, the fastest data log time interval is 1 second. PSW-Multi series also provide paid version (active by option license key), the fastest data log time interval is 0.1 seconds and the data save to USB drive directly. (Figure 2)

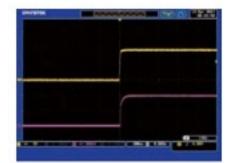
Sequences can be edited on the browser. (Figure 3)

The above advanced web server functions are new functions of PSW-Multi. Currently, there is no plan to update the advanced web server in the existing PSW-Series (Single Channel). (Figure 4)

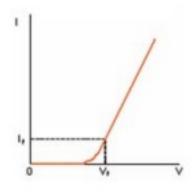
CV / CC PRIORITY SELECTION



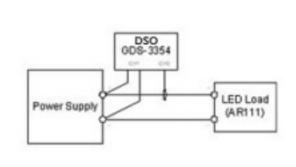
The Inrush Current and Surge Voltage occur at LED Forward Voltage(Vf)Under C.V Priority



The CC Priority Feature Effectively Limits the Occurrence of Inrush Current and Surge Voltage when the Supplied Voltage Rises to the LED Forward Voltage



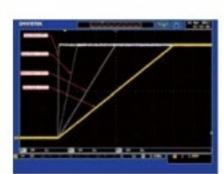
V-I Characteristic of Diode



Using GDS-3354 DSO to Test LED Operation Under CV Priority and CC Priority Respectively

The PSW-Multi Series provides CC Mode and CV Mode to fit various to meet the specific requirements. The CC and CV Priority Selection applications in the general purpose market. To get into critical application enable the power supply to run under CC priority, rather than normal niches, however, the power supply needs to provide advanced features CV priority, at the output-on stage.

ADJUSTABLE SLEW RATE



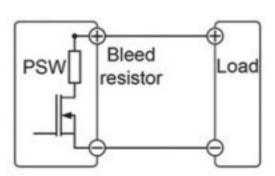
The Adjustable Rise Time of the PSW 30V Module



The Adjustable Rise Time of the PSW 800V Module

The PSW-Multi Series has adjustable slew rates for the level transition of both Current and Voltage. This gives the PSW-Multi Series power supply the ability to set specific rise time and fall time of the Voltage and Current drawn from the power supply to verify DUT performance during the Voltage/Current level transition. The feature also provides the benefit to slow down the voltage transition at the power output-on to protect DUT from inrush current damage. This is especially useful for the test of heavycurrent-drawn devices like capacitors.

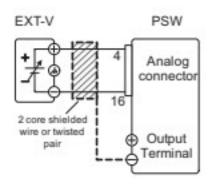
BLEEDER CONTROL



PSW-Multi Series Built-in Bleed Resistor

The PSW-Multi Series employs a bleed resistor in parallel with the output terminal. Bleed resistor is designed to dissipatch the power from the power supply filter capacitors when power is turned off and the load is disconnected. Without a bleed resistor, power terminal may remain charged on the filter capacitors for some time and be potentially hazardous. In addition, bleed resistor also allows for smoother voltage regulation of the power supply as the bleed resistor acts as a minimum voltage load. The bleed resistance can be turned on or off using the configuration setting.

G. EXTERNAL ANALOG REMOTE CONTROL



Switch PSW

Analog connector

2 core shielded wire or twisted pair

Output Terminal

Analog connector

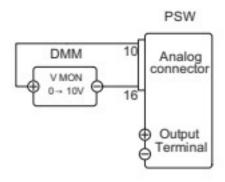
2 core shielded wire or twisted pair

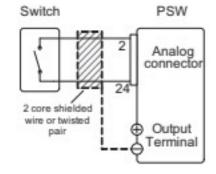
Output Terminal

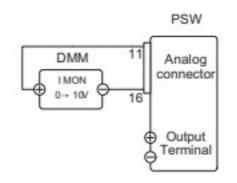
External Voltage Control of the Voltage Output

External Switch Control of the Main Power Shut-down

External Resistance control of the Voltage Output







External DMM Monitoring of the Output Voltage

External Switch Control of the Output On/Off

External DMM Monitoring of the Output Current

On the rear panel of the PSW-Multi Series power supply, a 26-pin Analog Control connector is available to perform lots of remote control and monitoring functions. The output voltage and current can be set using external voltage or resistance.

The power supply output on/off and main power shut-down can also be controlled using external switches. This Analog Control Connector is complied with the Mil 26 pin connector(OMRON XG4 IDC plug) standard.

VARIOUS INTERFACES SUPPORT & EXTENDED TERMINAL BOX

















GET-002



GET-005

GUG-001

Adapter

GPIB to USB

GET-001

Extended Terminal

(for PSW 30V/40V/80V/160V)

Extended Terminal

(for PSW 250V/800V)

Extended European Terminal (for PSW 30V/40V/80V/160V)

Rear Panel for PSW-Multi Series

The PSW-Multi Series provides USB Host port in the front panel for easy access of stored data, such as test script program. In the rear panel, a USB Device port is available for remote control or I & V data logging of power output through a PC controller. The LAN interface, which meets DHCP standard, is provided as a standard feature of the PSW-Multi Series for system communications and ATE applications.

An Extender Terminal box (P/N: GET-001/GET-002/GET-005) is provided as optional accessory to extend the power output form the rear panel to the front side. This extender terminal gives R&D or QC engineers convenience to do the jobs without frequently reaching the output terminal at the rear side of the PSW-Multi Series.

USING THE RACK MOUNT KIT



Rack Mount Kit GRA-410-J (JIS)

The PSW-Multi Series has an optional Rack Mount Kit (GW Instek part number: [JIS] GRA-410-J, [EIA] GRA-410-E[EIA]) that can be used to hold



Rack Mount Kit GRA-410-E (EIA)

6x PSW models, 3x PSW-720 models, 2x PSW-1080 models or a combination of all models (1x PSW, 1x PSW-720 and 1x PSW-1080).

Programmable Switching D.C. Power Supply (Multi-Range D.C. Power Supply)



PSW-Series



FEATURES

- * Voltage Rating: 30V/40V/80V/160V/250V/800V, Output Power Rating: 360W~1080W
- * Multi-range Voltage & Current Combinations in One Power Supply
- * C.V/C.C Priority; Particularly Suitable for the Battery and LED Industry
- * Adjustable Slew Rate
- * Series Operation(2 units in Series)for(30V/40V /80V/160V), Parallel Operation(3 units in Parallel) for (30V/40V/80V/160V/250V/800V)
- * High Efficiency and High Power Density
- * 1/2, 1/3, 1/6 Rack Mount Size Design (EIA/JIS Standard) for 360W, 720W, 1080W
- * Standard Interface : LAN, USB, Analog Control Interface
- * Optional Interface : GPIB-USB Adaptor, RS232-USB Cable
- * LabVIEW Driver



PSW 80-40.5 (0-80V, 0-40.5A, 1080W)



PSW 80-27 (0-80V, 0-27A, 720W)



PSW 80-13.5 (0-80V, 0-13.5A, 360W)

The PSW-Series is a single-output multi-range programmable switching DC Power Supply covering a power range up to 1080W. This series of products include eighteen models with the combination of 30V, 40V, 80V, 160V, 250V and 800V rated voltages and 360W, 720W and 1080W maximum output powers. The multi-range feature allows the flexible and efficient configuration of voltage and current within the rated power range. As the PSW-Series can be connected in series for maximum 2 units or in parallel for maximum 3 units, the capability of connecting multiple PSW-Series units for higher voltage or higher current output provides a broad coverage of applications. With the flexibility of multi-range power utilization and series/parallel connection, the PSW-Series significantly reduces the users' cost for various power supply products to accommodate the projects with different power requirements.

The C.V/C.C priority selection of the PSW-Series is a very useful feature for DUT protection. The conventional power supply normally operates under C.V mode when the power output is turned on. This could bring a high inrush current to the capacitive load or current-intensive load at the power output-on stage. Taking the I-V curve verification of LED as an example, it becomes a very challenging task to perform this measurement using a conventional power supply. With LED connected to a power supply under C.V mode as the initial setting, when the power output is turned on and the voltage rises to the LED forward voltage, the current will suddenly peak up and exceed the preset value of current limit. Upon detecting this high current, the power supply starts the transition from C.V mode to C.C. mode. Though the current becomes stable after the C.C mode being activated, the current spike occurred at the C.V and C.C crossover point may possibly damage the DUT. At the power output-on stage, the PSW-Series is able to operate under C.C priority to limit the current spike occurred at the threshold voltage and therefore protects DUT from the inrush current damage.

The adjustable slew rate of the PSW-Series allows users to set for either output voltage or output current, a specific rise time from low to high level transition, and a specific fall time from high to low level transition. This facilitates the characteristic verification of a DUT during voltage or current level changes with controllable slew rates. Most manufacturing tests of lighting device or large capacitor during power output-on are associated with the occurrence of high surge current, which can greatly reduce the life time of the DUT. To prevent inrush current from damaging current-intensive devices, a smooth and slow voltage transition during power On-Off can significantly reduce the spike current and protect the device from high current damage.

The OVP and OCP are provided with the PSW-Series. Both OVP and OCP levels can be selected, with default level set at 110%, of the rated voltage/current of the power supply. When any of the protection levels is tripped, the power output will be switched off to protect the DUT. The PSW-Series provides USB Host/Device and LAN interfaces as standard, GPIB-USB adapter and RS232-USB cable as optional. The LabView driver and the Data Logging PC software are supported on all the available interfaces. An analog control/monitoring connector is also available on the rear panel for external control of power On/Off and external monitoring of power output Voltage and Current.

PARALLEL OPERATION (3 UNITS)

MODEL	SINGLE UNIT	2 UNITS	3 UNITS
PSW 30-36	30V/36A	30V/72A	30V/108A
PSW 30-72	30V/72A	30V/144A	30V/216A
PSW 30-108	30V/108A	30V/216A	30V/324A
PSW 40-27	40V/27A	40V/54A	40V/81A
PSW 40-54	40V/54A	40V/108A	40V/162A
PSW 40-81	40V/81A	40V/162A	40V/243A
PSW 80-13.5	80V/13.5A	80V/27A	80V/40.5A
PSW 80-27	80V/27A	80V/54A	80V/81A
PSW 80-40.5	80V/40.5A	80V/81A	80V/121.5A
PSW 160-7.2	160V/7.2A	160V/14.4A	160V/21.6A
PSW 160-14.4	160V/14.4A	160V/28.8A	160V/43.2A
PSW 160-21.6	160V/21.6A	160V/43.2A	160V/64.8A
PSW 250-4.5	250V/4.5A	250V/9A	250V/13.5A
PSW 250-9	250V/9A	250V/18A	250V/27A
PSW 250-13.5	250V/13.5A	250V/27A	250V/40.5A
PSW 800-1.44	800V/1.44A	800V/2.88A	800V/4.32A
PSW 800-2.88	800V/2.88A	800V/5.76A	800V/8.64A
PSW 800-4.32	800V/4.32A	800V/8.64A	800V/12.96A

SERIES OPERATION (2 UNITS)

MODEL	SINGLE UNIT	2 UNITS
PSW 30-36	30V/36A	60V/36A
PSW 30-72	30V/72A	60V/72A
PSW 30-108	30V/108A	60V/108A
PSW 40-27	40V/27A	80V/27A
PSW 40-54	40V/54A	80V/54A
PSW 40-81	40V/81A	80V/81A
PSW 80-13.5	80V/13.5A	160V/13.5A
PSW 80-27	80V/27A	160V/27A
PSW 80-40.5	80V/40.5A	160V/40.5A
PSW 160-7.2	160V/7.2A	320V/7.2A
PSW 160-14.4	160V/14.4A	320V/14.4A
PSW 160-21.6	160V/21.6A	320V/21.6A
PSW 250-4.5	N/A	N/A
PSW 250-9	N/A	N/A
PSW 250-13.5	N/A	N/A
PSW 800-1.44	N/A	N/A
PSW 800-2.88	N/A	N/A
PSW 800-4.32	N/A	N/A

SPECIFICATIONS									
	PSW 30-36	PSW 30-72	PSW 30-108	PSW 40-27	PSW 40-54	PSW 40-81	PSW 80-13.5	PSW 80-27	PSW 80-40.5
OUTPUT RATING				5					
Voltage	0 - 30V	0 – 30V	0 – 30V	0 ~ 40V	0 ~ 40V	0 ~ 40V	0 - 80V	0 - 80V	0 - 80V
Current	0 – 36A	0 – 72A	0 – 108A	0 ~ 27A 360W	0 ~ 54A 720W	0~ 81A 1080W	0 ~ 13.5A 360W	0 – 27A 720W	0 - 40.5A 1080W
REGULATION(CV)	360W	720W	1080W	300W	720W	1080W	360W	720W	1080W
Load	20mV	20mV	20mV	25mV	25mV	25mV	45mV	45mV	45mV
Line	18mV	18mV	18mV	23mV	23mV	23mV	43mV	43mV	43mV
REGULATION(CC)				85) E					
Load	41mA	77mA 77mA	113mA	32mA	59mA	86mA	18.5mA	32mA	45.5mA
RIPPLE & NOISE (N	41 mA		113mA le Bandwidth=1	32mA	59mA	86mA	18.5mA	32mA	45.5mA
CV p-p	60mV	80mV	100mV	60mV	80mV	100mV	60mV	80mV	100mV
CV rms	7mV	11mV	14mV	7mV	11mV	14mV	7mV	11mV	14mV
CC rms	72mA	144mA	216mA	54mA	108mA	162mA	27mA	54mA	81mA
PROGRAMMING AC									
Voltage Current	0.1% +10mV	0.1% +10mV 0.1% + 60mA	0.1% +10mV	0.1%+10mV 0.1%+20mA	0.1%+10mV 0.1%+50mA	0.1%+10mV 0.1%+80mA	0.1% +10mV 0.1% + 10mA	0.1% +10mV 0.1% + 30mA	0.1% +10mV 0.1% + 40mA
MEASUREMENT ACC	0.1% + 30mA	0.1% + 60mA	0.1% + 100mA	V. I /OTZUITA	0.170730/IIA	V.170TOVITIA	0.176 + TOTTA	0.170 + 30MA	0.170 + 40MA
Voltage	0.1% +10mV	0.1% +10mV	0.1% +10mV	0.1%+10mV	0.1%+10mV	0.1%+10mV	0.1% +10mV	0.1% +10mV	0.1% +10mV
Current	0.1% +10mV 0.1% +30mA	0.1% +60mA	0.1% +100mA		0.1%+50mA	0.1%+80mA	0.1% +10mA	0.1% +30mA	0.1% +40mA
RESPONSE TIME									
Raise Time	50ms	50ms	50ms	50ms	50ms	50ms	50ms	50ms	50ms
Fall Time(Full Load)	50ms	50ms	50ms	50ms	50ms	50ms	50ms	50ms	50ms
Fall Time(No Load) Load Transient Recover Time	500ms 1ms	500ms 1ms	500ms	500ms 1ms	500ms 1ms	500ms 1ms	500ms 1ms	500ms 1ms	500ms 1ms
(Load change from 50–100%)	ims	ims	1ms	IIIIS	ims	ims	11113	11113	11113
PROGRAMMING RES	SOLUTION (By	PC Remote Cont	rol Mode)						
Voltage	1mV	1mV	1mV	1mV	1mV	1mV	2mV	2mV	2mV
Current	1mA	2mA	3mA	1mA	2mA	3mA	1mA	2mA	3mA
MEASUREMENT RES									
Voltage Current	1mV 1mA	1mV 2mA	1mV 3mA	1mV 1mA	1mV 2mA	1mV 3mA	2mV 1mA	2mV 2mA	2mV 3mA
SERIES AND PARALL				TIIIA	2111/4	JIIIA			
Parallel Operation	Up to 3 units	including the ma	aster unit						
Series Operation		including the ma							
PROTECTION FUNC	TION								
OVP	3-33V	3-33V	3-33V	4 – 44V	4 – 44V	4 – 44V	8-88V	8-88V	8-88V
OCP	3.6 -39.6A	5-79.2A	5-118.8A	2.7 – 29.7A	5 59.4A	5 ~ 89.1A	1.35-14.85A	2.7-29.7A	4.05-44.55A
ОНР	Activated by e	lecated internal t	emperatures	0				27	
FRONT PANEL DISP	LAY ACCURACY	4 digits							
Voltage	0.1%±20mV	0.1%±20mV	0.1%±20mV	0.1%+20mV	0.1%+20mV	0.1%+20mV	0.1%±20mV	0.1%±20mV	0.1%±20mV
Current	0.1%±40mA	0.1%±70mA	0.1%±100mA	0.1%+30mA	0.1%+60mA	0.1%+80mA	0.1%±20mA	0.1%±40mA	0.1%±50mA
ENVIRONMENT CO									
Operation Temp	0°C - 50°C								
Storage Temp Operating Humidity	-25°C - 70°C 20% - 85% RI	H; No condensat	tion						
Storage Humidity		ss; No condensa							
READ BACK TEMP CO	DEFFICIENT								
Voltage Current		frated output vo frated output cu	~						
OTHER	1000	- 15°							
Analog Control	Yes			1000 and					
Interface		IB-USB (Option)	RS232-USB(Opt	tion)					
Fan POWER SOURCE		sensing control C, 47–63Hz, sin	gle phase						
				71.000-1244.0	142000-32400	214090-12400	71.070-3240.0	142000-32400	214070-12401
& WEIGHT	71(W)x124(H) x350(D) mm;	142(W)x124(H) x350(D)mm;	214(W)x124(H) x350(D) mm;	71 (W)x124(H) x350(D) mm;	142(W)x124(H) x350(D) mm;	214(W)x124(H) x350(D) mm;	71 (W)x124(H) x350(D) mm;	142(W)x124(H) x350(D) mm;	214(W)x124(H) x350(D) mm;
a maidin	Approx. 3kg	Approx. 5.3kg	Approx. 7.5kg	Approx. 3kg	Approx. 5.3kg	Approx. 7.5kg		Approx. 5.3kg	Approx. 7.5kg

PSW-001 PSW-002 PSW-003 PSW-004 PSW-005 PSW-006 PSW-007















Programmable Switching D.C. Power Supply (Multi-Range D.C. Power Supply)

SPECIFICATIONS									
	PSW 160-7.2	PSW 160-14.4	PSW 160-21.6	PSW 250-4.5	PSW 250-9	PSW 250-13.5	PSW 800-1.44	PSW 800-2.88	PSW 800-4.32
OUTPUT RATING								100	
Voltage	0 - 160V	0 - 160V	0 - 160V	0 ~ 250V	0 ~ 250V	0 ~ 250V	0 ~ 800V	0 ~ 800V	0 800V
Current	0 - 7.2A	0 - 14.4A	0 - 21.6A	0 ~ 4.5A	0 - 9A	0 ~ 13.5A	0 1.44A	0 - 2.88A	0 ~ 4.32A
Power	360W	720W	1080W	360W	720W	1080W	360W	720W	1080W
REGULATION(CV)									
Load	85mV	85mV	85mV	130mV	130mV	130mV	405mV	405mV	405mV
Line	83mV	83mV	83mV	128mV	128mV	128mV	403 mV	403 mV	403mV
REGULATION(CC)									
Load	12.2mA	19.4mA	26.6mA	9.5mA	14mA	18.5mA	6.44mA	7.88mA	9.32mA
Line	12.2mA	19.4mA	26.6mA	9.5mA	14mA	18.5mA	6.44mA	7.88mA	9.32mA
RIPPLE & NOISE (N				1MHz)					
CV p-p	60mV 12mV	80mV 15mV	100mV 20mV	80mV	100mV	120mV	150mV	200mV	200mV
CV rms CC rms	15mA	30mA	45mA	15mV 10mA	15mV 20mA	15mV 30mA	30mV 5mA	30mV 10mA	30mV 15mA
		301181	131101	TOTTIA	ZUITIA	JUITIA	JIIIA	TOTTIN	13000
PROGRAMMING ACC	0.1% +100mV	0.1% +100mV	0.1% +100mV	0.1%+200mV	0.1%+200mV	0.196 - 20014	0.1%+400mV	0.1%+400mV	0.1%+400mV
Voltage	0.1% +100mV 0.1% + 5mA	0.1% +100mV 0.1% +15mA	0.1% +100mV 0.1% +20mA	0.1%+200mV 0.1%+5mA	0.1%+200mV 0.1%+10mA	0.1%+200mV 0.1%+15mA	0.1%+400mV 0.1%+2mA	0.1%+400mV	0.1%+400mV 0.1%+6mA
Current		U.170 +13MA	0.170 +ZUMA	J.170TJ118	0.1/0TIONIA	0.170T13IIIA	3.1707£1181	2.1701-1101	J.1,0101101
MEASUREMENT ACC		0.304 .305 .11	0.10/ .100 .11	0.10/ .200 . 14	0.10/ - 200 - 1/	0.10/ .200 . 1/	0.10/ . 400 . 1/	0.10/ - 400 - 14	0.10/ - 400 - 14
Voltage	0.1% +100mV 0.1% +5mA	0.1% +100mV 0.1% +15mA	0.1% +100mV 0.1% +20mA	0.1%+200mV 0.1%+5mA	0.1%+200mV 0.1%+10mA	0.1%+200mV 0.1%+15mA	0.1%+400mV 0.1%+2mA	0.1%+400mV 0.1%+4mA	0.1%+400mV 0.1%+6mA
Current	U.170 +3MA	0.176 +15MA	0.176 +ZUMA	U.170+3ffiM	0.170+10ITIA	0.170+13HIA	U. 1 /072111A	U.1/OTHINA	0.170+011IA
RESPONSE TIME	2222222		0.000 Market	100	100	100	150	150	150
Raise Time	100ms	100ms	100ms	100ms	100ms	100ms	150ms	150ms	150ms
Fall Time(Full Load)	100ms 1000ms	100ms 1000ms	100ms 1000ms	150ms 1200ms	150ms 1200ms	150ms 1200ms	300ms 2000ms	300ms 2000ms	300ms 2000ms
Fall Time(No Load) Load Transient Recover Time	2ms	2ms	2ms	2ms	2ms	2ms	2ms	2ms	2ms
(Load change from 50–100%)	21113	21113	21113		123				
PROGRAMMING RES	OLUTION (By	PC Remote Cont	rol Mode)					100	
Voltage	3mV	3mV	3mV	5mV	5mV	5mV	14mV	14mV	14mV
Current	1mA	2mA	3mA	1mA	1mA	1mA	1mA	1mA	1mA
MEASUREMENT RES	OLUTION (By	PC Remote Cont	rol Mode)						
Voltage	3mV	3mV	3mV	5mV	5mV	5mV	14mV	14mV	14mV
Current	1mA	2mA	3mA	1mA	1mA	1mA	1mA	1mA	1mA
SERIES AND PARALL	EL CAPABILITY								
Parallel Operation		including the ma	ster unit	3	3	3	3	3	3
Series Operation		ncluding the ma		N/A	N/A	N/A	N/A	N/A	N/A
PROTECTION FUNCT				,		,	,	-	7
		16.1761	16 1764	To a recognition of	0202702222				
OVP	16-176V	16-176V	16-176V	20-275V	20-275V	20-275V	20-880V	20-880V	20-880V
ОСР	0.72-7.92A	1.44-15.84A	2.16-23.76A	0.45-4.95A	0.9-9.9A	1.35~14.85A	0.144-1.584A	0.288-3.168A	0.432-4.752
ОНР		lecated internal t	emperatures						
FRONT PANEL DISPL	AY ACCURACY,	4 digits							
Voltage	0.1%±100mV	0.1%±100mV	0.1%±100mV	0.1%±200mV	0.1%±200mV	0.1%±200mV	0.1%±400mV	0.1%±400mV	0.1%±400mV
Current	0.1%±5mA	0.1%±30mA	0.1%±30mA	0.1%±5mA	0.1%±10mA	0.1%±20mA	0.1%±2mA	0.1%±4mA	0.1%±6mA
ENVIRONMENT CON	IDITION								
Operation Temp	0°C - 50°C								
- Permistra rentify									
	-25°C - 70°C								
Storage Temp Operating Humidity	-25°C − 70°C	H; No condensat	ion						
Storage Temp	-25°C − 70°C 20% − 85% RF	H; No condensat ss; No condensa							
Storage Temp Operating Humidity	-25°C − 70°C 20% − 85% RH 90% RH or Le								
Storage Temp Operating Humidity Storage Humidity READ BACK TEMP CO	-25°C - 70°C 20% - 85% RH 90% RH or Les DEFFICIENT	ss; No condensa	tion	minute warm-ui	0				
Storage Temp Operating Humidity Storage Humidity	-25°C − 70°C 20% − 85% RH 90% RH or Les DEFFICIENT 100ppm/°C of		tion tage : after a 30						
Storage Temp Operating Humidity Storage Humidity READ BACK TEMP CO Voltage Current	-25°C − 70°C 20% − 85% RH 90% RH or Les DEFFICIENT 100ppm/°C of	rated output vol	tion tage : after a 30						
Storage Temp Operating Humidity Storage Humidity READ BACK TEMP CO Voltage Current OTHER	-25°C − 70°C 20% − 85% RH 90% RH or Les DEFFICIENT 100ppm/°C of	rated output vol	tion tage : after a 30						
Storage Temp Operating Humidity Storage Humidity READ BACK TEMP CO Voltage Current OTHER Analog Control	-25°C - 70°C 20% - 85% RH 90% RH or Les DEFFICIENT 100ppm/°C of 200ppm/°C of	rated output vol	tage : after a 30 rrent : after a 30	minute warm-u					
Storage Temp Operating Humidity Storage Humidity READ BACK TEMP CO Voltage Current OTHER	-25°C - 70°C 20% - 85% RH 90% RH or Les DEFFICIENT 100ppm/°C of 200ppm/°C of Yes USB/LAN/GPI	rated output vol	tage : after a 30 rrent : after a 30	minute warm-u					
Storage Temp Operating Humidity Storage Humidity READ BACK TEMP CO Voltage Current OTHER Analog Control Interface	-25°C - 70°C 20% - 85% RH 90% RH or Les DEFFICIENT 100ppm/°C of 200ppm/°C of Yes USB/LAN/GPI With thermal s	rated output vol	tage : after a 30 rent : after a 30 RS232-USB(Opt	minute warm-u					
Storage Temp Operating Humidity Storage Humidity READ BACK TEMP CO Voltage Current OTHER Analog Control Interface Fan POWER SOURCE	-25°C - 70°C 20% - 85% RH 90% RH or Les DEFFICIENT 100ppm/°C of 200ppm/°C of Yes USB/LAN/GPI With thermal s 85VAC-265VA	rated output vol rated output cur (B-USB(Option)/ sensing control C, 47–63Hz, sing	tage : after a 30 rent : after a 30 RS232-USB(Opt	minute warm-u	p	21401/0~124/U1	71 (\V/\v\124/LI\	142/05/0~124/140	2]4/11/1-124/1-11
Storage Temp Operating Humidity Storage Humidity READ BACK TEMP CO Voltage Current OTHER Analog Control Interface Fan	-25°C - 70°C 20% - 85% RH 90% RH or Les DEFFICIENT 100ppm/°C of 200ppm/°C of Yes USB/LAN/GPI With thermal s 85VAC-265VA 71(W)x124(H)	rated output vol rated output cur rated output cur (B-USB(Option)/ sensing control	tage : after a 30 rent : after a 30 RS232-USB(Opt	minute warm-u		214(W)x124(H) x350(D) mm;	71 (W)x124(H) x350(D) mm;	142(W)x124(H) x350(D) mm;	214(W)x124(H) x350(D) mm;

PSW-008 PSW-009 PSW-010 PSW-011 PSW-012















PSW-Series

ORDERING INFORMATION

(0-30V/0-36A/360W) Multi-Range DC Power Supply
(0-30V/0-72A/720W) Multi-Range DC Power Supply
(0-30V/0-108A/1080W) Multi-Range DC Power Supply
(0~40V/0~27A/360W) Multi-Range DC Power Supply
(0~40V/0~54A/720W) Multi-Range DC Power Supply
(0-40V/0-81A/1080W) Multi-Range DC Power Supply
(0-80V/0-13.5A/360W) Multi-Range DC Power Supply
(0-80V/0-27A/720W) Multi-Range DC Power Supply
(0-80V/0-40.5A/1080W) Multi-Range DC Power Supply
(0-160V/0-7.2A/360W) Multi-Range DC Power Supply
(0-160V/0-14.4A/720W) Multi-Range DC Power Supply
(0-160V/0-21.6A/1080W) Multi-Range DC Power Supply
(0-250V/0-4.5A/360W) Multi-Range DC Power Supply
(0-250V/0-9A/720W) Multi-Range DC Power Supply
(0-250V/0-13.5A/1080W) Multi-Range DC Power Supply
(0-800V/0-1.44A/360W) Multi-Range DC Power Supply
(0-800V/0-2.88A/720W) Multi-Range DC Power Supply
(0-800V/0-4.32A/1080W) Multi-Range DC Power Supply

ACCESSORIES:

CD-ROM x 1 (Programming Manual, User Manual), GTL-123 Test Lead x 1 (for PSW 30V/40V/80V/160V), Power Cord x 1 (Region dependent), GTL-240 USB Cable " L " Type x 1, PSW-004 Basic Accessories Kit x 1 (for PSW 30V/40V/80V/160V), Includes: M4 Terminal screws and washers x 2, Air Filter x 1, Analog control protection dummy x 1, Analog control lock lever x 1, M8 terminal bolts, nuts and washers x 2

PSW-008 Basic Accessories Kit for PSW 250V/800V models PSW-009 Output Terminal Cover for 30V/40V/80V/160V models PSW-011 Output Terminal Cover for 250V/800V models PSW-012 High Voltage Output Terminal for 250V/800V model

OPTIONAL ACCESSORIES

PSW-001	Accessory Kit	PSW-010	Large filter (Type II/III)
PSW-002	Simple IDC Tool	GTL-248	GPIB Cable, Double Shielded, 2000mm
PSW-003	Contact Removal Tool	GTL-250	GPIB Cable, Double Shielded, 600mm
PSW-005	Cable for 2 Units of PSW-Series in Series	GUR-001A	USB to RS-232 Cable, 300mm(H3)
	Mode Connection (for PSW 30V/40V/80V/160V)	GUR-001B	RS-232 to USB Adapter with #4-40 UNC
PSW-006	Cable for 2 Units of PSW-Series in Parallel Mode		Rivet Nut
	Connection	GUG-001	GPIB to USB Adaptor
PSW-007	Cable for 3 Units of PSW-Series in Parallel Mode	GRA-410-J	Rack Mount Kit (JIS)
	Connection	GRA-410-E	Rack Mount Kit (EIA)
GET-001	Extended Terminal with max. 30A(for PSW 30V/40V	//80V/160V)	
GET-002	Extended Terminal with max. 10A(for PSW 250V/8	00V)	
GET-005	Extended European Terminal with max. 20A (for P.	SW 30V/40V	//80V/160V)
GTL-130	Test lead : 2 x red, 2 x black(for PSW 250V/800V)		

PSW-Series (LV) Rear Panel



PSW-Series (HV) Rear Panel



GRA-410-J/E Rack Mount Kit (JIS/EIA)

For: PSW-Series



GTL-130 Test lead, 1200mm, 18AWG, UL 3239 (for PSW 250V/800V)



GUR-001A USB to RS-232 Cable (for PSW-Series, 300mm)



GUG-001 GPIB to USB Adapter (for GDS-3000Series, PSW-Series) **GET-001** Extended Terminal (for PSW 30V/40V/80V/160V) **GET-002** Extended Terminal (for PSW 250V/800V)



GET-005 Extended European Terminal (for PSW 30V/40V/80V/160V)

















PSU-Series



FEATURES

- * Voltage Output: 6V/8V/12.5V/15V/20V/30V/40V/ 50V/60V/80V/100V/150V/300V/400V/600V
- * Power Output : 1200W ~ 1560W
- * C.V/C.C Priority Mode
- * Adjustable Voltage/Current Rise and Fall Time
- * Series/Parallel Connection : Max. 2 units (Models Under 300V)/4 units of The Same
- * High Efficiency and High Power Density
- * 1U Height and 19"Rack Mount Size
- * Three sets of Preset Function
- * Bleeder Control Function
- * Internal Resistance Function
- * Panel Lock Function
- * Protection : OVP, OCP, OHP, UVL, AC Fail, FAN Fail
- * Standard: USB, LAN, RS-232, RS-485, Analog Control
- * Option : GPIB, Isolated Analog Interface (Voltage Control/Current Control)

GW Instek PSU-Series, a DC power supply with high power density design, is 1U in height and compatible with 19" Rack Mount Size. The series is suitable for test system installation or system integration by flexibly selecting models for the integration into the existing test system. The PSU-Series, featuring superior voltage and current control functions, comprises fifteen models with output voltage/current ranging from 6V/200A to 600V/2.6A. The Series is suitable for different test conditions and DUTs, including electronic components testing, micro resistors, relays, shunt resistors, 12V/24V/48V battery simulation, and automotive electronic device testing.

The PSU-HV series is ideal for the primary input of DC/DC converter and servomotor production application. PSU is often integrated into component test systems such as aging test equipment for capacitors; 600V DC bias applications; aging test equipment for diode; semiconductor production equipment; automotive electronics; and ECU for V8 engine or V12 engine, etc.

Utilizing same model units of the PSU-Series to conduct series and parallel connections can increase total output power, total current or total voltage. The wide voltage and current output ranges of the PSU-Series can fully satisfy various voltage and current measurement requirements. The PSU-Series is a single power output DC programmable power supply, which outputs 1200W to 1560W. The PSU-Series provides maximum 2 units in series connection (models under 300V) to achieve maximum 600V or 4 units in parallel connection to obtain maximum 800A and the maximum output power of 6.24 kilowatts.

The PSU-Series allows settings for CC priority or CV priority. Under CC or CV mode, users can adjust slew rate for output voltage or current based upon test requirements. There are two kinds of slew rate settings: high speed priority and slew rate priority. High speed priority sets slew rate at the maximum speed to reach CC or CV mode. Slew rate priority allows users to set slew rate for CC or CV mode in order to control rise or fall slew rate. Slew rate priority mode is ideal for motor tests by adjusting the rise time of output voltage to protect DUT from being damaged by inrush current occurred at turn-on.

Comparing with other 1U power supplies available in the market, PSU supports a most complete array of interfaces, including USB, LAN, RS-232, RS-485, analog control interface, GPIB (option), isolated analog interface (voltage control), and isolated analog interface (current control). Via the multi-drop mode, PSU will not need any switch/hub and GPIB cable for remote control and slave unit augmentation when using LAN, USB or GPIB. This feature can help users save costs on augmentation equipment for connecting slave while using LAN or USB.

The PSU-Series provides users with flexible settings of High/Low Level or Trigger input/Trigger output signals with pulse width of 1 ~ 60ms. Trigger input controls PSU to output or upload preset voltage, current and memory parameters. While outputting or uploading preset voltage, current and memory parameters PSU can produce corresponding Trigger output signals.

PSU-Series Model Selection Table

1.5kW 1U High	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Voltage	6.000 V	8.000 V	12.50 V	15.00 V	20.00 V	30.00 V	40.00 V	50.00 V	60.00 V	80.00 V	100.0 V	150.0 V	300.0 V	400.0 V	600.0 V
Current	200.0 A	180.0 A	120.0 A	100.0 A	76.00 A	50.00 A	38.00 A	30.0 A	25.00 A	19.00 A	15.00 A	10.00 A	5.000 A	3.800 A	2.600 A
Power	1200 W	1440 W	1500 W	1500 W	1520 W	1500 W	1520 W	1500 W	1500 W	1520 W	1500 W	1500 W	1500 W	1520 W	1560 W
3kW 2U High	6-400(B)	8-360(B)	12.5-240(B)	15-200(B)	20-152(B)	30-100(B)	40-76(B)	50-60(B)	60-50(B)	80-38(B)	100-30(B)	150-20(B)	300-10(B)	400-7.6(B)	600-5.2(B)
Voltage	6.000 V	8.000 V	12.50 V	15.00 V	20.00 V	30.00 V	40.00 V	50.00 V	60.00 V	80.00 V	100.0 V	150.0 V	300.0 V	400.0 V	600.0 V
Current	400.0 A	360.0 A	240.0 A	200.0 A	152.0 A	100.0 A	76.00 A	60.00 A	50.00 A	38.00 A	30.00 A	20.00 A	10.00 A	7.600 A	5.200 A
Power	2400 W	2880 W	3000 W	3000 W	3040 W	3000 W	3040 W	3000 W	3000 W	3040 W	3000 W	3000 W	3000 W	3040 W	3120 W
4.51397	6-600(B)	8-540(B)	12.5-360(B)	15-300(B)	20-228(B)	30-150(B)	40-114(B)	50-90(B)	60-75 (B)	80-57(B)	100-45(B)	150-30(B)	300-15(B)	400-11.4(B)	600-7.8(B)
4.5kW 3U High	6-600(C)	8-540(C)	12.5-360(C)	15-300(C)	20-228(C)	30-150(C)	40-114(C)	50-90(C)	60-75(C)	80-57(C)	100-45(C)	150-30(C)	300-15(C)	400-11.4(C)	600-7.8(C)
30 (1181)	6-600(D)	8-540(D)	12.5-360(D)	15-300(D)	20-228(D)	30-150(D)	40-114(D)	50-90(D)	60-75 (D)	80-57(D)	100-45 (D)	150-30(D)	300-15(D)	400-11.4(D)	600-7.8(D)
Voltage	6.000 V	8.000 V	12.50 V	15.00 V	20.00 V	30.00 V	40.00 V	50.00 V	60.00 V	80.00 V	100.0 V	150.0 V	300.0 V	400.0 V	600.0 V
Current	600.0 A	540.0 A	360.0 A	300.0 A	228.0 A	150.0 A	114.0 A	90.0 A	75.00 A	57.00 A	45.00 A	30.00 A	15.00 A	11.40 A	7.800 A
Power	3600 W	4320 W	4500 W	4500 W	4560 W	4500 W	4560 W	4500 W	4500 W	4560 W	4500 W	4500 W	4500 W	4560 W	4680 W
class	6-800(B)	8-720(B)	12.5-480(B)	15-400(B)	20-304(B)	30-200(B)	40-152(B)	50-120(B)	60-100(B)	80-76(B)	100-60(B)	150-40(B)	300-20(B)	400-15.2(B)	600-10.4(B)
6kW 4U High	6-800(C)	8-720(C)	12.5-480(C)	15-400(C)	20-304(C)	30-200(C)	40-152(C)	50-120(C)	60-100(C)	80-76(C)	100-60(C)	150-40(C)	300-20(C)	400-15.2(C)	600-10.4(C)
40 High	6-800(D)	8-720(D)	12.5-480(D)	15-400(D)	20-304(D)	30-200(D)	40-152(D)	50-120(D)	60-100(D)	80-76(D)	100-60(D)	150-40(D)	300-20(D)	400-15.2(D)	600-10.4(D)
Voltage	6.000 V	8.000 V	12.50 V	15.00 V	20.00 V	30.00 V	40.00 V	50.00 V	60.00 V	80.00 V	100.0 V	150.0 V	300.0 V	400.0 V	600.0 V
Current	800.0 A	720.0 A	480.0 A	400.0 A	304.0 A	200.0 A	152.0 A	120.0 A	100.0 A	76.0 A	60.00 A	40.00 A	20.00 A	15.20 A	10.40 A
Power	4800 W	5760 W	6000 W	6000 W	6080 W	6000 W	6080 W	6000 W	6000 W	6080 W	6000 W	6000 W	6000 W	6080 W	6240 W

Note: B: Input voltage 170~265VAC, single phase; C: Input voltage 180~253VAC, three-phase three-wire; D: Input voltage 360~440VAC, three-phase four-wire; No CE certificate.

SPECIFICATIONS																	
Model		PSU	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Rated output voltage (*1)		٧	6	8	12.5	15	20	30	40	50	60	80	100	150	300	400	600
Rated output current (°2)		A	200	180	120	100	76	50	38	30	25	19	15	10	5	3.8	2.6
Rated output power		W	1200	1440	1500	1500	1520	1500	1520	1500	1500	1520	1500	1500	1500	1520	1560
Constant Voltage Mode		PSU	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Line regulation (°3) Load regulation (°4)		mV mV	2.6	2.8	3.25	3.5	4	5	6	7	8	10	12	17	32 32	42	62
Ripple and noise (°5)	p-p (°6)	mV	60	60	60	60	60	60	60	60	60	80	80	100	150	200	300
,	r.m.s. (°7)	mV	8	8	8	8	8	3	8	8	8	8	8	10	25	40	60
Temperature coefficient	,,,	ppm/°C	100ppm/C	after a 30 mi	inute warm-up	p											
Remote snese compensation voltage (single wire)		٧	- 1	1	1	1	1	1.5	2	2	3	4	5	5	5	5	5
Rise time (*8)	Rated load	ms	80	80	80	80	80	80	80	80	80	150	150	150	150	200	250
10 (10 th and 10	No load	ms	80	80	80	80	80	80	80	80	80	150	150	150	150	200	250
Fall time (*9)	Rated load	ms	10	50	50	50	50	80	80	80	80	150	150	150	150	200	250
1 10 10 10 10 10 10 10 10 10 10 10 10 10	No load	ms	500	600	700	700	800	900	1000	1100	1100	1200	1500	2000	2500	3000	4000
Transient response time (*10)		ms	1.5	1.5	1	1	1	1	1	1	1	1	1	2	2	2	2
Constant Current Mode		PSU	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Line regulation (*3)	-	mA mA	22 45	20	14 29	12	9.6	15	5.8 12.6	11	10	3.9 8.8	3.5	7	2.5	2.38 5.76	2.26 5.52
Load regulation (*11) Ripple and noise (*12)	r.m.s.	mA.	400	360	240	200	152	125	95	85	75	57	45	35	25	17	12
Temperature coefficient	1.111.50	ppm/°C			nute warm-u		172	123	- 77	90	- //		"		2.7	.,	1.6
Protection Function		PSU	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Over voltage protection (OVP)	Setting range	V	0.6 - 6.6	0.8-8.8	1.25 - 13.75	1.5 - 16.5	2 - 22	3 - 33	4 - 44	5-55	5 - 66	5 - 88	5 - 110	5 - 165	5 - 330	5 - 440	5 - 660
	Setting accuracy	mV	60	80	125	150	200	300	400	500	600	800	1000	1500	3000	4000	6000
Over current protection (OCP)	Setting range	A	5 - 220	5-198	5 - 132	5 - 110	5 - 83.6	5 - 55	3.8 - 41.8	3 - 33	2.5 - 27.5	1.9 - 20.9	1.5 - 16.5	1 - 11	0.5 - 5.5	0.38 - 4.18	0.26 - 2.86
100 Cont 100	Setting accuracy	mA	4000	3600	2400	2000	1520	1000	760	600	500	380	300	200	100	76	52
Under voltage limit (UVL)	Setting range		0 - 6.3	0 - 8.4	0 - 13.12	0 - 15.75	0 - 21	0 - 31.5	0 - 42	0 - 52.5	0 - 63	0 - 84	0 - 105	0 - 157.5	0 - 315	0 - 420	0 - 630
Over temperature protection (OHP)	Operation	3	Turn the out	*	\$17	190	KQ 15	1 2	* E		8 8			N .		10	
Incorrect sensing connection protection (SENSE)	Operation		Turn the out	*													
Low AC input protection (AC-FAIL)	Operation		Turn the out	_													
Shutdown (SD)	Operation		Turn the out														
Power limit (POWER LIMIT)	Operation	per	Over power		12 5 100	35.300	20.75	30.50	40.10	10.20	60.05	80.10	100.15	350.10	200.5	100.00	600.2.6
Analog Programming and Monitoring External voltage control output voltage		PSU	6-200 Accuracy an	8-180 d linearity: at	12.5-120 0.5% of rated	15-100 output voltar	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
External voltage control output voltage External voltage control output current					0.5% of rated o												
External voltage control output current External resistor control output voltage			-		1% of rated o												
External resistor control output vonage External resistor control output current					1.5% of rated												
Output voltage monitor			Accuracy: ±1			1											
Output current monitor			Accuracy: ±1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1777											
Shutdown control			Turns the or	utput off with	a LOW (0V t	o 0.5V) or sh	ort-circuit.										
Output on/off control					: Turn the out								5V) or open-	circuit.			
	-				a HIGH (4.5			um the outpu	t off using a	.OW (0V to 0).5V) or short	circuit.					
Alarm clear control					(0V to 0.5V)					072	0-07						
CV/CC/ALM/PWR ON/OUT ON indicator		1			ctor output; N												
Trigger out	-	_			ut = 0.8V; mir	- No.					t t						
Trigger in Front Panel		PSU	6-200	8-180	t voltage = 0.8	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Display, 4 digits Voltage accuracy	0.1% +	mV	12	16	25	30	40	60	80	100	120	160	200	300	600	800	1200
Current accuracy	0.2% +	mA	600	540	360	300	228	150	114	90	75	57	45	30	15	11.4	7.8
Indications	1.2,0 1				, A, VSR, ISR									30			7.4
Buttons		-			DT(ALM_CLR												
Knobs			Voltage, Cur														
USB port			Type A USB	connector													
Programming and Measurement (RS-232/485, USB	, LAN, GPIB)	PSU	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Output voltage programming accuracy	0.05% +	mV	3	4	6.25	7.5	10	15	20	25	30	40	50	75	150	200	300
Output current programming accuracy	0.2% +	mA	200	180	120	100	76	50	38	30	25	19	15	10	5	3.8	2.6
Output voltage programming resolution		mV	0.2	0.27	0.4	0.5	0.7	1	1.3	1.7	2	2.7	3.4	5.2	10.2	13.6	20.4
Output current programming resolution	6 No.	mA	6	6	4	3.3	2.5	1.7	1.2	1	0.8	0.65	0.5	0.34	0.19	0.13	0.09
Output voltage measurement accuracy	0.1% +	mV	6	8	12.5	15	20	30	40	50	60	80	100	150	300	400	600
Output current measurement accuracy Output voltage measurement resolution	0.2% +	mA mV	400 0.2	360 0.27	0.4	0.5	0.7	100	76	1.7	50	38	3.4	5.2	10.2	7.6	5.2
Output votage measurement resolution Output current measurement resolution		mA mA	6	6	4	3.3	2.5	1.7	1.2	1	0.8	0.65	0.5	0.34	0.19	0.13	0.09
Input Characteristics	5	PSU	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Norminal input rating					~ 60Hz, single										-449	12.010	
Input voltage range			85Vac ~ 265														
Input frequency range			47Hz ~ 63H	z													
Maximum input current	100Vac / 200Vac	A	21 / 11														
Inrush current			Less than 50	NA.													
Maximum input power		VA	2000														
Power factor	100Vac / 200Vac		0.99 / 0.98						4								
Efficiency (°13)	100Vac / 200Vac	%	76.5 / 79	78/81	82 / 85	82 / 85	83 / 86	83 / 86	84 / 87	84 / 87	84 / 87	84 / 87	84 / 87	84 / 87	84 / 87	84 / 87	84 / 87
Hold-up time		peri	20ms or gre 6-200		33 5 320	15 200	30.76	10.70	40.78	EO 20	60.38	10.10	100.15	350.10	200.5	400 1 0	600.7.6
Interface Capabilities USB		PSU	6-200 TypeA : Hos	8-180 + TuneB: Sla	12.5-120 ve, Speed: 1.1	15-100	20-76	30-50	40-38 Device Clas	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
LAN					ddress, User						ank						
RS-232 / RS-485					2D / EIA485 :				PROTE	,							
GPIB (Factory Option)					compliant inte												
Isolated Analog Control Interface (Factory Option)	5	PSU	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Voltage Control		2000	Using 0-5V	or 0 – 10V sij	gnals for prog		d measureme	ent				*********					
Current Control			-		signals for pr												
Environmental Conditions	8	PSU	6-200	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Operaing temperature		1	0°C ~ 50°C	(*14)													
Storage temperature			-25 °C ~ 70 °														
Operating humidity				RH; No con													
Storage humidity				less; No con	densation												
Altitude		Det.	Maximum 2		12 5 2 2 2	35.505	20.20	30.00	40.75	FA 35	60 SF	20.15	100.11	350.37	355.7	100 1 1	C00.2.2
General Specifications	male unitt-	PSU	6-200 Less than 8.	8-180	12.5-120	15-100	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	400-3.8	600-2.6
Weight Dimensions	main unit only (W×H×D)	kg mm	423 × 43.6 ×														
Cooling	(WACIALI)	- man		ooling by inte	ernal fan												
EMC					ean EMC dire	ctive 897314	EEC for Class	s A test and r	neasurement	products							
Safety					ean Low Volt												
Withstand voltage	-					-				it terminal to	Chassis: 100	00Vdc/1min:	150 <vout≤6< td=""><td>500; Output to</td><td>rminal to Ch</td><td>assis : 1500v</td><td>/dc/1min</td></vout≤6<>	500; Output to	rminal to Ch	assis : 1500v	/dc/1min
Withstand vortage																3231	
Insulation resistance			Chassis and	output term	linal; chassis	and Mc Imput	, AC Imput an	o output term	STREET FOOTBOX	or more for	10001						

- (*1) Minimum voltage is guaranteed to maximum 0.2% of the rated output voltage.

 (*2) Minimum current is guaranteed to maximum 0.4% of the rated output current.

 (*3) At 85 ~ 132Vac or 170 ~ 265Vac, constant load.

 (*4) From No-load to Pil-load, constant input voltage. Measured at the sensing point in Remote Sense.

 (*5) Measure with JEITA RC-9131B (1:1) probe
- (°6) Measurement frequency bandwidth is 10Hz ~ 20MHz. (°7) Measurement frequency bandwidth is 5Hz 1MHz.
- (*8) From 10% 90% of rated output voltage, with rated resistive load.
- (°9) From 90% ~ 10% of rated output voltage, with rated resistive load. (*10) Time for output voltage to recover within 0.5% of its rated output for a load change from 10 – 90% of its rated output current. Voltage set point from 10% – 100% of rated output.
- (*11) For load voltage change, equal to the unit voltage rating, constant input voltage.

 (*12) For 6V ~ 20V model the ripple is measured at 2V ~ rated output voltage and full output current.

 For other models, the ripple is measured at 10 100% output voltage and full output current.
- (#13) At rated output power.
- (*14) If install the front panel filter kit, the temperature is guaranteed to 40°C.

SPECIFICATIONS																	
Model		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Rated output voltage (°1)		٧	6	8	12.5	15	20	30	40	50	60	80	100	150	300	400	600
Rated output current (°2)		A	400	360	240	200	152	100	76	60	50	38	30	20	10	7.6	5.2
Rated output power		w	2400	2880	3000	3000	3040	3000	3040	3000	3000	3040	3000	3000	3000	3040	3120
Constant Voltage Mode	2	PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Line regulation (°3)		mV	0.01% of ra	ned output vo	ltage +2mV												
Load regulation (*4)		mV	0.01% of ra	ned output vo	ltage +5mV												
Ripple and noise (°5)	p-p (°6)	mV	75	75	75	75	75	75	75	75	75	100	100	120	300	300	500
	r.m.s. (°7)	mV	10	10	10	10	10	10	10	10	10	15	15	25	35	35	120
Temperature coefficient	00.00	ppm/°C	100ppm/TC	after a 30 mi	inute warm-up	p					10			0.0			
Temperature stability			0.05% of ra	ted output vo	ltage over 8h	rs interval fol	lowing 30 mi	nutes warm-u	p. Constant	ine, load & te	тр.						
Warm-up drift		5	Less than 0	.05% of rated	output volta	ge +2mV ove	r 30 minutes	following pow	er on.	8 0	4 (9 1		00 2	9.0	>>	71
Remote snese compensation voltage (single wire)		٧	- 1	.1	1	1	1	1.5	2	2	3	4	5	5	5	5	5
Rise time (*8)	No load	ms	80	80	80	80	80	80	80	80	80	150	150	150	150	200	250
Fall time (*9)	Rated load	ms	10	50	50	50	50	80	80	80	80	150	150	150	150	200	250
A 100-10 PRODUCT STORY	No load	ms	500	600	700	700	800	900	1000	1100	1100	1200	1500	2000	2500	3000	4000
Transient response time (*10)		ms	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Constant Current Mode	,	PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Line regulation (*3)		mA	0.05% of ra	ted output cu	rrent												
Load regulation (*11)		mA	0.5% of rate	ed output cur	rent							1% of rated	output currer	nt .			
Load regulation thermal drift			Less than 0	.1% of rated	output curren	t over 30 min	utes followin	ig load change	h	8 8	k 2			50 3	69	20.	95
Ripple and noise (*12)	r.m.s.	mA	850	800	650	590	520	290	185	137	107	85	69	58	30	20	15
Temperature coefficient		ppm/℃			inute warm-u			7							1		
Temperature stability								nutes warm-u									
Warm-up drift	2	22	6-15V mod					utes following		20-600V mod	el : Less than	0.25% rated	output currer		nutes followi	ng power on.	
Protection Function		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Over voltage protection (OVP)	Setting range	V	0.6 - 6.6	0.8-8.8	1.25 - 13.75	1.5 - 16.5	2 - 22	3 - 33	4 - 44	5 - 55	5 - 66	5 - 88	5 - 110	5 - 165	5 - 330	5 - 440	5 - 660
	Setting accuracy	mV	60	80	125	150	200	300	400	500	600	800	1000	1500	3000	4000	6000
Over current protection (OCP)	Setting range	A	5 - 440	5-396	5 - 262	5 - 220	5 - 167.2	5 - 110	5 - 83.6	5 - 66	5 - 55	3.8 - 41.8	3 - 33	2 - 22	1-11	0.76 - 8.36	0.52 - 5.72
	Setting accuracy	A	8	7.2	4.8	4	3.04	2	1.52	1.2	1	0.76	0.6	0.4	0.2	0.152	0.104
Under voltage limit (UVL)	Setting range		0 - 6.3	0 - 8.4	0 - 13.12	0 - 15.75	0 - 21	0 - 31.5	0 - 42	0 - 52.5	0 - 63	0 - 84	0 - 105	0 - 157.5	0 - 315	0 - 420	0 - 630
Over temperature protection (OHP)	Operation		Turn the ou							111							
Incorrect sensing connection protection (SENSE)	Operation		Turn the ou														
Low AC input protection (AC-FAIL)	Operation	3	Turn the ou														
Shutdown (SD)	Operation		Turn the ou	tput off.													
Power limit (POWER LIMIT)	Operation		Over power	limit.													
	Value (fixed)		Approx. 105	5% of rated o	utput power												
Front Panel	5	PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Display, 4 digits Voltage accuracy	0.1% +	mV	12	16	25	30	40	60	80	100	120	160	200	300	600	800	1200
Current accuracy	0.2% +	mA	1200	1080	720	600	456	300	228	180	150	114	90	60	30	22.8	15.6
Indications								, M3, RUN, O		ED LED's: AL	M, ERR						
Buttons			-	1	OT(ALM_CLR), Function (N	11), Test(M2), Set(M3), Sh	ift, Output								
Knobs			Voltage, Cu														
USB port		2011	Type A USB			10.000		*****	28.04	20.20	44.54	** **	*****	154.00		100 0 0	****
Programming and Measurement (RS-232/485, USB		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Output voltage programming accuracy	0.05% +	mV	3	4	6.25	7.5	10	15	20	25	30	40	50	75	150	200	300
Output current programming accuracy	0.2% +	mA	400	360	240	200	152	100	76	60	50	38	30	20	10	7.6	5.2
Output voltage programming resolution		mV.	0.2	0.27	0.4	0.5	0.7	1	1.3	1.7	2	2.7	3.4	5.2	10.2	13.6	20.4
Output current programming resolution		mA	12	12	8	6.6	5	3.4	2.4	2	1.6	1.3	100	0.68	0.38	0.26	0.18
Output voltage measurement accuracy	0.1% +	mV	6	3	12.5	15	20	30	40	50	60	80	100	150	300	400	600
Output current measurement accuracy	0.2% +	mAV	800	720	480	400	304	200	152	120	100	76	60	40	20	15.2	10.4
Output voltage measurement resolution		mV	0.2	0.27	0.4	0.5	0.7	114	1.3	1.7	2	2.7	3.4	5.2	10.2	13.6	20.4
Output current measurement resolution		mA PSU	6-400	12 8-360	12.5-240	15-200	20-152	3.4	2.4	50-60	1.6	1.3	100-30	0.68	0.38 300-10	0.26 400-7.6	0.18 600-5.2
Input Characteristics Norminal input rating		FSU		8-360 W 200V mod		13-200	201132	30-100	40.76	30-60	00/30	00'38	100:30	130-20	300-10	400-7.6	000/3.2
Input voltage range				W 170 ~ 265													
Input frequency range			47Hz - 63H														
Maximum input current	200Vac	A	B type : 22A														
Inrush current	200785				lels Less than	100A											
Power factor	200Vac		0.98 @1 Ph		CO CC35 III all	- www.											
Efficiency (*13)	200786	%	78.5	81	85	85	86	86	87	87	87	87	87	87	87	87	87
Hold-up time		./0	20ms or gre		- 07	35	30	- 30	- Or	- 37	- or	- 37	31	37	91	37	- 01
Interface Capabilities		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
USB								ommunication					100.00	130 25	300 10	100 710	00000
LAN								fress, Instrum			ask						-
RS-232 / RS-485					2D / EIA485 S				THE PARTY								
GPIB (Factory Option)		9			compliant inte							,	7	у.	79	00	
Environmental Conditions		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Operaing temperature	2		0°C~50°C														
Storage temperature			-25 °C ~ 70														
Operating humidity		Ž.		RH; No cons	densation												
Storage humidity			_	less; No con													$\overline{}$
Altitude		7	Maximum 2					0 0 0 0 0 0 0 0 0 0	· //							VV (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	212222222
General Specifications		PSU	6-400	8-360	12.5-240	15-200	20-152	30-100	40-76	50-60	60-50	80-38	100-30	150-20	300-10	400-7.6	600-5.2
Weight	main unit only	kg	Less than 2														
Dimensions	(W×H×D)	mm	423 × 87.2														
Cooling				cooling by inte	ernal fan.												
Withstand voltage						tput termina	:3000Vac/1r	nin; Vout≤15	0V; Output t	erminal to Ch	assis:1000Vd	c/1min; 150	<vout≤600: 0<="" td=""><td>Output termin</td><td>nal to Chassi</td><td>s: 1500Vdc/1</td><td>min</td></vout≤600:>	Output termin	nal to Chassi	s: 1500Vdc/1	min
										or more (DC		, ,, ,,,,	2 - 444	7			
Insulation resistance			Chassis and	d output term	minat, unaporo	arm we migrat	I have the bridge to	or configure period	and the second								

- (*1) Minimum voltage is guaranteed to maximum 0.2% of the rated output voltage.

 (*2) Minimum current is guaranteed to maximum 0.4% of the rated output current.

 (*3) Single phase 200V models: 170 265Vac.

 (*4) From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.

 (*5) Measured at rated output voltage and current with JEITA RC-9131B probe.
- (*6) Measurement frequency bandwidth is 10Hz ~ 20MHz. (*7) Measurement frequency bandwidth is 5Hz - 1MHz.
- (18) From 10% 90% of rated output voltage, with rated resistive load. (°9) From 90% ~ 10% of rated output voltage, with rated resistive load.
- (*10) Time for output voltage to recover within 2% of its rated output for a load change from 50 to 100% of its rated output current. Voltage set point from 10% 100% of rated output.
- (*11) For load voltage change, equal to the unit voltage rating, constant input voltage.

 (*12) For 6V 20V model the ripple is measured at 2V rated output voltage and full output current. For other models, the ripple is measured at 10 100% output voltage and full output current.
- (*13) At rated output power.
- (*14) If install the front panel filter kit, the temperature is guaranteed to 40°C.

SPECIFICATIONS																	
Model		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Rated output voltage (*1)		٧	6	8	12.5	15	20	30	40	50	60	80	100	150	300	400	600
Rated output current (°2)	4	A	600	540	360	300	228	150	114	90	75	57	45	30	15	11.4	7.8
Rated output power		W	3600	4320	4500	4500	4560	4500	4560	4500	4500	4560	4500	4500	4500	4560	4680
Constant Voltage Mode		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Line regulation (°3)		mV	0.01% of ra	ted output vo	ltage +2mV		1,000	,	1 11111111111						7 11 77 77 77 77		
Load regulation (*4)		mV	0.01% of ra	ted output vo	ltage +5mV							375.77					
Ripple and noise (°5)	p-p (°6)	mV	75	. 75	75	75	75	75	75	75	75	100	100	120	300	300	500
	r.m.s. (°7)	mV	10	10	10	10	10	10	10	10	10	15	15	25	35	35	120
Temperature coefficient	2000	ppm/°C	100ppm/°C	after a 30 mi	inute warm-u	р	00						10			100	
Temperature stability			0.05% of ra	ted output vo	ltage over 8h	rs interval fol	lowing 30 mi	nutes warm-u	p. Constant l	ine, load & te	mp.						
Warm-up drift	7		Less than 0.	.05% of rated	output volta	ge +2mV ove	r 30 minutes	following pay	ver on.					9		0 3	
Remote snese compensation voltage (single wire)		٧	1	1	1	1	1	1.5	2	2	3	4.	5	5	5	5	5
Rise time (*8)	No load	ms	80	80	80	80	80	80	80	80	80	150	150	150	150	200	250
Fall time (*9)	Rated load	ms	10	50	50	50	50	80	80	80	80	150	150	150	150	200	250
Access and access and	No load	ms	500	600	700	700	800	900	1000	1100	1100	1200	1500	2000	2500	3000	4000
Transient response time (*10)		ms	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Constant Current Mode		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Line regulation (*3)		mA	0.1% of rate	ed output cur	0.05% of ra	ted output cu	rrent										
Load regulation (*11)		mA	0.5% of rate	ed output cur	rent							1% of rated	output curre	nt			
Load regulation thermal drift			Less than 0	1% of rated	output curren	t over 30 min	utes followin	g load chang	e.								
Ripple and noise (*12)	r.m.s.	mA	1400	1315	1060	987	900	472	275	191	138	110	92	81	30	20	15
Temperature coefficient		ppm/°C			inute warm-u		700		272		7.50		7.2				- 11
Temperature stability		pp.int C			ment over 8h		lowing 30 mi	nutes warm-	p. Constant l	ine, load & te	emp.						-
					0.5% rated o												-
Warm-up drift		60			an 0.25% rate					n.	3	0.0	u a	12		36 ×	
Protection Function		PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Over voltage protection (OVP)	Setting range	٧	0.6 - 6.6	0.8-8.8	1.25 - 13.75	1.5 - 16.5	2 - 22	3 - 33	4 - 44	5 - 55	5 - 66	5 - 88	5 - 110	5 - 165	5 - 330	5 - 440	5 - 660
	Setting accuracy	mV.	60	80	125	150	200	300	400	500	600	800	1000	1500	3000	4000	6000
Over current protection (OCP)	Setting range	A	5 - 660	5-594	5 - 396	5 - 330	5 - 250.8	5 - 165	5 - 125.4	5 - 99	5 - 82.5	5 - 62.7	4.5 - 49.5	3 - 33	1.5 - 16.5	1.14 - 12.54	0.78 - 8.58
	Setting accuracy	A	12	10.8	7.2	6	4.56	3	2.28	1.8	1.5	1.04	0.9	0.6	0.3	0.228	0.156
Under voltage limit (UVL)	Setting range		0 - 6.3	0 - 3.4	0 - 13.12	0 - 15.75	0 - 21	0 - 31.5	0 - 42	0 - 52.5	0 - 63	0 - 84	0 - 105	0 - 157.5	0 - 315	0 - 420	0 - 630
Over temperature protection (OHP)	Operation		Turn the ou	tput off.													
Incorrect sensing connection protection (SENSE)	Operation		Turn the ou	tput off.													
Low AC input protection (AC-FAIL)	Operation		Turn the ou	tput off.													
Shutdown (SD)	Operation		Turn the ou	tout off.													$\overline{}$
Power limit (POWER LIMIT)	Operation		Over power														
Total mine (Covered and Covered and Covere	Value (fixed)			% of rated or	utput power												
Front Panel	Taras (mass)	PSU	6-600	8-540	12.5-360	15-300	20-228	30-150	40-114	50-90	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Display, 4 digits Voltage accuracy	0.1% +	mV	12	16	25	30	40	60	80	100	120	160	200	300	600	800	1200
anahudi a mina					_		_			270	225	171	135	90	45	34.2	23.4
Current accuracy	0.2% +	l mA	1800	1620	1 1080	900	684	450	344								
Current accuracy Indications	0.2% +	mA	GREEN LED	1620 2's: CV, CC, V	1080 A. VSR. ISR	900 DLY, RMT, I	684 LAN, M1, M2	450 M3, RUN, C	342 Subput ON: F		M. ERR			30		37.2	
Current accuracy Indications Buttons	0.2% +	mA	GREEN LED	rs: CV, CC, V	, A, VSR, ISR	DLY, RMT, I	AN, M1, M2	, M3, RUN, C	Output ON; F		.M, ERR			30		37.2	
Indications Buttons	0.2%+	mA	GREEN LED Lock/Local(O's: CV, CC, V (Unlock), PRO		DLY, RMT, I	AN, M1, M2	, M3, RUN, C	Output ON; F		.M, ERR			30		37.2	
Indications Buttons Knobs	0.2%+	mA	GREEN LED Lock/Local(Voltage, Cu	o's: CV, CC, V (Unlock), PRO rrent	, A, VSR, ISR	DLY, RMT, I	AN, M1, M2	, M3, RUN, C	Output ON; F		.M, ERR					37.2	
Indications Buttons Knobs USB port			GREEN LEC Lock/Local(Voltage, Cu Type A USB	D's: CV, CC, V [Unlock], PRO trent connector	/, A, VSR, ISR DT(ALM_CLR	DLY, RMT, I	AN, M1, M2 (1), Test(M2)	, M3, RUN, C j, Set(M3), Sh	output ON; F	ED LED's: Al		80-57	100-45				
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB	, LAN, GPIB)	PSU	GREEN LEC Lock/Local(Voltage, Cu Type A USB 6-600	Vs: CV, CC, V (Unlock), PRC ment connector 8-540	A, VSR, ISR OT(ALM_CLR	, DLY, RMT, I), Function (N	AN, M1, M2 (1), Test(M2) 20-228	, M3, RUN, C), Set{M3}, Sh 30-150	output ON; Fift, Output	ED LED's: Al	60-75	80-57	100-45	150-30	300-15	400-11.4	600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy	I, LAN, GPIB) 0.05% +	PSU mV	GREEN LEC Lock/Local(Voltage, Cu Type A USB 6-600 3	Vs: CV, CC, V (Unlock), PRO rrent connector 8-540 4	7. A, VSR, ISR DT(ALM_CLR 12.5-360 6.25	DLY, RMT, I), Function (N 15-300 7.5	AN, M1, M2 (1), Test(M2) 20-228 10	, M3, RUN, C , Set{M3}, Sh 30-150	output ON; Fift, Output	50-90 25	60-75	40	50	150-30 75	300-15	400-11.4 200	600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy	, LAN, GPIB)	PSU mV mA	GREEN LEE Lock/Local() Voltage, Cu Type A USB 6-600 3 600	P's: CV, CC, V [Unlock], PRC rrent connector 8-540 4 540	7, A, VSR, ISR DT(ALM_CLR 12.5-360 6.25 360	15-300 7.5 300	20-228 10 228	, M3, RUN, C), Set{M3}, Sh 30-150	40-114 20	50-90 25 90	60-75 30 75	40 57	50 45	150-30 75 30	300-15 150 15	400-11.4 200 11.4	600-7.8 300 7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution	I, LAN, GPIB) 0.05% +	PSU mV mA	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-600 3 600 0.2	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27	7, A, VSR, ISR DT(ALM_CLR 12.5-360 6.25 360 0.4	15-300 7.5 300 0.5	20-228 10 228 0.7	, M3, RUN, C 1, Set(M3), Sh 30-150 15 150 1	Autput ON; Fiff, Output 40-114 20 114 1.3	50-90 25 90 1.7	60-75 30 75 2	40 57 2.7	50 45 3.4	150-30 75 30 5.2	300-15 150 15 10.2	400-11.4 200 11.4 13.6	600-7.8 300 7.8 20.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution	0.2% +	PSU mV mA mV	GREEN LEE Lock/Local(Voltage, Cu Type A USB 6-600 3 600 0.2 18	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27	12.5-360 6.25 360 0.4	15-300 7.5 300 0.5 9.9	20-228 10 228 0.7 7.5	, M3, RUN, C , Set(M3), Sh 30-150 15 150 1 5.1	40-114 20 114 1.3 3.6	50-90 25 90 1.7	60-75 30 75 2 2.4	40 57 2.7 1.95	50 45 3.4 1.5	150-30 75 30 5.2 1.02	300-15 150 15 10.2 0.57	400-11.4 200 11.4 13.6 0.39	600-7.8 300 7.8 20.4 0.27
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy	0.05% + 0.2% +	PSU mV mA mV mA	GREEN LEG Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18	12.5-360 6.25 360 0.4 12.5	15-300 7.5 300 0.5 9.9	20-228 10 228 0.7 7.5 20	, M3, RUN, C , Set(M3), Sh 30-150 15 150 1 5.1 30	40-114 20 114 1.3 3.6 40	50-90 25 90 1.7 3	60-75 30 75 2 2.4 60	40 57 2.7 1.95 80	50 45 3.4 1.5 100	150-30 75 30 5.2 1.02	300-15 150 15 10.2 0.57 300	400-11.4 200 11.4 13.6 0.39 400	600-7.8 300 7.8 20.4 0.27 600
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy	0.2% +	PSU mV mA mV mA	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6	7's: CV, CC, V (Unlock), PRC rent connector 8-540 4 540 0.27 18 8	12.5-360 6.25 360 0.4 12 12.5 720	15-300 7.5 300 0.5 9.9 15 600	20-228 10 228 0.7 7.5 20 456	, M3, RUN, C , Set(M3), Sh 30-150 15 150 1 5.1	40-114 20 114 1.3 3.6 40 228	50-90 25 90 1.7 3 50	60-75 30 75 2 2.4 60	40 57 2.7 1.95 80 114	50 45 3.4 1.5 100 90	150-30 75 30 5.2 1.02 150 60	300-15 150 15 10.2 0.57 300 30	400-11.4 200 11.4 13.6 0.39 400 22.8	600-7.8 300 7.8 20.4 0.27 600 15.6
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution	0.05% + 0.2% +	PSU mV mA mV mA mV	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2	7's: CV, CC, V (Unlock), PRC rent connector 8-540 4 540 0.27 18 8 1080 0.27	12.5-360 6.25 360 0.4 12 12.5 720 0.4	15-300 7.5 300 0.5 9.9 15 600 0.5	20-228 10 228 0.7 7.5 20 456 0.7	30-150 15 150 1 5.1 30 300 1	40-114 20 114 1.3 3.6 40 228 1.3	50-90 25 90 1.7 3 50 180	60-75 30 75 2 2.4 60 150 2	40 57 2.7 1.95 80 114 2.7	50 45 3.4 1.5 100 90 3.4	150-30 75 30 5.2 1.02 150 60 5.2	300-15 150 15 10.2 0.57 300 30 10.2	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution	0.05% + 0.2% +	PSU mV mA mV mA mV mA	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18	12.5-360 6.25 360 0.4 12 12.5 720 0.4 12	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9	20-228 10 228 0.7 7.5 20 456 0.7 7.5	30-150 15 150 1 30-300 1 5.1 300 1 5.1	40-114 20 114 1.3 3.6 40 228 1.3 3.6	50-90 25 90 1.7 3 50 180 1.7 3	60-75 30 75 2 2.4 60 150 2	40 57 2.7 1.95 80 114 2.7 1.95	50 45 3.4 1.5 100 90 3.4 1.5	150-30 75 30 5.2 1.02 150 60 5.2 1.02	300-15 150 15 10.2 0.57 300 30 10.2 0.57	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics	0.05% + 0.2% +	PSU mV mA mV mA mV	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8	12.5-360 6.25 360 0.4 12 12.5 720 0.4 12 12.5-360	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228	30-150 15 15 15 15 10 30 300 1 5.1 30-150	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114	50-90 25 90 1.7 3 50 180	60-75 30 75 2 2.4 60 150 2	40 57 2.7 1.95 80 114 2.7	50 45 3.4 1.5 100 90 3.4	150-30 75 30 5.2 1.02 150 60 5.2	300-15 150 15 10.2 0.57 300 30 10.2	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating	0.05% + 0.2% +	PSU mV mA mV mA mV mA	GREEN LEE Lock/Local(Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8 8-540 W 200V mod	12.5-360 6.25 360 0.4 12 12.5-720 0.4 12 12.5-760 els, C type : 3	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type	30-150 15 150 1 30 300 1 300 300 1 30-150 304W 400V	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models	50-90 25 90 1.7 3 50 180 1.7 3	60-75 30 75 2 2.4 60 150 2	40 57 2.7 1.95 80 114 2.7 1.95	50 45 3.4 1.5 100 90 3.4 1.5	150-30 75 30 5.2 1.02 150 60 5.2 1.02	300-15 150 15 10.2 0.57 300 30 10.2 0.57	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming resolution Output current programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range	0.05% + 0.2% +	PSU mV mA mV mA mV mA	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type : 1P2 B type : 1P2	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod	12.5-360 6.25 360 0.4 12 12.5 720 0.4 12 12.5-360	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type	30-150 15 150 1 30 300 1 300 300 1 30-150 304W 400V	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models	50-90 25 90 1.7 3 50 180 1.7 3	60-75 30 75 2 2.4 60 150 2	40 57 2.7 1.95 80 114 2.7 1.95	50 45 3.4 1.5 100 90 3.4 1.5	150-30 75 30 5.2 1.02 150 60 5.2 1.02	300-15 150 15 10.2 0.57 300 30 10.2 0.57	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming resolution Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA mV	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type : 1P2 47Hz ~ 63H	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 170 – 265'dz	12.5-360 6.25 360 0.4 12 12.5 720 0.4 12 12.5 720 0.4 12 12.5-360 lels, C type : 3	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type	30-150 15 150 1 30 300 1 300 300 1 30-150 304W 400V	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models	50-90 25 90 1.7 3 50 180 1.7 3	60-75 30 75 2 2.4 60 150 2	40 57 2.7 1.95 80 114 2.7 1.95	50 45 3.4 1.5 100 90 3.4 1.5	150-30 75 30 5.2 1.02 150 60 5.2 1.02	300-15 150 15 10.2 0.57 300 30 10.2 0.57	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current	0.05% + 0.2% +	PSU mV mA mV mA mV mA	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 33A	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' Iz	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type : 3	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m P3W 200V m	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20 456 0.7 7.5 20 type 53Vac, D type	30-150 15 15 150 1 5.1 30 300 1 5.1 30-150 : 3P4W 400V e : 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac	50-90 25 90 1.7 3 50 180 1.7 3 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02	300-15 150 15 10.2 0.57 300 30 10.2 0.57	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA mV	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H B type: 33A B type: 1P2	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' kz • C type : 19 W 200V mod	12.5-360 6.25 360 0.4 12 12.5-720 0.4 12 12.5-360 els, C type : 3 Vac, C type : 3	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20 456 0.7 7.5 20 type 53Vac, D type : 3P3W 2000	30-150 15 15 150 1 5.1 30 300 1 5.1 30-150 : 3P4W 400V e : 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac	50-90 25 90 1.7 3 50 180 1.7 3 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02	300-15 150 15 10.2 0.57 300 30 10.2 0.57	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 B type: 1P2 47Hz ~ 63H B type: 33A B type: 1P2 0.98 @1 Ph	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265	12.5-360 6.25 360 0.4 12 12.5-720 0.4 12 12.5-360 lels, C type : 3 Vac, C type : 3 Vac, C type : 3	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type : 3P3W 2000	30-150 15 150 15 150 300 300 1 5.1 30-150 : 3P4W 400V e : 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac	50-90 25 90 1.7 3 50 180 1.7 3 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13)	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA mV	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 B type: 1P2 47Hz ~ 63H B type: 1P2 0.98 @1 Ph 78.5	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265 iz C type: 19 W 200V mod ase 200Vac / 81	12.5-360 6.25 360 0.4 12 12.5-720 0.4 12 12.5-360 els, C type : 3 Vac, C type : 3	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20 456 0.7 7.5 20 type 53Vac, D type : 3P3W 2000	30-150 15 15 150 1 5.1 30 300 1 5.1 30-150 : 3P4W 400V e : 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac	50-90 25 90 1.7 3 50 180 1.7 3 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02	300-15 150 15 10.2 0.57 300 30 10.2 0.57	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time	0.05% + 0.2% + 0.1% + 0.2% +	PSU mY mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H B type: 33A B type: 33A B type: 1P2 0.98 @1 Ph 78.5 20ms or gre	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz - C type : 19 W 200V mod ase 200Vac / 81 eater	12.5-360 6.25 360 0.4 12 12.5 720 0.4 12 12.5-360 lels, C type : 3 Vac, C type : 3 Vac, C type : 3	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m P3W 180 – 2 A 150A; C type ase 200/400V	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 53Vac, D type (ac	30-150 15 150 1 30 300 1 5.1 300 1 5.1 30-150 304W 400V e: 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac	50-90 25 90 1.7 3 50 180 1.7 3 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H B type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-600	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265'iz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.8 12 12.5-360 0.9 85 4 - D type 11 lels Less than 0.95 @ 3 Ph. 85	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m P3W 180 – 2 A 150A; C type ase 200/400V 85	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 13 P3W 2000 2ac 86	30-150 15 150 15 150 1 300 300 1 5.1 30-150 39-150 39-150 7 model Less	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D	50-90 25 90 1.7 3 50 180 1.7 3 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB	0.05% + 0.2% + 0.1% + 0.2% +	PSU mY mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-600 TypeA: Hos	Vs. CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' dz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, TypeB: Sla	12.5-360 12.5-360 12.5-360 0.4 12 12.5 720 0.4 12 12.5-360 12.5-360 12.5-360 12.5-360 13.5-360 14.5 15.5-360 15.5-360 17.5-360 18.5 18.5-360 19.5 19.5-360	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m P3W 180 – 2 A 150A; C type ase 200/400V 85	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 53Vac, D type 286 292 886	30-150 15 150 15 150 1 300 300 1 5.1 30-150 300-150 304W 400V e: 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output voltage programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN	0.05% + 0.2% + 0.1% + 0.2% +	PSU mY mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 B type: 1P2 47Hz ~ 63H B type: 1P2 0.98 g01 Ph 78.5 20ms or gree 6-600 TypeA: Hos MAC Addre	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' Iz C type: 19 W 200V mod ase 200Vac / 81 ster 8-540 t, TypeB: Slar ss, DNS IP A	12.5-360 12.5-360 0.4 12 12.5 720 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.5 20.4 20.5 20.4 20.5 20.4 20.5 20.4 20.5 20.4 20.5 20.4 20.5 20.6 20.6 20.6 20.6 20.6 20.6 20.6 20.6	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 [7.0, USB Ck Password, Gr	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 13 3P3W 2000 26 28 20-228 ass: CDC(Co	30-150 15 150 15 150 1 300 300 1 5.1 30-150 300-150 304W 400V e: 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485	0.05% + 0.2% + 0.1% + 0.2% +	PSU mY mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' dz C type : 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8 : Sla sst, DNS IP A (th the EIA23	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 1/2.0, USB Ck Password, Gi	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 13 3P3W 2000 26 28 20-228 ass: CDC(Co	30-150 15 150 15 150 1 300 300 1 5.1 30-150 300-150 304W 400V e: 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option)	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H B type: 192 47Hz ~ 63H B type: 192 0.98 @1 Ph 78.5 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' kz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8: Sla ss, DNS IP A (th the EIA23	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V ms P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 72.0, USB Ck Password, Gr	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 393W 2000 ac 86 20-228 ass : CDC (Co	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30 300 1 5.1 30-150 3P4W 400V e: 3P4W 360 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Clarent IP Addre	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90 ss, Subnet M	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions	0.05% + 0.2% + 0.1% + 0.2% +	PSU mY mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 0.98 @1 Ph 78.5 20ms or gve 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8: Sla ss, DNS IP A ith the EIA23 , IEEE 488.2 c 8-540	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 1/2.0, USB Ck Password, Gi	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 13 3P3W 2000 26 28 20-228 ass: CDC(Co	30-150 15 150 15 150 1 300 300 1 5.1 30-150 300-150 304W 400V e: 3P4W 360	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87	60-75 30 75 2 2.4 60 150 2 2.4 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option)	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H B type: 192 47Hz ~ 63H B type: 192 0.98 @1 Ph 78.5 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8: Sla ss, DNS IP A ith the EIA23 , IEEE 488.2 c 8-540	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V ms P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 72.0, USB Ck Password, Gr	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 393W 2000 ac 86 20-228 ass : CDC (Co	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30 300 1 5.1 30-150 3P4W 400V e: 3P4W 360 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Clarent IP Addre	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90 ss, Subnet M	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 0.98 @1 Ph 78.5 20ms or gve 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type : 19 W 200V mod ase 200Vac / 81 sater 8-540 t, TypeB : Slater ss, DNS IP A (th the EIA23 s, IEEE 488.2 (8-540 (*14)	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V ms P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 72.0, USB Ck Password, Gr	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 393W 2000 ac 86 20-228 ass : CDC (Co	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30 300 1 5.1 30-150 3P4W 400V e: 3P4W 360 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Clarent IP Addre	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90 ss, Subnet M	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operaing temperature	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 33A 8 type: 1P2 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 "C ~ S0 "C -25 "C - 70"	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type : 19 W 200V mod ase 200Vac / 81 sater 8-540 t, TypeB : Slater ss, DNS IP A (th the EIA23 s, IEEE 488.2 (8-540 (*14)	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.5 12.5-360 0.7 12 12 12.5-360 0.8 12.5-360 0.9 12.5-360 0.9 12.5-360 0.9 12.5-360 0.9 12.5-360 0.9 12.5-360 0.9 12.5-360 0.9 12.5-360	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V ms P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 72.0, USB Ck Password, Gr	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 393W 2000 ac 86 20-228 ass : CDC (Co	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30 300 1 5.1 30-150 3P4W 400V e: 3P4W 360 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Clarent IP Addre	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90 ss, Subnet M	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating humidity Storage humidity	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 ° C ~ 50 ° C -25 ° C ~ 70° 20% RH or	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8: Sla ss, DNS IP A (th the EIA23 the EIA23 the EEE 488.2 of RH; No concless; No	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V ms P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 72.0, USB Ck Password, Gr	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 393W 2000 ac 86 20-228 ass : CDC (Co	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30 300 1 5.1 30-150 3P4W 400V e: 3P4W 360 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Clarent IP Addre	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90 ss, Subnet M	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operaing temperature Storage temperature Operating humidity	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6-1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 0.98 g0 Ph 78.5 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 °C ~ 50 °C - 25 °C ~ 70° 20% ~ 85%	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8: Sla ss, DNS IP A (th the EIA23 the EIA23 the EEE 488.2 of RH; No concless; No	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V ms P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 72.0, USB Ck Password, Gr	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 393W 2000 ac 86 20-228 ass : CDC (Co	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30 300 1 5.1 30-150 3P4W 400V e: 3P4W 360 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Clarent IP Addre	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90 ss, Subnet M	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating humidity Storage humidity	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 ° C ~ 50 ° C -25 ° C ~ 70° 20% RH or	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8: Sla ss, DNS IP A (th the EIA23 the EIA23 the EEE 488.2 of RH; No concless; No	12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V ms P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 72.0, USB Ck Password, Gr	20-228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 393W 2000 ac 86 20-228 ass : CDC (Co	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30 300 1 5.1 30-150 3P4W 400V e: 3P4W 360 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Clarent IP Addre	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90 ss, Subnet M	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output voltage programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating humidity Storage temperature Operating humidity Storage humidity Altitude	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU PSU	GREEN LEC Lock/Local(Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 27Hz ~ 63H 8 type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 ° C ~ 50 ° C -25 ° C ~ 70 ° 20% ~ 85% 90% RH or Maximum 2	Vs. CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' kz C type : 19 W 200V mod ase 200Vac / 81 aster 8-540 t, Type8 : Sla aster 8-540 (*14) C RH; No cond (*14) C RH; No cond (*000m) 8-540	12.5-360 12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type : 3 Vac	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 1/2.0, USB Ck Password, Gr Specifications erface 15-300	20-228 10 228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 13 3P3W 2000 (ac 86 20-228 ass: CDC (Co abteway IP Add 6	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30-150 30-150 30-150 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Classent IP Addres 40-114	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57 Less than 50 87 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30 87	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input roltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operaing temperature Storage temperature Storage temperature Operating humidity Storage humidity Altitude General Specifications	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU PSU PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 27Hz ~ 63H 8 type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 ° C ~ 50 ° C -25 ° C ~ 70 ° 20% ~ 85% 90% RH or Maximum 2 6-600	Vs. CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265V kz C type : 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8 : Sla ss, DNS IP A (th the EIA23 , IEEE 488.2 o 8-540 (*14) C RH; No conv less; No conv le	12.5-360 12.5-360 6.25 360 0.4 12 12.5-360 0.4 12 12.5-360 0.4 12 12.5-360 els, C type : 3 Vac, C type : 3 Vac	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 1/2.0, USB Ck Password, Gr Specifications erface 15-300	20-228 10 228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 13 3P3W 2000 (ac 86 20-228 ass: CDC (Co abteway IP Add 6	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30-150 30-150 30-150 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Classent IP Addres 40-114	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57 Less than 50 87 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30 87	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating temperature Storage temperature Storage temperature Operating humidity Storage humidity Altitude General Specifications Weight	0.05% + 0.2% + 0.1% + 0.2% + 200Vac / 400Vac 200Vac / 400Vac	PSU mV mA mV mA mV mA PSU PSU PSU PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H B type: 192 47Hz ~ 63H B type: 192 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 "C ~ 50"C -25 "C ~ 70" 20% ~ 85% 90% RH or Maximum 2 423 × 130.8	Vs. CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265V kz C type : 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8 : Sla ss, DNS IP A (th the EIA23 , IEEE 488.2 o 8-540 (*14) C RH; No conv less; No conv le	12.5-360 12.5-360 6.25 360 0.4 12 12.5 720 0.4 12 12.5-360 els, C type : 3 Vac, C type : 3 Vac	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m 3P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 1/2.0, USB Ck Password, Gr Specifications erface 15-300	20-228 10 228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 13 3P3W 2000 (ac 86 20-228 ass: CDC (Co abteway IP Add 6	, M3, RUN, C , Set(M3), Sh 30-150 15 15 10 30 300 1 5.1 30-150 30-150 30-150 / model Less 86 30-150 mmunication fress, Instrum	40-114 20 114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Classent IP Addres 40-114	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57 Less than 50 87 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30 87	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming resolution Output current programming resolution Output voltage programming resolution Output voltage measurement accuracy Output voltage measurement accuracy Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operaing temperature Storage temperature Storage temperature Operating humidity Storage humidity Altitude General Specifications Weight Dimensions	0.05% + 0.2% + 0.1% + 0.2% + 200Vac / 400Vac 200Vac / 400Vac	PSU mV mA mV mA mV mA PSU PSU PSU PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 B type: 1P2 47Hz ~ 63H B type: 1P2 47Hz ~ 63H B type: 1P2 20ms or gve 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 "C ~ 50 "C -25 "C - 70" 20% - 85% 90% RH or Maximum 2 423 × 130.8 Forced air of	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8: Sla ss, DNS IP A ith the EIA23 , IEEE 488.2 c 8-540 (*14) C RH; No conc less; No	12.5-360 12.5-360 6.25 360 0.4 12 12.5 720 0.4 12 12.5-360 lels, C type : 3 Vac, C type : 3 Va	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 15-300 15-300 15-300	20-228 10 228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 53Vac, D type 20-228 20-228 20-228 20-228	30-150 15 150 1 15 150 1 15 150 1 15 150 1 15 150 1 15 150 1 150 1 15 150 1 1 150 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 150 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models - 440Vac than 100A; D 87 40-114 s Device Clarent IP Addre	50-90 25 90 1.7 3 50 180 1.7 3 50-90 type: 3P4W 87 50-90 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57 Less than 50 87 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30 87 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8 87 600-7.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output voltage measurement accuracy Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating temperature Storage temperature Storage temperature Operating humidity Storage humidity Altitude General Specifications Weight Dimensions Cooling	0.05% + 0.2% + 0.1% + 0.2% + 200Vac / 400Vac 200Vac / 400Vac	PSU mV mA mV mA mV mA PSU PSU PSU PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-600 3 600 0.2 18 6 1200 0.2 18 6-600 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 47Hz ~ 63H 8 type: 1P2 20ms or gre 6-600 TypeA: Hos MAC Addre Complies w SCPI - 1993 6-600 0 "C ~ 50 "C -25 "C - 70" 20% - 85% 90% RH or Maximum 2 423 × 130.8 Forced air of AC to Chase	7's: CV, CC, V (Unlock), PRC ment connector 8-540 4 540 0.27 18 8 1080 0.27 18 8-540 W 200V mod W 170 – 265' iz C type: 19 W 200V mod ase 200Vac / 81 sater 8-540 t, Type8: Sla ss, DNS IP A ith the EIA23 t, IEEE 488.2 c 8-540 (*14) C RH; No conc less;	12.5-360 12.5-360 6.25 360 0.4 12 12.5 720 0.4 12 12.5-360 lels, C type : 3 Vac, C type : 3 Va	15-300 7.5 300 0.5 9.9 15 600 0.5 9.9 15-300 P3W 200V m P3W 180 – 2 A 150A; C type ase 200/400V 85 15-300 15-300 15-300 Output termi	20-228 10 228 10 228 0.7 7.5 20 456 0.7 7.5 20-228 odels, D type 53Vac, D type 53Vac, D type 20-228 20-228 20-228 20-228	30-150 15 150 1 15	Autput ON; Fift, Output 40-114 20 114 1.3 3.6 40 228 1.3 3.6 40-114 models 40-114 s Device Clarent IP Addre 40-114	50-90 25 90 1.7 3 50 180 1.7 3 50-90 1type: 3P4W 87 50-90 50-90 50-90	60-75 30 75 2 2.4 60 150 2 2.4 60-75 400V model 87 60-75 60-75	40 57 2.7 1.95 80 114 2.7 1.95 80-57 Less than 50 87 80-57	50 45 3.4 1.5 100 90 3.4 1.5 100-45	150-30 75 30 5.2 1.02 150 60 5.2 1.02 150-30 87 150-30	300-15 150 15 10.2 0.57 300 30 10.2 0.57 300-15	400-11.4 200 11.4 13.6 0.39 400 22.8 13.6 0.39 400-11.4	600-7.8 300 7.8 20.4 0.27 600 15.6 20.4 0.27 600-7.8 87 600-7.8

- (%1) Minimum voltage is guaranteed to maximum 0.2% of the rated output voltage.
- (*2) Minimum current is guaranteed to maximum 0.4% of the rated output current.
- (*3) Single phase 200V models: 170-265Vac. Three phase 200V models: 180-253Vac. Three phase 400V models: 360-440Vac.
- (*4) From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.

 (*5) Measured at rated output voltage and current with JEITA RC-9131B probe

 (*6) Measurement frequency bandwidth is 10Hz ~ 20MHz.

 (*7) Measurement frequency bandwidth is 5Hz 1MHz.

 (*8) From 10% 90% of rated output voltage, with rated resistive load.

- (°9) From 90% ~ 10% of rated output voltage, with rated resistive load.
- (*10) Time for output voltage to recover within 2% of its rated output for a load change from 50 100% of its rated output current. Voltage set point from 10% 100% of rated output.
- (*11) For load voltage change, equal to the unit voltage rating, constant input voltage.

 (*12) For 6V ~ 20V model the ripple is measured at 2V ~ rated output voltage and full output current. For other models, the ripple is measured at 10 ~ 100% output voltage and full output current.

 (*13) Single phase and three phase 200V models: at 200Vac input voltage. Three phase 400V models: at 400Vac input voltage. At rated output power.
- (*14) If install the front panel filter kit, the temperature is guaranteed to 40°C.

SPECIFICATIONS																	
Model		PSU	6-800	8-720	12.5-480	15-400	20-304	30-200	40-152	50-120	60-100	80-76	100-60	150-40	300-20	400-15.2	600-10.4
Rated output voltage (°1)		٧	6	8	12.5	15	20	30	40	50	60	80	100	150	300	400	600
Rated output current (°2)		Α	800	720	480	400	304	200	152	120	100	76	60	40	20	15.2	10.4
Rated output power		W	4800	5760	6000	6000	6080	6000	6080	6000	6000	6080	6000	6000	6000	6080	6240
Constant Voltage Mode		PSU	6-800	8-720	12.5-480	15-400	20-304	30-200	40-152	50-120	60-100	80-76	100-60	150-40	300-20	400-15.2	600-10.4
Line regulation (*3)		mV	0.01% of rat	ted output vo	ltage +2mV												
Load regulation (°4)		mV	0.01% of rat	ted output vo	ltage +5mV												
Ripple and noise (°5)	p-p (°6)	mV	75	75	75	75	75	75	75	75	75	100	100	120	300	300	500
	r.m.s. (+7)	mV .	10	10	10	10	10	10	10	10	10	15	15	25	35	35	120
Temperature coefficient	11 10000	ppm/℃			inute warm-u			0 10	3	1	7		1		1.5	60	
Temperature stability							-		-	ine, load & te	mp.						
Warm-up drift			Less than 0.	05% of rated	output volta	ge +2mV ove	r 30 minutes	following pov	_								
Remote snese compensation voltage (single wire)		V	1	-1	1.	1	1	1.5	2	2	3	4	5	5	5	5	5
Rise time (*8)	No load	ms	80	80	80	80	80	80	80	80	80	150	150	150	150	200	250
Fall time (*9)	Rated load	ms	10	50	50	50	50	80	80	80	80	150	150	150	150	200	250
	No load	ms	500	600	700	700	800	900	1000	1100	1100	1200	1500	2000	2500	3000	4000
Transient response time (*10)		ms	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Constant Current Mode		PSU	6-800	8-720	12.5-480	15-400	20-304	30-200	40-152	50-120	60-100	80-76	100-60	150-40	300-20	400-15.2	600-10.4
Line regulation (°3)	3	mA		d output cur			0.05% of ra	ned output cu	ment								
Load regulation (*11)	-	mA .		d output cur								1% of rated	output currer	nt			
Load regulation thermal drift						_		g load chang									
Ripple and noise (*12)	r.m.s.	mA	2000	1900	1500	1390	1250	650	365	245	170	140	116	104	30	20	15
Temperature coefficient		ppm/℃			inute warm-u								**				
Temperature stability	_									ine, load & te	mp.						
Warm-up drift								utes following minutes follo									
Protection Function		PSU	6-800	8-720	12.5-480	15-400	20-304	30-200	40-152	50-120	60-100	80-76	100-60	150-40	300-20	400-15.2	600-10.4
Over voltage protection (OVP)	Setting range	V	0.6 - 6.6	0.8 -8.8	1.25 - 13.75	1.5 - 16.5	2 - 22	3 - 33	4-44	5 - 55	5 - 66	5 - 88	5 - 110	5 - 165	5 - 330	5 - 440	5 - 660
STO TOMBE PROTECTION (O'TT)	Setting accuracy	mV	60	80	125	150	200	300	400	500	600	800	1000	1500	3000	4000	6000
Over current protection (OCP)	Setting range	Α.	5 - 880	5 -792	5 - 528	5 - 440	5 - 334.4	5 - 220	5 - 167.2	5 - 132	5 - 110	5 - 83.6	5 - 66	4 - 44	2 - 22	1.52 - 16.72	
	Setting accuracy	Ā	16	14,4	9,6	8	6.08	4	3.04	2.4	2	1.52	1.2	0.8	0.4	0.304	0.208
Under voltage limit (UVL)	Setting range		0-63	0-8.4	0 - 13.12	0 - 15.75	0 - 21	0 - 31.5	0 - 42	0 - 52.5	0 - 63	0 - 84	0 - 105	0 - 157.5	0.315	0 - 420	0 - 630
Over temperature protection (OHP)	Operation		Turn the ou	4 411	3-12.12	3-19/73	4.1	0.313	4.44	3-323	0-00	0.04	0-100	0-197.3	- 313	0-420	4-000
Incorrect sensing connection protection (SENSE)	Operation		Turn the ou														
Low AC input protection (AC-FAIL)	Operation		Turn the ou	-													-
Shutdown (SD)	Operation		Turn the ou	•													
Power limit (POWER LIMIT)	Operation		Over power														
Total mini (o wait amin)	Value (fixed)			% of rated o	utput power												-
Front Panel	is the same of the	PSU	6-800	8-720	12.5-480	15-400	20-304	30-200	40-152	50-120	60-100	80-76	100-60	150-40	300-20	400-15.2	600-10.4
Display, 4 digits Voltage accuracy	0.1% +	mV	12	16	25	30	40	60	80	100	120	160	200	300	600	800	1200
Current accuracy	0.2% +	mA	2400	2160	1440	1200	912	600	456	360	300	228	180	120	60	45.6	31.2
Current accuracy Indications	0.2% +	mA								360 RED LED's: AL		228	180	120	60	45.6	31.2
	0.2% +	mA	GREEN LED	7's: CV, CC, V	, A, VSR, ISR	DLY, RMT,	LAN, M1, M2		Output ON; F			228	180	120	60	45.6	31.2
Indications	0.2% +	mA	GREEN LED	Ys: CV, CC, V Unlock), PRO	, A, VSR, ISR	DLY, RMT,	LAN, M1, M2	, M3, RUN, C	Output ON; F			228	180	120	60	45.6	31.2
Indications Buttons	0.2% +	mA	GREEN LED Lock/Local(Ys: CV, CC, V Unlock), PRO rrent	, A, VSR, ISR	DLY, RMT,	LAN, M1, M2	, M3, RUN, C	Output ON; F			228	180	120	60	45.6	31.2
Indications Buttons Knobs		mA PSU	GREEN LED Lock/Local(Voltage, Cur	Ys: CV, CC, V Unlock), PRO rrent	, A, VSR, ISR	DLY, RMT,	LAN, M1, M2	, M3, RUN, C	Output ON; F			228 80-76	180	120	300-20	45.6	31.2 600-10.4
Indications Buttons Knobs USB port		/	GREEN LED Lock/Local(Voltage, Cu Type A USB	Vs: CV, CC, V Unlock), PRO ment connector	, A, VSR, ISR DT(ALM_CLR	DLY, RMT,), Function (N	LAN, M1, M2 M1), Test(M2)	, M3, RUN, C), Set(M3), Sh	Output ON: F	RED LED's: AL	M, ERR						
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB.	, LAN, GPIB)	PSU	GREEN LED Lock/Local(Voltage, Cur Type A USB 6-800	Ys: CV, CC, V Unlock], PRO rrent connector 8-720	, A, VSR, ISR DT(ALM_CLR	, DLY, RMT,), Function(N	LAN, M1, M2 41), Test(M2) 20-304	, M3, RUN, C), Set(M3), Sh 30-200	Output ON; Firiff, Output	SO-120	M, ERR 60-100	80-76	100-60	150-40	300-20	400-15.2	600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy	, LAN, GPIB) 0.05% +	PSU mV	GREEN LED Lock/Local(Voltage, Cur Type A USB 6-800 3	Ys: CV, CC, V Unlock), PROment connector 8-720	7, A, VSR, ISR DT(ALM_CLR 12.5-480 6.25	DLY, RMT,), Function(N 15-400 7.5	20-304	, M3, RUN, C), Set(M3), Sh 30-200	Output ON; F nift, Output 40-152 20	50-120 25	M, ERR 60-100 30	80-76 40	100-60 50	150-40 75	300-20 150	400-15.2 200	600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy	, LAN, GPIB) 0.05% +	PSU mV mA	GREEN LED Lock/Local(Voltage, Cu Type A USB 6-800 3 800	Vs: CV, CC, V Unlock), PRO ment connector 8-720 4 720	12.5-480 6.25 480	15-400 7.5 400	20-304 10 304	, M3, RUN, C), Set(M3), Sh 30-200	40-152 20 152	50-120 25 120	60-100 30 100	80-76 40 76	100-60 50 60	150-40 75 40	300-20 150 20	400-15.2 200 15.2	600-10.4 300 10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution	, LAN, GPIB) 0.05% + 0.2% +	PSU mV mA	GREEN LEC Lock/Local(Voltage, Cu Type A USB 6-800 3 800 0.2 24 6	7's: CV, CC, V Unlock), PRC rrent connector 8-720 4 720 0.27 24 3	12.5-480 6.25 480 0.4 16 12.5	15-400 7.5 400 0.5 13.2	20-304 10 304 0.7 10 20	30-200 15 200 1 6.8 30	40-152 20 152 1.3 4.8 40	50-120 25 120 1.7 4	60-100 30 100 2 3.2 60	80-76 40 76 2.7 2.6 80	100-60 50 60 3.4 2	150-40 75 40 5.2 1.36	300-20 150 20 10.2 0.76 300	400-15.2 200 15.2 13.6 0.52	600-10.4 300 10.4 20.4 0.36 600
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy	, LAN, GPIB) 0.05% + 0.2% +	PSU mV mA mV mA	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600	7's: CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 3 1440	12.5-480 6.25 480 0.4 16 12.5 960	15-400 7.5 400 0.5 13.2 15 800	20-304 10 304 0.7 10 20 608	30-200 15 200 1 6.8	40-152 20 152 1.3 4.8 40 304	50-120 25 120 1.7 4 50 240	60-100 30 100 2 3.2 60 200	80-76 40 76 2.7 2.6 80 152	100-60 50 60 3.4 2 100	150-40 75 40 5.2 1.36 150 80	300-20 150 20 10.2 0.76 300 40	400-15.2 200 15.2 13.6 0.52 400 30.4	600-10.4 300 10.4 20.4 0.36 600 20.8
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution	, LAN, GPIB) 0.05% + 0.2% +	PSU mV mA mV mA mV	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2	7's: CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8 1440 0.27	12.5-480 6.25 480 0.4 16 12.5 960 0.4	15-400 7.5 400 0.5 13.2 15 800 0.5	20-304 10 304 0.7 10 20 608 0.7	30-200 15 200 1 6.8 30 400	40-152 20 152 1.3 4.8 40 304 1.3	50-120 25 120 1.7 4 50 240	60-100 30 100 2 3.2 60 200 2	80-76 40 76 2.7 2.6 30 152 2.7	100-60 50 60 3.4 2 100 120 3.4	150-40 75 40 5.2 1.36 150 80 5.2	300-20 150 20 10.2 0.76 300 40	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement accuracy Output current measurement resolution Output current measurement resolution	, LAN, GPIB) 0.05% + 0.2% +	PSU mV mA mV mA mV mA mV mA	GREEN LEC Lock/Local(Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24	7's: CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8 1440 0.27 24	12.5-480 6.25 480 0.4 16 12.5 960 0.4 16	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2	20-304 10 304 0.7 10 20 608 0.7 10	30-200 15 200 1 6.8 30 400 1 6.8	40-152 20 152 1.3 4.8 40 304 1.3 4.8	50-120 25 120 1.7 4 50 240 1.7	60-100 30 100 2 3.2 60 200 2	80-76 40 76 2.7 2.6 30 152 2.7 2.6	100-60 50 60 3.4 2 100 120 3.4 2	150-40 75 40 5.2 1.36 150 80 5.2 1.36	300-20 150 20 10.2 0.76 300 40 10.2 0.76	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics	, LAN, GPIB) 0.05% + 0.2% +	PSU mV mA mV mA mV	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800	7's: CV, CC, V Unlock), PRO rent connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720	12.5-480 6.25 480 0.4 16 12.5 960 0.4 16 12.5	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400	20-304 10 304 0.7 10 20 608 0.7 10 20 608	30-200 15 200 1 6.8 30 400 1 6.8 30-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152	50-120 25 120 1.7 4 50 240	60-100 30 100 2 3.2 60 200 2	80-76 40 76 2.7 2.6 30 152 2.7	100-60 50 60 3.4 2 100 120 3.4	150-40 75 40 5.2 1.36 150 80 5.2	300-20 150 20 10.2 0.76 300 40	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating	, LAN, GPIB) 0.05% + 0.2% +	PSU mV mA mV mA mV mA mV mA	GREEN LEC Lock/Local(Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 8 bype: 1P2	7s: CV, CC, V Unlock), PRO ment connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod	12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-980 els, C type : 3	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type	30-200 15 200 1 6.8 30-200 1 6.8 30-200 1 6.8 30-200 1 6.8	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models	50-120 25 120 1.7 4 50 240 1.7	60-100 30 100 2 3.2 60 200 2	80-76 40 76 2.7 2.6 30 152 2.7 2.6	100-60 50 60 3.4 2 100 120 3.4 2	150-40 75 40 5.2 1.36 150 80 5.2 1.36	300-20 150 20 10.2 0.76 300 40 10.2 0.76	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range	, LAN, GPIB) 0.05% + 0.2% +	PSU mV mA mV mA mV mA mV mA	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 8 type : 1P2 8 type : 1P2	7's: CV, CC, V Unlock), PRC ment connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod W 170 – 265	12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-980 els, C type : 3	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type	30-200 15 200 1 6.8 30 400 1 6.8 30-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models	50-120 25 120 1.7 4 50 240 1.7	60-100 30 100 2 3.2 60 200 2	80-76 40 76 2.7 2.6 30 152 2.7 2.6	100-60 50 60 3.4 2 100 120 3.4 2	150-40 75 40 5.2 1.36 150 80 5.2 1.36	300-20 150 20 10.2 0.76 300 40 10.2 0.76	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output voltage measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 8 type: 1P2 47Hz – 63H	7's: CV, CC, V Unlock), PRC ment connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod W 170 – 265	12.5-480 6.25 480 0.4 16 12.5-480 0.4 16 12.5 960 0.4 16 12.5 960 0.4 16 12.5-480 els, C type : 3	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type	30-200 15 200 1 6.8 30-200 1 6.8 30-200 1 6.8 30-200 1 6.8	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models	50-120 25 120 1.7 4 50 240 1.7 4	60-100 30 100 2 3.2 60 200 2	80-76 40 76 2.7 2.6 30 152 2.7 2.6	100-60 50 60 3.4 2 100 120 3.4 2	150-40 75 40 5.2 1.36 150 80 5.2 1.36	300-20 150 20 10.2 0.76 300 40 10.2 0.76	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current	, LAN, GPIB) 0.05% + 0.2% +	PSU mV mA mV mA mV mA mV mA	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 44A	7s: CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod W 170 – 265' iz , C type : 29A	12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type	30-200 15 200 1 6.8 30 400 1 6.8 30-200 1 39-200 1 39-200 1 39-4W 400V 6 39-4W 360	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 80 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36	300-20 150 20 10.2 0.76 300 40 10.2 0.76	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 44A B type: 1P2	7s: CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod W 170 – 265' iz , C type : 29A	12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m IP3W 180 - 2	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type	30-200 15 200 1 6.8 30 400 1 6.8 30-200 1 39-200 1 39-200 1 39-4W 400V 6 39-4W 360	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac	50-120 25 120 1.7 4 50 240 1.7 4	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 80 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36	300-20 150 20 10.2 0.76 300 40 10.2 0.76	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 44A B type: 1P2 0.98 gp1 Ph	Vs. CV, CC, V Unlock), PRO rent connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod W 170 – 265	12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 vac, C type : 3 vac, C type : 3	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m P3W 180 – 2	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type	30-200 15 200 1 6.8 30-200 1 6.8 30-200 1 6.8 30-200 1 3P4W 400V e : 3P4W 360	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement accuracy Output voltage measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13)	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 300 0.2 24 6 1600 0.2 24 6-800 8 type: 1P2 47Hz – 63H 8 type: 44A B type: 44A B type: 1P2 0.98 gp1 Ph 78.5	Vs. CV, CC, V Unlock), PRO rent connector 8-720 4 720 0.27 24 8-1440 0.27 24 8-720 W 200V mod W 170 – 265 iz C type : 29A W 200V mod ase 200Vac / 81	12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m IP3W 180 - 2	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type	30-200 15 200 1 6.8 30 400 1 6.8 30-200 1 39-200 1 39-200 1 39-4W 400V 6 39-4W 360	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 80 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36	300-20 150 20 10.2 0.76 300 40 10.2 0.76	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement accuracy Output current measurement resolution Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 8 type: 1P2 47Hz – 63H B type: 1P2 0.98 @1 Ph 78.5 20ms or gre	Vs. CV, CC, V Unlock), PRO rent connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod W 170 – 265 tz C type: 294 W 200V mod ase 200Vac / 81 ster	12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 Vac, C type : 3 Vac, C type : 3	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m P3W 180 - 2 200A; C type ase 200/400V	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 13 p3w 2000 (ac 86	30-200 15 200 1 6.8 30 400 1 6.8 30-200 1 6.8 30-200 1 39-200 1 39-200 1 39-200 1 39-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 8 type: 1P2 47Hz – 63H 8 type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-800	7's: CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod W 170 - 265'tz C type: 29A W 200V mod ase 200Vac / 81 after 8-720	12.5-480 12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Voc, C type : 3 Voc, C type : 3 12.5-480 85	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m P3W 180 - 2 200A; C type ase 200/400V 85	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 33P3W 2000 /ac 86	30-200 15 200 1 6.8 30 400 1 6.8 30-200 1 6.8 30-200 1 6.8 30-200 1 6.8 30-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 8 type : 1P2 47Hz – 63H 8 type : 44A 8 type : 44A 8 type : 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos	Vs: CV, CC, V Unlock), PRO ment connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 31 atter 8-720 t, Type8: Slan	12.5-480 12.5-480 12.5-480 12.5-480 16 12.5 960 0.4 16 12.5-480 16 12.5-480 16 12.5-480 18 18 18 18 18 18 18 18 18 18 18 18 18	15-400 7.5 400 0.5 13.2 15 800 0.5 13 800 0.5 13	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20 53Vac, D type 53Vac	30-200 15 200 1 6.8 30 400 1 6.8 30 400 1 6.8 30-200 1 7 6.8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 8 type: 1P2 47Hz - 63H 8 type: 44A 8 type: 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre	7's: CV, CC, V Unlock), PRC ment connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 atter 8-720 i, TypeB: Slan ass, DNS IP A	12.5-480 12.5-480 6.25 480 0.4 16 12.5-480 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 Vac, C type : 3 Vac, C type : 3 A type 22A els Less than 0.95 @ 3 Ph 85 12.5-480 re, Speed: 1.1 ddress, User	15-400 7.5 400 0.5 13.2 15 800 0.5 13 80	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20 53Vac, D type 53Vac, D type 13 3P3W 2000 (ac 86 20-304	30-200 15 200 1 6.8 30 400 1 6.8 30 400 1 6.8 30-200 1 7 6.8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input roltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 44A B type: 44A B type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w	7's: CV, CC, V Unlock), PRO ment connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 atter 8-720 t, TypeB: Slan stift the EIA23	12.5-480 12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 Vac	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m IP3W 180 – 2 200A; C type ase 200/400V 85 15-400 /2.0, USB Cla Password, G Specifications	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20 53Vac, D type 53Vac, D type 13 3P3W 2000 (ac 86 20-304	30-200 15 200 1 6.8 30 400 1 6.8 30 400 1 6.8 30-200 1 7 6.8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option)	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz = 63H B type: 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addret Complies w SCPI - 1993.	Vs. CV, CC, V Unlock), PRO ment connector 8-720 4 720 0.27 24 8-720 W 200V mod w 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 atter 8-720 t, TypeB: Slav ss, DNS IP A ith the EIA23	12.5-480 12.5-480 12.5-480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 Vac	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m 3P3W 180 - 2 200A; C type ase 200/400V 85 15-400 20, USB Cla Password, G Specification: erface	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 1: 3P3W 2000 /ac 86	30-200 15 200 15 200 1 6.8 30 400 1 6.8 30-200 V model Less 36 30-200 V model Less 36	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 perice Classment IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 800 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 1P2 47Hz - 63H B type: 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w SCPI - 1993, 6-800	Vs. CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265 Iz C type : 29A W 200V mod ase 200Vac / 81 alter 8-720 t, Type8: Slan ass, DNS IP A ith the EIA23 IEEE 488.2 c 8-720	12.5-480 12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 Vac	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m IP3W 180 – 2 200A; C type ase 200/400V 85 15-400 /2.0, USB Cla Password, G Specifications	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20 53Vac, D type 53Vac, D type 13 3P3W 2000 (ac 86 20-304	30-200 15 200 1 6.8 30 400 1 6.8 30 400 1 6.8 30-200 1 7 6.8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200 1 8 30-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87	50-120 25 120 1.7 4 50 240 1.7 4 50-120	60-100 30 100 2 3.2 60 200 2 3.2 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement accuracy Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operaing temperature	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 800 0.2 24 6-800 8 type: 1P2 47Hz - 63H 8 type: 1P2 47Hz - 63H 8 type: 44A B type: 44A B type: 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w SCPI - 1993, 6-800 0 °C - 50 °C	Vs. CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 atter 8-720 t, TypeB: Slan ss, DNS IP A ith the EIA23 , IEEE 488.2 (8-720 (*14)	12.5-480 12.5-480 12.5-480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 Vac	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m 3P3W 180 - 2 200A; C type ase 200/400V 85 15-400 20, USB Cla Password, G Specification: erface	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 1: 3P3W 2000 /ac 86	30-200 15 200 15 200 1 6.8 30 400 1 6.8 30-200 V model Less 36 30-200 V model Less 36	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 perice Classment IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W 37	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input requency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operaing temperature Storage temperature	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 800 0.2 24 6-800 8 type: 1P2 47Hz - 63H 8 type: 1P2 47Hz - 63H 8 type: 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w SCPI - 1993, 6-800 0 ° C - 50 ° C -25 ° C - 70°	Vs. CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 after 8-720 t, TypeB: Slan ss, DNS IP A ith the EIA23 IEEE 488.2 (8-720 (*14) C	12.5-480 12.5-480 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 17 18 18 18 18 18 18 18 18 18 18 18 18 18	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m 3P3W 180 - 2 200A; C type ase 200/400V 85 15-400 20, USB Cla Password, G Specification: erface	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 1: 3P3W 2000 /ac 86	30-200 15 200 15 200 1 6.8 30 400 1 6.8 30-200 V model Less 36 30-200 V model Less 36	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 perice Classment IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W 37	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (**13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating temperature Storage temperature Operating humidity	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 800 0.2 24 6-800 8 type: 1P2 47Hz - 63H 8 type: 1P2 47Hz - 63H 8 type: 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w SCPI - 1993, 6-800 0 °C - 50 °C -25 °C - 70° 20% - 85%	7s: CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 atter 8-720 t, TypeB: Slan ss, DNS IP A ith the EIA23 IEEE 488.2 (8-720 (*14) C RH; No cons	12.5-480 12.5-480 12.5-480 16 12.5 960 0.4 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 17 18 18 18 18 18 18 18 18 18 18 18 18 18	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m 3P3W 180 - 2 200A; C type ase 200/400V 85 15-400 20, USB Cla Password, G Specification: erface	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 1: 3P3W 2000 /ac 86	30-200 15 200 15 200 1 6.8 30 400 1 6.8 30-200 V model Less 36 30-200 V model Less 36	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 perice Classment IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W 37	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (**13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating temperature Storage temperature Operating humidity Storage humidity	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local/ Voltage, Cu Type A USB 6-800 3 800 0.2 24 6-800 8 type: 1P2 47Hz - 63H 8 type: 1P2 47Hz - 63H 8 type: 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w SCPI - 1993, 6-800 0 °C - 50 °C -25 °C - 70° 20% - 85%	Vs. CV, CC, V Unlock), PRO rent connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 after 8-720 t, TypeB: Slan ss, DNS IP A ith the EIA23 IEEE 488.2 (*14) C RH; No conv less; No conv	12.5-480 12.5-480 12.5-480 16 12.5 960 0.4 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 17 18 18 18 18 18 18 18 18 18 18 18 18 18	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m 3P3W 180 - 2 200A; C type ase 200/400V 85 15-400 20, USB Cla Password, G Specification: erface	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 1: 3P3W 2000 /ac 86	30-200 15 200 15 200 1 6.8 30 400 1 6.8 30-200 V model Less 36 30-200 V model Less 36	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 perice Classment IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W 37	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating temperature Storage temperature Operating humidity Storage humidity Storage humidity Altitude	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 1P2 47Hz - 63H B type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-800 TypeA: Host MAC Addre Complies w SCPI - 1993, 6-800 0 "C - 50" C -25" C - 70" 20% - 85% 90% RH or Maximum 2	Vs: CV, CC, V Unlock), PRO ment connector 8-720 4 720 0.27 24 8-720 W 200V mod w 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 after 8-720 t, TypeB: Slan ster 8-720 (*14) C RH; No cons 1000m	12.5-480 12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 Vac, C type : 3 12.5-480 els Less than 0.95 @ 3 Ph 85 12.5-480 12.5-480 12.5-480 12.5-480 12.5-480 12.5-480 12.5-480	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m 3P3W 180 - 2 200A; C type ase 200/400V 85 15-400 20, USB Cla Password, G Specification: erface	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 1: 3P3W 2000 /ac 86	30-200 15 200 15 200 1 6.8 30 400 1 6.8 30-200 V model Less 36 30-200 V model Less 36	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 spent IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W 37	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4 87
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input requency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating temperature Storage temperature Storage temperature Operating humidity Storage humidity Altitude General Specifications	0.05% + 0.2% + 0.1% + 0.2% +	PSU mV mA mV mA mV mA PSU PSU PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 8 type: 1P2 47Hz - 63H 8 type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w SCPI - 1993, 6-800 0 "C - S0"C -25"C - 70" 20% - 85% 90% RH or Maximum 2 6-800	Vs: CV, CC, V Unlock), PRO ment connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod w 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 after 8-720 t, TypeB: Slan ster 8-720 t, TypeB: Slan ster 8-720 (*14) C RH; No cons less; No cons 000m 8-720	12.5-480 12.5-480 12.5-480 16 12.5 960 0.4 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 17 18 18 18 18 18 18 18 18 18 18 18 18 18	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m P3W 180 – 2 200A; C type ase 200/400V 85 15-400 /2.0, USB Cla Password, G Specifications erface 15-400	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 13P3W 2000 (ac 86 20-304 servay IP Adds 120-304	30-200 15 200 15 200 16 6.8 30 400 1 6.8 30-200 1 9.394W 400V 9.394W 400V 9.394W 360 V model Less 36 30-200 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 Device Classment IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W 87	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB) Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current programming resolution Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating temperature Storage temperature Operating humidity Storage humidity Altitude	200Vac / 400Vac	PSU mV mA mV mA mV mA PSU PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 1P2 47Hz - 63H B type: 1P2 0.98 @1 Ph 78.5 20ms or gre 6-800 TypeA: Host MAC Addre Complies w SCPI - 1993, 6-800 0 "C - 50" C -25" C - 70" 20% - 85% 90% RH or Maximum 2	7's: CV, CC, V Unlock), PRO ment connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod w 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 atter 8-720 t, TypeB: Slav as, DNS IP A ith the EIA23 IEEE 488.2 (8-720 (*14) C RH; No cons less; No cons 000m 8-720 7.4kg	12.5-480 12.5-480 6.25 480 0.4 16 12.5-960 0.4 16 12.5-480 els, C type : 3 Vac, C type : 3 Vac, C type : 3 12.5-480 els Less than 0.95 @ 3 Ph 85 12.5-480 12.5-480 12.5-480 12.5-480 12.5-480 12.5-480 12.5-480	DLY, RMT, J. Function(N 15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m P3W 180 – 2 200A; C type ase 200/400V 85 15-400 /2.0, USB Cla Password, G Specifications or a control of the control	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 13P3W 2000 (ac 86 20-304 servay IP Adds 120-304	30-200 15 200 15 200 16 6.8 30 400 1 6.8 30-200 1 9.394W 400V 9.394W 400V 9.394W 360 V model Less 36 30-200 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 Device Classment IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W 87	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4 87
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output current measurement accuracy Output current measurement accuracy Output current measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operating temperature Storage temperature Storage temperature Operating humidity Storage humidity Altitude General Specifications Weight	D.1% + 0.2% + 0.	PSU mV mA mV mA mV mA PSU PSU PSU	GREEN LEC Lock/Local(Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 1P2 47Hz - 63H B type: 1P2 0.98 gp1 Ph 78.5 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w SCPI - 1993, 6-800 0 "C - 50 "C -25 "C - 70" 20% - 85% 90% RH or Maximum 2 6-800 Less than 3: 423 × 174.4	7's: CV, CC, V Unlock), PRO ment connector 8-720 4 720 0.27 24 8 1440 0.27 24 8-720 W 200V mod w 170 – 265' iz C type : 29A W 200V mod ase 200Vac / 81 atter 8-720 t, TypeB: Slav as, DNS IP A ith the EIA23 IEEE 488.2 (8-720 (*14) C RH; No cons less; No cons 000m 8-720 7.4kg	12.5-480 12.5-480 12.5-480 12.5-480 14 16 12.5-480 16 12.5-480 16 12.5-480 16 12.5-480 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	DLY, RMT, J. Function(N 15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m P3W 180 – 2 200A; C type ase 200/400V 85 15-400 /2.0, USB Cla Password, G Specifications or a control of the control	20-304 10 304 0.7 10 20 608 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 13P3W 2000 (ac 86 20-304 servay IP Adds 120-304	30-200 15 200 15 200 16 6.8 30 400 1 6.8 30-200 1 9.394W 400V 9.394W 400V 9.394W 360 V model Less 36 30-200 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 Device Classment IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 type: 3P4W 87	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4 87
Indications Buttons Knobs USB port Programming and Measurement (RS-232/485, USB Output voltage programming accuracy Output current programming accuracy Output voltage programming resolution Output current programming resolution Output voltage measurement accuracy Output voltage measurement accuracy Output voltage measurement resolution Output current measurement resolution Input Characteristics Norminal input rating Input voltage range Input frequency range Maximum input current Inrush current Power factor Efficiency (*13) Hold-up time Interface Capabilities USB LAN RS-232 / RS-485 GPIB (Factory Option) Environmental Conditions Operaing temperature Storage temperature Storage temperature Operating humidity Storage humidity Storage humidity Altitude General Specifications Weight Dimensions Cooling	D.1% + 0.2% + 0.	PSU mV mA mV mA mV mA PSU PSU PSU	GREEN LEC Lock/Local() Voltage, Cu Type A USB 6-800 3 800 0.2 24 6 1600 0.2 24 6-800 B type: 1P2 47Hz - 63H B type: 1P2 47Hz - 63H B type: 1P2 20ms or gre 6-800 TypeA: Hos MAC Addre Complies w SCPI - 1993, 6-800 0 "C - 50" C -25" C - 70" 20% - 85% 90% RH or Maximum 2 6-800 Less than 3" 423 x 174.4 Forced air o	Vs. CV, CC, V Unlock), PRC rent connector 8-720 4 720 0.27 24 8-720 W 200V mod W 170 – 265 Iz C type : 29A W 200V mod ase 200Vac / 81 after 8-720 t, Type8: Slan ss, DNS IP A ith the EIA23 IEEE 488.2 (8-720 (*14) C RH; No cons less; No cons	12.5-480 12.5-480 12.5-480 16.12.5-480 16.12.5-480 16.12.5-480 16.12.5-480 16.12.5-480 17.5-480 18. C type : 3 18. Speed: 1.1	15-400 7.5 400 0.5 13.2 15 800 0.5 13.2 15-400 P3W 200V m P3W 180 - 2 200A; C type ase 200/400V 85 15-400 [2.0, USB Cla Password, G Specifications erface 15-400	20-304 10 304 0.7 10 20 608 0.7 10 20-304 odels, D type 53Vac, D type 13P3W 2000 fac 86 20-304 sec 20-304 20-304 20-304	30-200 15 200 15 200 1 6.8 30 400 1 6.8 30-200 2: 3P4W 400V e: 3P4W 360 V model Less 36 30-200 rmunications dress, Instrum 30-200	40-152 20 152 1.3 4.8 40 304 1.3 4.8 40-152 models - 440Vac than 100A; D 87 40-152 Device Class nent IP Addre	50-120 25 120 1.7 4 50 240 1.7 4 50-120 240 1.7 4 50-120 37	60-100 30 100 2 3.2 60 200 2 3.2 60-100 400V model 87 60-100	80-76 40 76 2.7 2.6 30 152 2.7 2.6 80-76 Less than 10 37 80-76	100-60 50 60 3.4 2 100 120 3.4 2 100-60 0A, 87 100-60	150-40 75 40 5.2 1.36 150 80 5.2 1.36 150-40 87	300-20 150 20 10.2 0.76 300 40 10.2 0.76 300-20 87 300-20	400-15.2 200 15.2 13.6 0.52 400 30.4 13.6 0.52 400-15.2 400-15.2	600-10.4 300 10.4 20.4 0.36 600 20.8 20.4 0.36 600-10.4 87 600-10.4
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- (*1) Minimum voltage is guaranteed to maximum 0.2% of the rated output voltage.
- (°2) Minimum current is guaranteed to maximum 0.4% of the rated output current.
- (*3) Single phase 200V models: 170 265Vac. Three phase 200V models: 180 253Vac. Three phase 400V models: 360 440Vac.
- (*4) From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
 (*5) Measured at rated output voltage and current with JEITA RC-9131B probe
 (*6) Measurement frequency bandwidth is 10Hz 20MHz.

- (*7) Measurement frequency bandwidth is 5Hz ~ 1MHz.
- (98) From 10% 90% of rated output voltage, with rated resistive load.
- (*9) From 90% 10% of rated output voltage, with rated resistive load.
- (°10) Time for output voltage to recover within 2% of its rated output for a load change from 50 ~ 100% of its rated output current. Voltage set point from 10% ~ 100% of rated output.
- (*11) For load voltage change, equal to the unit voltage rating, constant input voltage.

 (*12) For 6V ~ 20V model the ripple is measured at 2V ~ rated output voltage and full output current. For other models, the ripple is measured at 10 ~ 100% output voltage and full output current.

 (*13) Single phase and three phase 200V models: at 200Vac input voltage. Three phase 400V models: at 400Vac input voltage. At rated output power.
- (*14) If install the front panel filter kit, the temperature is guaranteed to 40°C.

1U Handle & Bracket









GTL-246 USB Cable, USB 2.0A-B Type Cable, 4P

RS-232 Cable with DB9 connector to RJ45

RS-485 Cable with Db9 connector to RJ45

Serial Master Cable+Terminator, 0.5M

GPIB Cable, 2000mm

RS-485 Slave cable

GRM-001 Slide bracket 2pcs/set ,PSU option

PSU-GPIB GPIB Interface card (factory option)

GPW-001 UL/CSA power cord 3m ,PSU option

GPW-002 VDE power cord 3m ,PSU option

GPW-003 PSE power cord 3m ,PSU option

GTL-258

GTL-259

GTL-260

GTL-261

GTL-262

PSU-4.5kW PSU-6kW PSU-3kW

ORDERING	INFORMATION

		OKDEKING II	AL OKIMATIO		
PSU 6-200	1200W	Programmable Switching DC Power Supply	PSU 60-25	1500W	Programmable Switching DC Power Supply
PSU 8-180	1440W	Programmable Switching DC Power Supply	PSU 80-19	1520W	Programmable Switching DC Power Supply
PSU 12.5-120	1500W	Programmable Switching DC Power Supply	PSU 100-15		Programmable Switching DC Power Supply
PSU 15-100	1500W	Programmable Switching DC Power Supply	PSU 150-10	1500W	Programmable Switching DC Power Supply
PSU 20-76	1520W	Programmable Switching DC Power Supply	PSU 300-5	1500W	Programmable Switching DC Power Supply
PSU 30-50	1500W	Programmable Switching DC Power Supply	PSU 400-3.8	1520W	Programmable Switching DC Power Supply
PSU 40-38	1520W	Programmable Switching DC Power Supply	PSU 600-2.6	1560W	Programmable Switching DC Power Supply
PSU 50-30	1500W	Programmable Switching DC Power Supply			70.00

ACCESSORIES:

CD-ROM x 1 (User Manual, Programming Manual), Output terminal cover x 1, Analog connector plug kit x 1, Output terminal M8 bolt set (6V-60V model), Input terminal cover x 1,1U Handle (RoHS),1U Bracket (LEFT, RoHS), 1U Bracket (RIGHT,RoHS), Power Cord (10A) provided for certain regions only

OPTIONAL ACCESSORIES

	Cable for 2 units in parallel connection
P20-01C	Cable for 2 units in parallel connection
PSU-02B	Bus Bar for 3 units in parallel operation (Applies to models ≤60 volts
DELLOSC	Cable for 3 units in parallel connection

PSU-03B Bus Bar for 4 units in parallel operation (Applies to models ≤60 volts)

PSU-03C Cable for 4 units in parallel co

PSU-232 RS232 Cable with DB9 connector kit

PSU-485 RS48S Cable with DB9 connector kit

Front panel filter kit(factory Installed) PSU-001

PSU-01A Joins a vertical stack of 2 PSU units together, 2U-sized handles x2, joining plates x2. PSU-02A Joins a vertical stack of 3 PSU units together. 3U-sized handles x2, joining plates x2 PSU-03A Joins a vertical stack of 4 PSU units together. 4U-sized handles x2, joining plates x2

PSU-ISO-I Isolate current remote control card(factory option)
PSU-ISO-V Isolate voltage remote control card(factory option)

FREE DOWNLOAD

Driver LabView Driver

PSU-011 PSU-01C PSU-02C GPW-001 PSU-01A PSU-01B PSU-232 PSU-03B GPW-002 PSU-02A PSU-02B PSU-02B PSU-03C GPW-003 PSU-03A GRM-001 GTL-259 GTL-260 GTL-261 GTL-262					
PSU-028 PSU-485 PSU-03C CPW-003 PSU-03A	PSU-001	PSU-01C	PSU-02C	GPW-001	PSU-01A
PSU-028 PSU-085 PSU-03C CPW-003 PSU-03A		•		9	
PSU-028 PSU-485 PSU-03C GPW-003 PSU-03A	PSU-01B	PSU-232	PSU-03B	GPW-002	PSU-02A
	118 €83	Q (O)		O	
■ 178 (88)	PSU-02B	PSU-485	PSU-03C	GPW-003	PSU-03A
GRM-901 GTL-269 GTL-260 GTL-261 GTL-262			×	0	
	GRM-001	GTL-259	GTL-260	GTL-261	GTL-262
	-	Q.	,O	*	

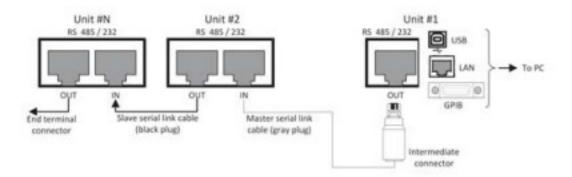
SERIES/PARALLEL OPERATION AND HIGH POWER DENSITY

Series Connection	1 unit	2 units
Height of sets	10	2U
PSU 6-200	6V	12V
	200A	200A
PSU 8-180	8V	16V
3	180A	180A
PSU 12.5-120	12.5V	25V
9 3	120A	120A
PSU 15-100	15V	30V
	100A	100A
PSU 20-76	20V	40V
	76A	76A
PSU 30-50	30V	60V
	50A	50A
PSU 40-38	40V	80V
9	38A	38A
PSU 50-30	50V	100V
0 4	30A	30A
PSU 60-25	60V	120V
	25A	25A
PSU 80-19	80V	160V
	19A	19A
PSU 100-15	100V	200V
	15A	15A
PSU 150-10	150V	300V
	10A	10A
PSU 300-5	300V	600V
	5A	5A
PSU 400-3.8	400V	NA
¥ 2	3.8A	NA
PSU 600-2.6	600V	NA
	2.6A	NA

Series Parallel	1 unit	2 units	3 units	4 units
Height of sets	10	2U	3U	4U
PSU 6-200	6V	6V	6V	6V
	200A	400A	600A	800A
PSU 8-180	8V	8V	8V	8V
	180A	360A	540A	720A
PSU 12.5-120	12.5V	12.5V	12.5V	12.5V
	120A	240A	360A	480A
PSU 15-100	15V	15V	15V	15V
	100A	200A	300A	400A
PSU 20-76	20V	20V	20V	20V
	76A	152A	228A	304A
PSU 30-50	30V	30V	30V	30V
	50A	100A	150A	200A
PSU 40-38	40V	40V	40V	40V
	38A	76A	114A	152A
PSU 50-30	50V	50V	50V	50V
	30A	60A	90A	120A
PSU 60-25	60V	60V	60V	60V
	25A	50A	75A	100A
PSU 80-19	80V	80V	80V	80V
	19A	38A	57A	76A
PSU 100-15	100V	100V	100V	100V
	15A	30A	45A	60A
PSU 150-10	150V	150V	150V	150V
	10A	20A	30A	40A
PSU 300-5	300V	300V	300V	300V
	5A	10A	15A	20A
PSU 400-3.8	400V	400V	400V	400V
	3.8A	7.6A	11.4A	15.2A
PSU 600-2.6	600V	600V	600V	600V
	2.6A	5.2A	7.8A	10.4A

To augment output power, the PSU-series can realize two-fold rated power(models under 300V) via 2 same model units in series connection; and four-fold rated power via 4 same model units in parallel connection so as to satisfy customers with large voltage and large current requirements. 2U height units in series connection can achieve maximum 600V output. 4U height units in parallel connection can output maximum 800A and 6240W.

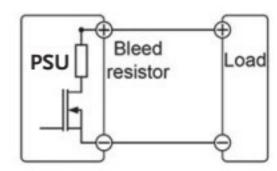
REMOTE PROGRAM CONTROL (UP TO 31 UNITS CONNECTION)



Provide RS-232, RS-485, USB, GPIB and LAN for PC to remote control Master PSU-Series. RJ-45 connector on the rear panel can connect up to 31 units.

LAN or USB remote control and augmenting slave units by using PSU-Series multi-drop mode will no longer need any switch/hub that can help customers save equipment costs.

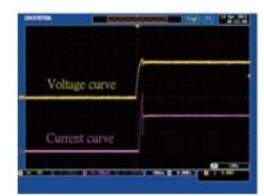
BLEEDER CONTROL



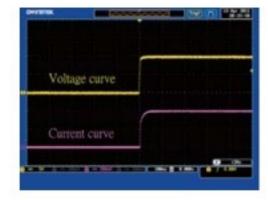
PSU-Series Built-in Bleed Resistor

The PSU-Series employs a bleed resistor in parallel with the output terminal. Bleed resistor is designed to dispatch the power from the power supply filter capacitors when power is turned off or the load is disconnected. Without a bleed resistor, power terminal may remain charged on the filter capacitors for some time and be potentially hazardous. In addition, bleed resistor also allows for smoother voltage regulation of the power supply as the bleed resistor acts as a minimum voltage load. The bleed resistance can be turned on or off using the configuration setting.

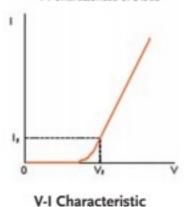
C.V/C.C PRIORITY MODE



Under the conventional C.V mode, inrush current and surge voltage appeared at forward voltage(Vf) of LED.

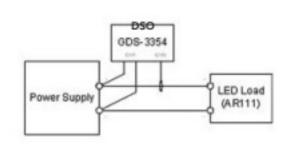


Under C.C priority mode, inrush and surge voltage are effectively restrained.



V-I Characteristic of Diode

of Diode



Using GDS-3354 DSO to Test LED Operation Under C.V Priority and C.C Priority Respectively

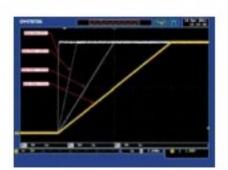
Conventional power supplies under the CV priority mode will produce inrush current and surge voltage at turn-on. The PSU-series has CV and CC priority modes.

The CC priority mode can prevent inrush current and surge voltage from occurring at turn-on to protect DUT.

^{*} For the detailed information please refer to User Manual

E. ADJUSTABLE SLEW RATE

VOLTAGE SLEW RATE	CURRENT SLEW RATE
0.001V~0.060V/msec (PSU 6-200)	0.001A~2.000A / msec (PSU 6-200)
0.001V~0.080V/msec(PSU 8-180)	0.001A~1.800A / msec (PSU 8-180)
0.001V~0.125V/msec (PSU 12.5-120)	0.001A~1.200A / msec (PSU 12.5-120)
0.001V~0.150V/msec(PSU 15-100)	0.001A~1.000A / msec(PSU 15-100)
0.001V~0.200V/msec (PSU 20-76)	0.001A~0.760A / msec (PSU 20-76)
0.001V~0.300V/msec(PSU 30-50)	0.001A~0.500A / msec(PSU 30-50)
0.001V~0.400V/msec (PSU 40-38)	0.001A~0.380A / msec (PSU 40-38)
0.001V~0.500V/msec(PSU 50-30)	0.001A~0.300A / msec(PSU 50-30)
0.001V~0.600V/msec (PSU 60-25)	0.001A~0.250A / msec (PSU 60-25)
0.001V~0.800V/msec(PSU 80-19)	0.001A~0.190A / msec(PSU 80-19)
0.001V~1.000V/msec (PSU 100-15)	0.001A~0.150A / msec (PSU 100-15)
0.001V~1.500V/msec (PSU 150-10)	0.001A~0.100A / msec (PSU 150-10)
0.001V~1.500V/msec (PSU 300-5)	0.001A~0.025A / msec (PSU 300-5)
0.001V~2.000V/msec (PSU 400-3.8)	0.001A~0.008A / msec (PSU 400-3.8)
0.001V~2.400V/msec (PSU 600-2.6)	0.001A~0.006A / msec (PSU 600-2.6)



Adjustable Voltage Slew Rate

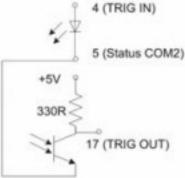
The PSU series can adjust slew rate for current and voltage. Via setting the rise and fall time of voltage and current, users can verify DUT's characteristics during voltage and current variation. Additionally, slew rate adjustment can mitigate voltage shift to effectively prevent DUT from being damaged by inrush current. This function is ideal for tests such as capacitive load and motor.

OVP,OCP AND UVL

MODEL	ОСР	OVP	UVL
PSU 6-200	5 ~ 220A	0.6 ~ 6.6V	0 ~ 6.3V
PSU 8-180	5 ~ 198A	0.8 ~ 8.8V	0 ~ 8.4V
PSU 12.5-120	5 ~ 132A	1.25 ~ 13.75V	0 ~ 13.12V
PSU 15-100	5 ~ 110A	1.5 ~ 16.5V	0 ~ 15.75V
PSU 20-76	5 ~ 83.6A	2 ~ 22V	0 ~ 21V
PSU 30-50	5 ~ 55A	3 ~ 33V	0 ~ 31.5V
PSU 40-38	3.8 ~ 41.8A	4 ~ 44V	0 ~ 42V
PSU 50-30	3 ~ 33A	5 ~ 55V	0 ~ 52.5V
PSU 60-25	2.5 ~ 27.5A	5 ~ 66V	0 ~ 63V
PSU 80-19	1.9 ~ 20.9A	5 ~ 88V	0 ~ 84V
PSU 100-15	1.5 ~ 16.5A	5 ~ 110V	0 ~ 105V
PSU 150-10	1 ~ 11A	5 ~ 165V	0 ~ 157.5V
PSU 300-5	0.5 ~ 5.5A	5 ~ 330V	0 ~ 315V
PSU 400-3.8	0.38 ~ 4.18A	5 ~ 440V	0 ~ 420V
PSU 600-2.6	0.26 ~ 2.86A	5 ~ 660V	0 ~ 630V

Once the voltage or current output exceeds the preset level of OVP or OCP, PSU will shut down output to protect DUT.UVL is for users to set the minimum output voltage from the output terminal.

G. TRIGGER CONTROL (TRIGGER INPUT/TRIGGER OUTPUT)



PSU-series provides users with complete trigger input and trigger output functions so as to flexibly control PSU-series. Each function is elaborated as follows.

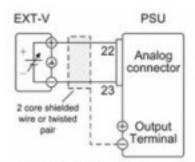
Trigger Input function:

- Allow users to set the effective pulse width from 0–60ms for trigger input (0: the LOW or HIGH signal of DC level for trigger input)
- 2. Receive trigger input to control PSU-series output or to output preset voltage and current.
- 3. Receive trigger input to upload preset memory parameters.

Trigger Output function:

- Allow users to set the effective pulse width from 0-60ms for trigger output (0: the LOW or HIGH signal of DC level for trigger output)
- 2. Set LOW or HIGH for output DC level
- PSU produces trigger output signal when setting output or changing preset value or uploading preset memory parameters.

H. EXTERNAL ANALOG CONTROL FUNCTION



- Pin23 → EXT-V (-)
- Pin22 → EXT-V (+)
- Wire shield → negative (-) output terminal
- 22 Analog connector

 2 core shielded wire or twisted pair

 Output Terminal
- Pin22 → EXT-R
- Pin23 → EXT-R
- Wire shield → negative (-) output terminal

Switch PSU Analog connector 2 core shielded wire or twisted pair Output Terminal

- Pin19 → Switch
- Pin20 → Switch
- Wire shield → negative (-) output terminal

External Voltage Controls Voltage Range

External Resistance Controls Voltage Range

The rear panel of the PSU-series has an analog control terminal. The external analog control interface allows external voltage or resistance to control voltage and current output; and allows power supply to output or to be turned on and off. The diagram on the upper shows typical connection methods for external control applications. For more detailed connection information please refers to user manual.

External On-off to Control Output, on or off



Fanless Multi-Range D.C. Power Supply



PFR-100L



PFR-100M



FEATURES

- * Constant Power Output for Fivefold Multi-Range(V&I) Operation
- * Natural Convection Cooling Design (Fanless Structure)
- * Preset Memory Function
- * Output ON/OFF Delay Function
- * CV, CC Priority Mode
- * Adjustable Slew Rate For Voltage and Current
- * Bleeder Circuit Control
- * Protection: OVP, OCP, AC FAIL and OTP
- * Support Front Panel and Rear Panel Output
- * Interface: USB,LAN,RS-232/485(std.); GPIB(opt.)
- * Web Server Monitoring and Control
- * External Analog Control and Monitor Function
- * Remote Sensing Function

Model	PFR-100L	PFR-100M
Output Channel	1	1
Output Voltage	0~ 50V	0~ 250V
Output Current	0~10A	0~2A
Rated Power	100W	100W

The PFR-100 series, a small and high-performance programmable D.C. power supply, adopts natural convection design to dissipate heat. The fanless structure allows users to focus on their experiments and tests in a quiet environment. Fanless power supply will not suck in dust and foreign objects, therefore, PFR-100 series has a longer life cycle compared with that of power supplies with fan.

The PFR-100 series is a power supply with a five-fold rated power that allows users to self-define voltage and current under rated power conditions so as to satisfy them with wider voltage and current operational ranges. PFR-100 series, with rated 100W, provides two models: PFR-100L- maximum output voltage of 50V (at 2A) or maximum output current of 10A (at 10V); PFR-100M- maximum output voltage of 250V (at 0.4A) or maximum output current of 2A (at 50V).

The PFR-100 series provides front and rear panel output terminals. The front panel output terminal helps users shorten test lead replacement time while conducting adjustment on front panel's function keys. The rear panel output terminal facilitates an easy wiring operation for rackmount assembly. 3U height, 70mm width and 2.5KG in weight have greatly elevated PFR-100 series portability. Furthermore, the multi-drop mode allows users to control up to 31 PFR-100 series without using switch/Hub that help users save the equipment cost.

The LAN interface for PFR-100 is Ethernet port. PFR-100 also has a built-in web server and intuitive user interface. Users, via general browsers including Internet Explorer, Mozilla Firefox or Android cellular phones, can monitor PFR-100's test and measurement anywhere. Users not only can remotely monitor PFR-100 via internet, but also remotely observe and adjust their operating PFR-100s in the lab from your home. The outputs of PFR-100 series can be monitored including OVP, OCP, UVL; and the system information can be checked such as unit's serial number, firmware edition and internet setting. Users can remotely adjust PFR-100 settings, including output voltage/current, the slew rate for voltage/current, Bleeder circuit control, OCP, delayed time for output voltage and Buzzer settings.

The PFR-100 series provides special functionalities to meet test requirements for different load's characteristics. The CC priority mode can be applied for DUTs with diode characteristics to prevent DUT from being damaged by inrush current. A slow rise time for voltage can also protect DUT from inrush current, especially for tests on capacitive load. When power is off or load is disconnected, the activation of Bleeder circuit control will allow the bleeder resistor to consume filter capacitor's electricity. Without the bleed resistor, power supply's filter capacitor may still have electricity that is a potential hazard. For automatic testing equipment systems, the bleeder resistor allows PFR-100 series to rapidly discharge to prepare itself for the next operation.

Model		PFR-100L	PFR-100M
OUTPUT RATING			
Rated Output Voltage		50V	250V
Rated Output Current		10A	2A
Rated Output Power		100W	100W
REGULATION(CV)			10
Load Regulation (*2)		10mV	33mV
Line Regulation (*1)		3mV	5mV
REGULATION(CC)			- 100
Load Regulation (*9)		10mA	3.2mA
Line Regulation (*1)		8mA	1.2mA
RIPPLE & NOISE (*3)			
Vp-p (*4)		50mV	150mV
Vr.m.s.(*5)		4mV	15mV
A r.m.s.		10mA	2mA
PROGRAMMING ACCURACY			
Voltage	0.1% of setting +	40mV	200mV
Current	0.2% of setting +	20mA	2mA
MEASUREMENT ACCURACY	-		
Voltage	0.1% of reading +	40mV	200mV
Current	0.2% of reading +	20mA	2mA
RESPONSE TIME			
Rise Time (*6)	Rated load	50ms	100ms
Fall Time (*7)	Rated load	100ms	200ms
10 provide 1000 1000	No load	500ms	1000ms
Transient Response Time (*8)		1.5ms	2ms
PROGRAMMING RESOLUTION			
Voltage		2mV	10mV
Current		1mA	0.1mA
MEASUREMENT RESOLUTION		NAME OF STREET	
Voltage		2mV	10mV
Current		1mA	0.1mA
PROTECTION FUNCTION		120 220 20	33
Over Voltage Protection (OVP)	Setting range	5-55V	5-275V
Over Current Protection (OCP)	Setting range	1-11A	0.2-2.2A
Under Voltage Limit (UVL)	Setting range	0-52.5V	0-262.5V
Over Temperature Protection (OTP)	Operation	Turn the output off.	Turn the output off.
Low AC Input Protection (AC-Fail)	Operation	Turn the output off.	Turn the output off.
Power Limit (Power Limit)	Operation	Turn the output off.	Turn the output off.







Rear Panel





PFR-Series

SPECIFICATIONS		N	V.	
Model		PFR-100L	PFR-100M	
FRONT PANEL DISPLAY ACCU	RACY, 4 DIGITS		20 18-00 101	
Voltage	0.1% of reading +	40mV	200mV	
Current	0.2% of reading +	20mA	2mA	
ENVIRONMENT CONDITION		30		
Operating Temperature		0°C to 40°C		
Storage Temperature		-20°C to 70°C		
Operating Humidity		20% to 80% RH; No condensation		
Storage Humidity		20% to 85% RH; No condensation		
READBACK TEMP. COEFFICIEN	NT(After A 30 Minute Wa	rm-up)		
Voltage	*	100ppm/°C		
Current		200ppm/°C		
OTHER		Y		
Analog Control		Yes	OTP900000 #0	
Interface		USB,LAN,RS-232/485(std.); GPIB(opt.)		
AC Input		85-265VAC, 47-63Hz, single phase		
DIMENSIONS & WEIGHT				
		70(W)x124(H)x300(D)mm	Approx, 2.5kg	

Note: *1: At 85 ~ 132Vac or 170 ~ 265Vac, constant load.

- *2: From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
- *3: Measure with JEITA RC-9131B (1:1) probe
- *4: Measurement frequency bandwidth is 10Hz to 20MHz.
- *5: Measurement frequency bandwidth is 5Hz to 1MHz.
- *6: From 10%-90% of rated output voltage, with rated resistive load.
- *7: From 90%~10% of rated output voltage, with rated resistive load.
- *8: Time for output voltage to recover within 0.1% + 10mV of its rated output for a load change from 50 to 100% of its rated output current.
- *9: For load voltage change, equal to the unit voltage rating, constant input voltage.

ORDERING INFORMATION

PFR-100L Fanless Multi-Range D.C. Power Supply

PFR-100M Fanless Multi-Range D.C. Power Supply (European terminals provided only)

ACCESSORIES:

CD(User Manual, Programming manual) x 1, Power cord, GTL-134 test lead, Accessory Packages GTL-104A test lead (for PFR-100L only), GTL-105A test lead (for PFR-100M only), GTL-204A test lead (for PFR-100L European Type Jack Terminal)

OPTIONAL ACCESSORIES

GTL-258 GPIB Cable, 2000mm GTL-259 RS-232 Cable with DB9 connector to RJ45 PSU-232 RS-232 Cable with DB9 Connector Kit GTL-260 RS-485 Cable with DB9 connector to RJ45 PSU-485 RS-485 Cable with DB9 Connector Kit GTL-261 Serial Master Cable+Terminator, 0.5M USB Cable (USB 2.0 Type A-TypeB Cable) GTL-246 GTL-262 RS-485 Slave cable GRA-431-J-100/200 Rack mount Kit(JIS) with AC 100V/200V GRA-431-E-100/200 Rack mount Kit (EIA) with AC 100V/200V Optional GPIB Interface for PFR (Factory installed) PFR-GPIB





GTL-260



GTL-261



GTL-262

GRA-431-J/E Rack Mount Kit(JIS/EIA)



PSU-232 RS-232 Cable with DB9 Connector Kit



PSU-485 RS-485 Cable with DB9 Connector Kit



GTL-258 GPIB Cable, 2000mm



GTL-134 Test Lead



Programmable Switching D.C. Power Supply (Multi-range D.C. Power Supply)



PSB-2400L2



PSB-2400L/PSB-2400H/ PSB-2800L/PSB-2800H



PSB-2800LS



Note: PSB-2400H/PSB-2800H are not CE approved

FEATURES

- * Output Voltage Rating : 80V/800V, Output Power Rating : 400W ~ 800W
- ☆ Constant Power Output for Multi-Range (V & I) Operation
- * Series and Parallel Operation (2 Units in Series or 4 Units in Parallel Maximum)
- * 90 Degree Angle Rotatable Control Panel
- * Sequence Function Edited by PC will be Controlled Through Power Supply Optional Interfaces
- * Standard Interface : RS-232C/USB/Analog Control Interface
- * Optional Interface : GPIB * Preset Function (3 Points)
- * LabVIEW Driver

The PSB-2000 Series is a high power density, programmable and multi-range output DC power supply. There are six models in the series including one power booster unit. The PSB-2000 Series has the output voltage of 0~80V and 0~800V, and the output power ranges of 0~400W and 0~800W. The multi-range output functionality facilitates flexible collocations of higher voltage and larger current under the rated power range. Both series and parallel connections can be applied to the PSB-2000 Series to fulfill the requirements of higher

The PSB-2000 Series provides three sets of preset function keys to memorize regularly used settings of voltage, current and power that users can recall rapidly. The sequence function, via RS232C, USB interface or optional GPIB interface, can connect with the computer to produce output power defined by sequence of a series of set voltage and current steps that are defined by the computer. This function is often used to establish a standard test procedure for the verification of the influence on DUTs done by the swiftly changing operating

The PSB-2000 Series protects over voltage and over current. The power supply output function will be shut down to protect DUTs while the protection mechanism is triggered to function. When conducting battery charging operation, the $\text{Hi-}\Omega$ mode of the PSB-2000 Series will prevent reverse current from damaging power supply.

The PSB-2000 Series provides analog control interfaces on the rear panel to control PSB-2000 Series output via the external voltage or to externally monitor voltage and current output status of power supply. The PSB-2000 Series panel can be rotated 90 degree angle suitable for vertical or horizontal position to accommodate the ideal space utilization.

SERIES OPERATION

MODEL NUMBER	SINGLE UNIT	TWO UNITS
PSB-2400L	80V/40A	160V/40A
PSB-2800L	80V/80A	160V/80A
PSB-2800LS (Booster Unit for PSB-2800L Only)	N/A	N/A
PSB-2400L2	N/A	N/A
PSB-2400H	N/A	N/A
PSB-2800H	N/A	N/A

PARALLEL OPERATION

MODEL NUMBER	SINGLE UNIT	TWO UNITS	THREE UNITS	FOUR UNITS
PSB-2400L	80V/40A	80V/80A	80V/120A	80V/160A
PSB-2800L	80V/80A	80V/160A	80V/240A	80V/320A
PSB-2800LS	PSB-2800LS N/A		80V/240A (PSB-2800L x 1+ PSB-2800LS x 2)	N/A
PSB-2400L2	N/A	N/A	N/A	N/A
PSB-2400H	800V/3A	800V/6A	N/A	N/A
PSB-2800H	800V/6A	800V/12A	N/A	N/A

	PSB-2400L	PSB-2800L	PSB-2400L2	PSB-2400H	PSB-2800H	PSB-28001
OUTPUT RATING		1000000				
Voltage	0 ~ 80V	0 - 80V	0 - 80V x 2CH	0 - 800V	0 - 800V	80V
Current	0 - 40A	0 - 80A	0 ~ 40A x 2CH	0 – 3A	0 - 6A	80A
Power	400W	800W	800W	400W	800W	800W
REGULATION (CV)						
Load	0.01% ± 3mV of rated vo			$0.01\% \pm 30$ mV of rated voltage		N/A
Line	0.01% ± 2mV of rated vo	ltage		$0.01\% \pm 20$ mV of rated voltage		
REGULATION (CC)		797 1				
Load	0.02% ± 3mA of rated cu			0.05% ± 15mA of rated current		N/A
Line	0.01% ± 2mA of rated cu			0.05% ± 10mA of rated current		8
RIPPLE & NOISE (Noise	Bandwidth 20MHz ; Ripple E	Bandwidth=1 MHz)			(1)	
CV p-p	90mV	150mV	90mV	250mV (only output voltage measures more than 1% of the rated voltage)	300mV(only output voltage measures more than 1% of the rated voltage)	N/A
CV rms	4mV	6mV	4mV	20mV (when current measures<2A) 35mV (when current measures>2A)	25mV (when current measures<2A) 40mV (when current measures>2A)	
CC rms	30mA	60mA	30mA	15mA	20mA	
PROGRAMMING ACCU	RACY	in a				
Voltage	0.1% setting±2digits			0.1% setting±2digits		N/A
Current	0.2%setting±2digits			0.2% setting±2digits		
Power	± 10W			±10W (only output voltage measur	es more than 1% of rated voltage)	
READ BACK ACCURACY						
Voltage	0.2% reading±2digits			0.2% reading±2digits		N/A
Current	0.3% reading±2digits			0.3% reading±2digits		
Power	0.5% reading±5digits			0.5% reading±Vout x 40mA		
RESPONSE TIME						272
Raise Time(Full load/No load)	50ms			200ms	-	N/A
Fall Time(Full load)	100ms			500ms		1407
Fall Time(No load)	500ms			1000ms		
Load Transient Recover Time	1ms			7ms		
(Load change from 50~100%)						
PROGRAMMING RESO	LUTION		-			
Voltage	10mV			100mV		N/A
Current	10mA			10mA		1475
Power	10W			10W		
MEASUREMENT RESOL	UTION		10			3.0
Voltage	10mV			100mV		N/A
Current	10mA			10mA		16500.540
Power	10W			10W	6.3	Z.
SERIES AND PARALLEL	CAPABILITY					
Channel Number	1	1	2	1	.1.	
Series Operation	Up to 2 Units	Up to 2 Units	N/A	N/A	N/A	For PSB-280
Parallel Operation Parallel with booster PSB-2800LS	Up to 4 Units N/A	Up to 4 Units Up to 3 Units	N/A N/A	Up to 2 Units N/A	Up to 2 Units N/A	Only
PPROTECTION FUNCTI	-	Op to 5 Omits	14/75	14/15	14/0	
		Crossed welsome		Output off when output voltage ou	and 1100/ of rated values	N/A
OVP (Fixed)	Output off when 110% o Output off when operating;		V with front nanel	Output off when output voltage ex- Presettable in range from 10V ~ 84	-	IN/A
OVP (Variable) OCP (Fixed)	Output off when 110% o		TV WILLI ITOTIL PALIET	Output off when output voltage ex		
OCP (Variable)	Output off when operating;Sett		A for model number)	Presettable in range from 0.1A ~ 6.		
OHP	Output off above heat si			Output off at the internal heat sink to		
ENVIRONMENT COND		8				700
Operation Temp	0°C ~ 40°C					N/A
Storage Temp	-20°C ~ 70°C					IN/A
Operating Humidity	30% - 80% RH (no dew	condensation)				
Storage Humidity	30% - 80% RH (no dew					
OTHER		100				
Inrush Current	35A Max	70A Max	70A Mmax	35A Max	70A Max	70A Max
Power Consumption/Factor	560VA/0.99	1120VA/0.99	1120VA/0.99	560VA/0.99	1120VA/0.99	1120VA/0.9
Cooling Method	Forced air-cooling with fa	n motor				
Power Source	100VAC - 240VAC, 50/60H					
Interface (Standard)	RS-232C/USB	12, Single phase				
Interface (Optional)	GPIB					
Analog Control	Yes					
DIMENSIONS & WEIGH						
The state of the s	210(W) x 124(H) x 290(D))mm				
		7	5 500 700	7	22 22	
6	Approx.5kg	Approx.7kg	Approx.7kg	Approx. 5kg	Approx. 6kg	Approx. 7k

Programmable Switching D.C. Power Supply (Multi-range D.C. Power Supply)



PSB-2400L2

Rear Panel



PSB-2400L/PSB-2400H/ PSB-2800L/PSB-2800H

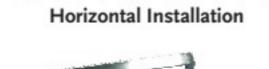


PSB-2800LS





PSB-003 Parallel Connection Kit for







PSB-2400L

PSB-2800L

PSB-2400L2

PSB-2400H

PSB-2800H

PSB-2800LS

ACCESSORIES:

User Manual (CD) x 1, AC Power Cord x 1, External Control Connector (26pin), Screws for output terminals on rear panel, Protection covers for output terminals on rear panel, Protection caps for output terminals on the front panel, GND Cable, USB Cable (For Model Number : PSB-2400L; PSB-2800L; PSB-2400L2; PSB-2400H; PSB-2800H) Local Bus (For Model Number: PSB-2400L; PSB-2800L; PSB-2400L2; PSB-2400H; PSB-2800H)

ORDERING INFORMATION

0-80V/0-40A/400W Multi-Range DC Power Supply

0-80V/0-80A/800W Multi-Range DC Power Supply

0-800V/0-3A/400W Multi-Range DC Power Supply

0-800V/0-6A/800W Multi-Range DC Power Supply

800W Slave (Booster) Unit For Current Extension Only

0-80V x 2/0-40A x 2/800W Multi-Range DC Power Supply

OPTIONAL ACCESSORIES

PSB-001 GPIB Card

PSB-003 Parallel Connection Kit for Horizontal Installation.

Kit Includes: (PSB-007 Joint Kit, Horizontal bus bar x 2, PSB-005 x1)

PSB-004 Parallel Connection Kit for Vertical Installation.

Kit Includes: (PSB-007 Joint Kit, Verical bus bar x 2, PSB-005 x 1)

PSB-005 Parallel Connection Signal Cable PSB-006 Series Connection Signal Cable

Joint Kit: Includes 4 Joining Plates, (M3x6)screws x 4; (M3x8)screw x 2

PSB-008 RS232C Cable (PSB-2000 Only)

FREE DOWNLOAD

Driver Labview Driver

PSB-008 RS-232C Cable (PSB-2000 Only)

GTL-246 USB Cable

GTL-248 GPIB Cable

GRJ-1101 Modular Cable

GRA-424 Rack Mount Kit



GRJ-1101 Modular Cable

PSB-006 Series Connection Signal Cable



PSB-007 Joint Kit





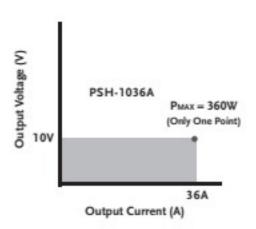
PSB-001 GPIB Control Board



PSB-005 Parallel Connection Signal Cable

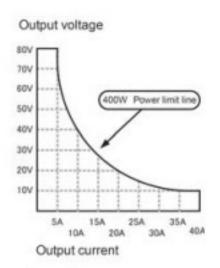


A. MULTI-RANGE OUTPUT OPERATION



The operation area of a Conventional Power Supply

Compared with the maximum power output of the conventional power supply that is calculated by the maximum output voltage multiplies by the maximum output current, the PSB-2000 series, defying the formula, has a unique characteristic of multi-range output (voltage and current). This distinguishing feature, under the same maximum power output range, can output a higher voltage with a smaller current and vice versa. For instance, for a conventional power supply with a maximum power output of 360W, the maximum voltage and current outputs are likely to be



The operation area of a Multi-Range Power Supply for PSB-2000 Series

10V and 36A respectively. Comparatively, PSB-2400L, with the maximum power output of 400W, provides voltage and current output ranges of 0~80V and 0~40A. The maximum current of 5A will be provided when the voltage reaches 80V and the maximum voltage of 10V for the maximum current of 40A. PSB-2400L, breaking the limitation of Pmax=Vmax x Imax,, broadens voltage and current application ranges. The following diagrams illustrate the voltage and current comparison between the multi-range output power supply and the conventional power supply.

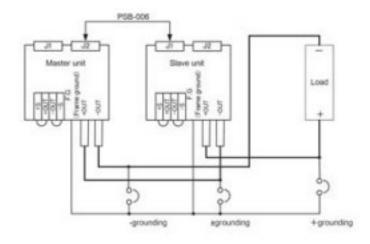
B. PRODUCTS IN THE SERIES

There are six models in the PSB-2000 Series. Model type, output voltage, output current and output power are as follows:

MODEL	PSB-2400L	PSB-2800L	PSB-2400L2	PSB-2400H	PSB-2800H	PSB-2800LS*
Channel Number	1	1	2	1	1	NA
Voltage Rating**	0 ~ 80V	0 ~ 80V	0 ~ 80V x 2CH	0 ~ 800V	0 ~ 800V	80V
Current Rating***	0 ~ 40A	0 ~ 80A	0 ~ 40A x 2CH	0 ~ 3A	0 ~ 6A	80A
Output Power (Max.)	400W	800W	800W	400W	800W	800W

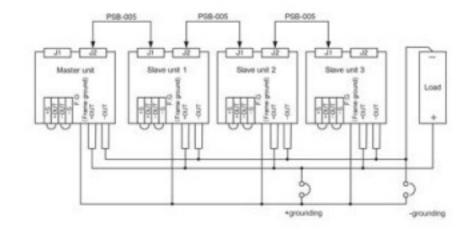
- * PSB-2800LS, a booster unit acting as slave to extend current, can not operate alone. It must operate with PSB-2800L master.
- ** The maximum current under the highest output voltage is power/voltage. For instance, when PSB-2400L outputs 80V the maximum current is 400W/80V = 5A.
- *** Same as above. When PSB2400L outputs 40A the highest voltage is 400W/40A = 10V.

C. SERIES AND PARALLEL CONNECTIONS



Series Connection

Hence, the PSB-2000 Series, with its multi-range output function and the power extension capability of series and parallel connections, is the high power density and high performance to cost ratio DC power supply, which provides



Parallel Connection

a wider range of power applications for any limited equipment space. The PSB-2000 Series is an ideal selection for testing DC power supply module, automobile lithium and lithium iron battery and electronic parts.

Programmable Multi-Range D.C. Power Supply



PSB-1000 Series



FEATURES

- * LCD Display and User-Friendly Menu-Typed Functional Interface
- * Voltage Rating: 40V/160V, Output Power Rating: 400W/800W
- * Constant Power Output for Multi-Range(V & I) Operation
- * The I/V Control Functions(Adjustable Slew Rate) are Suitable for Diode Characteristic Load & Surge Reducing
- * Sequence Function for Sequential D.C Waveform Output
- * C.V/C.C Priority
- * Auto Run for Output or Sequence Function
- * Master-Slave Operation : 2 Units in Series/ 4 Units in Parallel
- Synchronized Operation(Voltage Trigger, Trigger In/Trigger Out Signal)
- * Standard Interface : USB Host, LAN; Option: GPIB
- * Internal Sense Control(Disable/Front Panel/ Rear Panel) Function
- * LabVIEW Driver

PSB-106 Basic accessory kit:

M4 Terminal screws and washers x 2, M8 Terminal bolts, Nuts and washers x 2, Analog control protection dummy x 1, Analog control lock level x 2, Short bar x 1



PSB-1000 is a series of Multi-Range DC Power Supply, whose maximum voltage output of 320V can be realized by placing 2 sets of 160V units in series connection. By connecting 4 sets of PSB-1800L units in parallel, the maximum current output of 320A can be achieved.

The PSB-1000 series is a bench-top power supply featuring user friendly interface, which can clearly display setting conditions and measurement results via LCD display and menu-typed functionality selection without referring to the user manual. All settings can be done by functionality keys, numerical keys, and speed dial keys. The 30A output capability from the front output terminal of the PSB-1000 series can better meet the requirements of laboratories and scientific R&D departments.

The PSB-1000 series features user friendly menu-typed functionality interface and its built-in functionalities can better meet industry's application requirements. Both front panel and rear panel output terminals of the PSB-1000 series facilitate researchers to access power output conveniently. The display panel adopts menu-typed functionality selection to help users quickly familiarize with settings and operation that is extremely suitable for on-site engineers and R&D engineers who deal with complicated functional setting requirements. Power On Configuration allows users to select previously set SEQ to carry out automatic execution as soon as power is turned on. For production lines demanding sequential power supply output application requirements, tremendous time can be saved by this function, which exempts users from resetting sequential power supply when power is turned on every single time.

Voltage Trigger allows users to set pulse signals for leading edge threshold and trailing edge threshold. VOLT TRIG can be applied to Automatic test system by providing output time for working voltage via BNC adapter. The Output Delay function facilitates users to respectively set action time for power output on and power output off for multiple sets of PSB-1000 so as to realize sequential power output applications.

The PSB-1000 series is equipped with multi range power output capability providing fourfold rated power output to meet customers' flexible application requirements.

Model Name	PSB-1400L	PSB-1400M	PSB-1800L	PSB-1800M
OUTPUT RATING				
Output Voltage(V)	0~40	0~160	0~40	0~160
Output Current(A)	0~40	0~10	0~80	0~20
Output Power(W)	400W	400W	800W	800W
REGULATION (CV)				
Load Regulation (mV)	25	85	25	85
Line Regulation (mV)	23	83	23	83
REGULATION (CC)				
Load Regulation (mA)	45	15	85	25
Line Regulation (mA)	45	15	85	25
RIPPLE & NOISE (Nois	e Bandwidth 20MH	z ; Ripple Bandwidt	h = 1MHz)	
CV p-p	60	60	80	80
CV rms	7	12	11	15
CC rms	80	20	160	40
PROGRAMMING ACC				
Voltage (mV) 0.1% +	10	50	10	50
Current (mA) 0.1% +	20	10	40	20
MEASUREMENT ACCU				y.
Voltage (mV) 0.1% +	10	50	10	50
Current (mA) 0.1% +	20	10	40	20
RESPONSE TIME		1000000		
Raise Time (ms)	50	100	50	100
Fall Time(Full load) (ms)	30	150	50	150
Fall Time(No load) (ms) Load Transient Recover Time(ms)	500	1200	500	1200
(Load change from 50 to 100%)	1	1	1	1
PROGRAMMING RESC	DLUTION (By PC Re	emote Control Mode	2)	
Voltage (mV)	1	3	1	3
Current (mA)	1	1	2	1
MEASUREMENT RESO	LUTION (By PC Re	mote Control Mode)	· · · · · · · · · · · · · · · · · · ·
Voltage (mV)	1	3	1	3
Current (mA)	1	1	2	1
SERIES AND PARALLE				
Parallel Operation Series Operation		ding the master un ding the master un		
PPROTECTION FUNC	TION			
OVP (V)	4-44	5-176	4-44	5-176
OCP (A)	4-44	1-11	5-88	2-22
OHP	Turn the output off.	Turn the output off.	Turn the output off.	Turn the output of



PSB-1000 Series

SPECIFICATIONS										
Model Name	PSB-1400L	PSB-1400M	PSB-1800L	PSB-1800M						
FRONT PANEL DISPLAY ACCURACY (4 Digits)										
Voltage (mV) 0.1% + Current (mA) 0.1% +	20 20	100 10	20 40	100 20						
ENVIRONMENT CON	DITION	150								
Operation Temp Storage Temp Operating Humidity Storage Humidity	0°C~40°C -25°C~70°C 20%~85% RH; No condensation 90% RH or less; No condensation									
OTHER										
Yes USB/LAN/GPIB(Option) 100Vac ~ 240Vac, 50Hz ~ 60Hz, single phase 214(W)×124(H)×350(D) mm										
Weight										
	Approx. 5.2kg	Approx. 5.2kg	Approx. 6.8kg	Approx. 6.8kg						

ORDERING INFORMATION

PSB-1400L 40V/40A/400W Programmable Multi-Range D.C. Power Supply PSB-1400M 160V/10A/400W Programmable Multi-Range D.C. Power Supply PSB-1800L 40V/80A/800W Programmable Multi-Range D.C. Power Supply PSB-1800M 160V/20A/800W Programmable Multi-Range D.C. Power Supply

ACCESSORIES :

CD ROM (User Manual, Programming Manual) x 1, Power cord for UL/CSA or PSE (Region dependent), Output terminal cover, Type A-B USB cable, PSB-106 Basic accessory kit:

M4 terminal screws and washers x 2, M8 Terminal bolts, Nuts and washers x 2, Analog control protection dummy x 1, Analog control lock level x 2, Short bar x 1

ODTIONAL ACCESSORIES

PSW-001	Analog remote control connector kit
PSW-002	Simple IDC tool
PSW-003	Contact removal tool
PSB-101	Cable for 2 units of PSB-1000 in parallel connection
PSB-102	Cable for 3 units of PSB-1000 in parallel connection
PSB-103	Cable for 4 units of PSB-1000 in parallel connection
PSB-104	Cable for 2 units of PSB-1000 in series connection
PSB-105	GPIB card
PSB-106	Basic accessory kit :
	M4 Terminal screws and washers x 2, M8 Terminal bolts, Nuts and washers x 2, Analog control protection dummy x 1, Analog control lock level x 2, Short bar x 1
GRA-418-J	Rack Mount Kit(JIS)
GRA-418-E	Rack Mount Kit(EIA)
GTL-123	Test leads:1x red,1x black
FREE DOW	NLOAD
Driver	Labview Driver

Rear Panel



PSB-101 Cable for 2 units of PSB-1000 in parallel connection



PSB-102 Cable for 3 units of PSB-1000 in parallel connection



PSB-103 Cable for 4 units of PSB-1000 in parallel connection



PSB-104 Cable for 2 units of PSB-1000 in series connection



PSB-105 GPIB card





PSH-Series



FEATURES

- * Wide Input Voltage Range and High Power Factor (P.F)
- * High Efficiency and High Power Density
- * Constant Voltage and Constant Current Operation
- * Over Voltage , Over Current and Over Temperature Protection
- * Self-Test and Software Calibration
- * Output ON/OFF Control
- * Low Ripple and Noise
- * LCD Display
- * Built-in Buzzer Alarm
- * Standard Interface: RS-232C
- * Optional Interface : GPIB (IEEE-488.2)
- * LabVIEW Driver

The PSH-Series is a single output from 360W to 1080W, programmable switching DC power supply. OVP, OCP and OTP protect the power supply and loads from unexpected conditions. Remote sensing adds an extra level of precision by compensating cable losses between loads. The bright LCD with simultaneous parameter outputs allows effortless operation. Self-test and software calibration features also reduce maintenance overhead. SCPI commands and LabVIEW driver access through the RS-232C or the optional GPIB interface allow remote control and ATE software development capability. Modular architecture, dedicated rear-panel output, and the 19 inch 4U rack mounting option ensure that the PSH-Series is optimized for large systems.

SPECIFICATIO	PSH-2018A	PSH-3610A	PSH-3620A	PSH-3630A
OUTPUT	P3H-2010A	P3H-3010A	P3H-30ZUA	P3H-3030A
	201/	201	201	201
Voltage Current	20V 18A	36V 10A	36V 20A	36V 30A
REGULATION (C	0.70	TUA	20A	30A
		< 0.00 E 11	<0.00/ E 1/	< 0.20/ E 1/
Load	≤ 0.1%+5mV	≤ 0.1%+5mV	≤0.1%+5mV	≤ 0.1%+5mV
Line	≤ 0.05%+5mV	≤ 0.05%+5mV	≤0.05%+5mV	≤ 0.05%+5mV
REGULATION (C				
Load	≤ 0.2%+5mA	≤ 0.2%+5mA	≤0.2%+10mA	≤ 0.2%+15mA
Line	≤ 0.2%+5mA	≤ 0.2%+5mA	≤0.2%+10mA	≤ 0.2%+15mA
RIPPLE & NOISE				
Voltage (mVrms)	≤ 10mVrms	≤ 10mVrms	≤ 10mVrms	≤ 10mVrms
Voltage (mVp-p)	≤ 100mVp-p	≤ 100mVp-p	≤ 100mVp-p	≤ 100mVp-p
	20Hz-20MHz	20Hz-20MHz	20Hz-20MHz	20Hz-20MHz
Current (mArms)	≤ 0.2%	≤ 0.2%	≤0.2%+20mA	≤ 0.2%+40mA
RESOLUTION				
Voltage	10mV	10mV	10mV	10mV
Current	10mA	10mA	10mA	10mA
PROGRAM ACCU	JRACY			
Voltage	≤ 0.05%+25mV	≤ 0.05%+25mV	≤ 0.05%+25mV	≤ 0.05%+25mV
Current	< 0.2%+30mA	< 0.2%+30mA	< 0.2%+30mA	< 0.2%+30mA
		_ 0.270+30ffiA	_ 0.270+30TTA	_ 0.276+30ffiA
READBACK RESC		0 0 1 1		1 0 1 1
Voltage Current	Same as Resolution Same as Resolution	Same as Resolution Same as Resolution	Same as Resolution Same as Resolution	As Resolution As Resolution
READBACK ACCU		Same as Resolution	Same as Resolution	As Resolution
	1	C A	C A	A - D A
Voltage Current	Same as Program Accuracy Same as Program Accuracy	Same as Program Accuracy Same as Program Accuracy	Same as Program Accuracy Same as Program Accuracy	As Program Accura As Program Accura
		Same as Program Accuracy	Same as Program Accuracy	As Program Accura
READBACK TEMP.		<0 -	<	< ·0
Voltage (25 <u>+</u> 5°€)		≤ 100ppm/ °C	≤100ppm/°C	≤100ppm/°C
RESPONSE (Rise		- 4/2 a	<u> </u>	2 33
Voltage Up	≤150mS	≤150mS	≤150mS	≤150mS
(10%~90%)	(≤95% rating load)	(≤95% rating load)	(≤95% rating load)	(≤95% rating load)
Voltage Down	≤150mS	≤150mS	≤150mS	≤150mS
(90%~10%)	(≥10% rating load)	(≥10% rating load)	(≥10% rating load)	(≥10% rating load)
RECOVERY TIME	50% Step Load Change	From 25%~75%)		
CV Mode	≤ 2mS	≤ 2mS	≤2mS	≤2mS
PROTECTION				
	V	V	V	
OVP/OCP/OTP Rush Current				
	V	V	V	V
OUTPUT ON/OFF			v	
====	V	V		
INTERFACE				
	C; Optional : GPIB			
POWER SOUR	CE			
AC90V-250V, 50/	60Hz			
DIMENSIONS 8	WEIGHT			
	108(W)x142(H)x393(D)	108(W)x142(H)x393(D)	188(W)x142(H)x393(D)	268(W)x142(H)x393(D
		11 1 - 1 - 1 1 1 2 2 2	mm; Approx. 6.2kg	mm; Approx. 9.3kg

Rear Panel



ORDERING INFORMATION

PSH-2018A 360W Programmable Switching D.C. Power Supply 360W Programmable Switching D.C. Power Supply 720W Programmable Switching D.C. Power Supply 1080W Programmable

ACCESSORIES:

User manual x 1, Power cord x 1

OPTION

Opt. 01: GPIB Interface (Factory Installed)

OPTIONAL ACCESSORIES

GRA-403 Rack Mount Kit

GTL-232 RS-232C Cable, 9-pin Female to 9-pin, null Modern for Computer

GTL-122 Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm

GTL-248 GPIB Cable, Double Shielded, 2000mm

FREE DOWNLOAD

PC Software PC Software including Data Log; Remote Control Software

Driver Labview Driver

Note: When Opt.01 GPIB interface is ordered, the standard interface RS-232C will be deleted.



The PSP-Series is a single output, 200W, programmable switching DC power supply. OVL, OCL, OTP, and OPL protect the PSP-Series and its loads from unexpected conditions. The PSP-Series has a large LCD panel with output and parameter views and a key lock feature to prevent changing the settings. The PSP-Series is suitable for generic bench-top applications in laboratories and educational institutions.

PSP-603/405/2010



FEATURES

- * LCD Display
- * Output ON/OFF Control
- * 3 Step Fan Speed Control
- * Voltage/Current/Power Setting
- * Key Lock to Avoid Error Operation
- * Normal , +% & -% Output Operation Key
- * Standard Interface: RS-232C
- * Optional European Type Jack Terminal

European Type Jack Terminal



Rear Panel



OUTPUT	502	0	98	
Model	PSP-603	PSP-405	PSP-2010	
Voltage	0 - 60V	0 40V	0 - 20V	
Current	0 – 3.5A	0 -5A	0 – 10A	
VOLTAGE REGULATION				
Load	≤ 10mV ≤ 0.05%	≤ 10mV ≤ 0.05%	≤ 10mV ≤ 0.05%	
Line	≤ 0.05%	≤ 0.05%	≤ 0.05%	
CURRENT REGULATION			01	
Load	≤ 5mA	≤ 5mA	≤ 5mA	
Line	≤ 0.05%	≤ 0.05%	≤ 0.05%	
RIPPLE				
Voltage (mVrms)	< 20mV	< 20mV	< 20mV	
Current (mArms)	≤ 10mA	≤ 10mA	≤ 20mV ≤ 10mA	
RESOLUTION				
Voltage	20mV	10mV	10mV	
Current	10mA	10mA	10mA	
PROGRAM ACCURACY				
Voltage	+ 0.05%rdg+ 4digits	+ 0.05%rdg + 3digits	+ 0.05%rdg+ 3digits	
Current	± 0.1%rdg + 5digits	± 0.1%rdg + 5digits	+ 0.3%rdg + 10digits	
READBACK (METER) RESOL	UTION			
Voltage	Same as Resolution	Same as Resolution	Same as Resolution	
Current	Same as Resolution	Same as Resolution	Same as Resolution	
READBACK (METER) ACCUR				
Voltage Current	Same as Program Accuracy Same as Program Accuracy	Same as Program Accuracy Same as Program Accuracy	Same as Program Accurac Same as Program Accurac	
PROTECTION	Same as Program Accuracy	Same as Program Accuracy	Same as Program Accurac	
OVL/OCL/OPL/OTP		V		
OUTPUT ON/OFF CONTR				
	V	V	V	
DISPLAY	is a			
LCD				
INTERFACE (STANDARD)				
RS-232C				
POWER SOURCE				
AC 115V/230V±15%, 50/60	Hz			
DIMENSIONS & WEIGHT				

ORDERING INFORMATION

PSP-603 200W Programmable Switching DC Power Supply
PSP-405 200W Programmable Switching DC Power Supply
PSP-2010 200W Programmable Switching DC Power Supply

ACCESSORIES :

User manual x 1, Power cord x 1, Test lead GTL-104A x 1, European test lead GTL-204A x 1

OPTIONAL ACCESSORIES

GTL-232A RS-232C Cable

GRA-428 Rack Mount Kit, 19", 3U Size

FREE DOWNLOAD

PC Software RS-232C Remote Control Software

Switching D.C. Power Supply



The SPS-Series is a single output, 360W, switching DC power supply. OVP protects the SPS-Series and their loads from unexpected conditions. High regulation is maintained at 0.01%. Remote sensing adds an extra level of precision by compensating cable losses between loads. Turning the output On/Off from external device is available through Remote control terminals. The GPS-Series is an ideal solution for power-efficient bench-top or portable applications requiring high regulation.

SPS-1230/1820/2415/3610/606





FEATURES

- * Dual Measurement Display
- * 0.01 % High Regulation
- * Constant Voltage and Constant Current Operation
- * High Efficiency
- * High Power Density
- * Over Voltage Protection
- * Remote Output ON/OFF Control

SPECIFICATIONS OUTPUT										
OUTPUT	SPS-1230	SPS-1820	SPS-2415	SPS-3610	SPS-606					
Voltage	0 ~ 12V	0 ~ 18V	0 ~ 24V	0 ~ 36V	0 ~ 60V					
Current	0 ~ 30A	0 ~ 20A	0 ~ 15A	0 ~ 10A	0 ~ 6A					
CONSTANT VOLTAGE OPERATION										
Regulation	Line regulation	n≤5mV								
N. 1. T. 1. C.	Load regulation	on≤5mV								
Ripple & Noise	≤5mVrms, 10	00mVp-p 20Hz ~	20MHz							
Recovery Time	≤500µS									
	(50% Load ch	ange, Minimum	load 0.5A)							
Temp. Coefficient	≤ 100ppm /°	_								
Output Range	0 to rating vo	ltage continuous	sly adjustable							
CONSTANT CURRENT OP	ERATION									
Regulation	Line regulation	n ≤3mA								
	Load regulatio	Load regulation ≤3mA								
Ripple Current	≤3mArms (SP	≤3mArms (SPS-606)								
	≤5mArms (SP									
	≤10mArms (S	PS-2415)								
	≤10mArms (S	PS-1820)								
	≤30mArms (S	PS-1230)								
Output Range	0 to rating cur	rent continuously	adjustable							
	(HI/LO range	switchable)								
METER										
Туре	3 1/2 digit, 0.3	9" LED display								
Accuracy	± (0.5% of rdg	+ 2digits)								
INSULATION										
Chassis and Terminal	20MΩ or abov	e (DC 500V)								
Chassis and AC Cord	30MΩ or abov	e (DC 500V)								
POWER SOURCE										
AC 115V/ 230V± 15 %, 50/	/60Hz									
DIMENSIONS & WEIGHT	8									
128(W) x 151(H) x 295(D)	mm, Approx. 3.2	cg								

Rear Panel



ORDERING INFORMATION

SPS-1230 360W Switching D.C. Power Supply SPS-1820 360W Switching D.C. Power Supply SPS-2415 360W Switching D.C. Power Supply SPS-3610 360W Switching D.C. Power Supply SPS-606 360W Switching D.C. Power Supply

ACCESSORIES:

User manual x 1, Power cord x 1, Test lead GTL-203A x 1

Multiple Output Dual Range D.C. Power Supply



SPD-3606



FEATURES

- * Three Independent, Isolated Output
- * CH1/CH2 : Dual Output Range of 30V/6A or 60V/3A
- * CH3 Adjustable Output: 0.1~5V/3A
- * High Efficiency Power Conversion (Up to 25% Than Traditional Power Supply)
- * Remote Output On/Off Control
- * OVP to Protect the DUT
- * OTP to Protect SPD-3606 for Reducing the Repair Rate
- * Automatically Switches AC 115V/230V Source
- * Full Safety Design: Reverse Polarity, CH3 Overload Protection, Safe Output Setting , C.C./C.V. Mode
- * Compact Size, Light Weight
- * Low Fan Acoustic Noise with Fan Speed Control Circuit
- * Voltage/Current Protection Knob(Option)
- * Optional European Jack Type Terminal

European Type Jack Terminal



Rear Panel



GPS-001 Voltage/Current protection Knob



The SPD-3606 DC power supply provides 375W output capacity, three isolated outputs with dual-range for CH1 & CH2, highly efficient power conversion, low noise, high reliability, thorough protection, excellent value and a compact size. SPD-3606 creates a new bench mark for satisfying mainstream power supply demands. CH1 & CH2 offer dual-range output either at 30V/6A or 60V/3A per channel to accommodate a wide range of applications. SPD-3606 supports series and parallel tracking, allowing the CH1 and CH2 to be internally connected in series or parallel providing flexible output (30V/12A, 60V/6A, or 120V/3A). High power density and high power conversion efficiency lets SPD-3606 consume less energy making for a greener power supply. In addition, the high power density makes SPD-3606 weigh less than half and occupy much less space compared to linear power supplies. To avoid damage caused by improper operation, it also has OVP and OTP. The dual range AC input accepts both 115V and 230V inputs. When the instrument is on, devices can be connected and voltage/current levels can be adjusted safely from the front panel by turning off the output using the Output on/off key. The optional voltage/current protection knobs can be used to prevent accidentally changing the output levels. These knobs are useful for automated testing at fixed output levels, such as in assembly lines or product inspections.

SPECIFICATIONS	
SPECIFICATIONS OUTPUT RATINGS	
	0 ~ 30V / 0 ~ 6A ; 0 ~ 60V / 0 ~ 3A
CH1/CH2 Independent CH1/CH2 Series	
	0 ~ 60V / 0 ~ 6A; 0 ~ 120V / 0 ~ 3A 0 ~ 30V / 0 ~ 12A; 0 ~ 60V / 0 ~ 6A
CH1/CH2 Parallel CH3	0.1 ~ 5V / 3A
	0.1 - 37 / 36
VOLTAGE REGULATION	<
Line	≤ 0.01% + 3mV
Load	≤ 0.01% + 5mV (rating current ≤ 6A)
	≤ 0.01% + 8mV (rating current≤ 12A)
Ripple & Noise	≤ 5mVrms (5Hz ~ 1MHz); ≤ 50mVpp (20Hz ~ 20MHz)
Recovery Time	≤ 100 μs(50% load change, minimum load 0.5A)
CURRENT REGULATION	I was a
Line	≤ 0.2% + 3mA
Load Diante & Maine	≤ 0.2% + 3mA ≤ 3mArms
Ripple & Noise	= 3mArms
TRACKING OPERATION	
Tracking Error	≤ 0.5% + 10mV of master
Series Regulation	≤ 300mV
Ripple & Noise	≤ 10mVrms (5Hz ~ 1MHz) ;≤ 100mVpp (20Hz ~ 20MHz)
OUTPUT ON/OFF RESPONSE	TIME
Voltage Up (10% ~ 90%)	≤ 100ms (≤ 95% rating load)
Voltage Down (90% ~ 10%)	≤ 100ms (≥ 10% rating load)
OVP	
Accuracy	± (0.5% of reading + 0.5V)
METER	
Туре	3 1/2 digit 0.5" LED display
Accuracy	± (0.5% of reading + 2 digits)
Resolution	100mV/10mA
INSULATION	
Chassis & Terminal	100M Ωor above (DC 1000V)
Chassis & AC code	100M Ωor above (DC 1000V)
TEMPERATURE COEFFICIENT	
Voltage	≤ 100ppm/ °C + 3mV
Current	≤ 150ppm/ °C + 3mA
REMOTE CONTROL	
Output On/Off	
FAN NOISE	
≤50dB	
OPERATION ENVIRONMENT	Г
Ambient temperature 0 ~ 40 ° C	; Relative humidity < 80%
STORAGE ENVIRONMENT	
Ambient temperature -10 ~ 70 °	°C ; Relative humidity≤70%
POWER SOURCE	
AC 115V/230V±15%, 50/60Hz	
DIMENSIONS & WEIGHT	
255 (W) x 145 (H) x 265 (D) mr	n : Approx 6kg
233 (11) 1 173 (11) 1 203 (13) 1111	, rippion one

ORDERING INFORMATION

SPD-3606 Multiple Output Dual Range D.C. Power Supply

ACCESSORIES :

User manual x 1, Power cord x 1, Test lead GTL-104A x 2, GTL-105A x 1 European Test Lead GTL-201A x 1, GTL-203A x 1, GTL-204A x 2

OPTIONAL ACCESSORIES

GPS-001 Voltage/Current protection Knob



GSM-20H10





FEATURES

- * Maximum Output ±210V/±1.05A/22W
- Built-in 4 Sequence Output Modes (Stair, Log, SRC-MEM, Custom), up to 2500 Points
- * OVP /OTP Protection Function
- * 0.012% Basic Measure Accuracy with 6½-digit Resolution
- * Variable Sampling Speed
- * SDM (Source Delay Measure) Cycle
- * 2-, 4-, and 6-wire Remote V-source and Measure Sensing
- Variable Display Digits
- * Built-in Limit Function
- * Built-in 5 Calculation Functions
- * 4.3" TFT LCD, Digital Number Keyboard
- * Built-in RTC Clock
- * Interface: RS-232, USBTMC, LAN, GPIB (Opt.)

GW Instek GSM-20H10 is a Source Measure Unit that provides highly stable DC power and instrument-grade 6½-digit multimeter measurements. While operating, it can be used as a voltage source, current source, voltmeter, ammeter, and ohmmeter, which is uniquely ideal for the evaluation of component characteristics and the test applications of production, including nanomaterials and components, semiconductor architecture, organic materials, high-efficiency illumination, passive components and material characteristics analysis, etc.

GSM-20H10 provides four-quadrant operation of ±210V/±1.05A/22W. The first and third quadrants operate as power supplies to supply power to the load. The second and fourth quadrants function as loads to consume power internally. Voltage value, current value and resistance value can be measured while operating the power supply or load function with an accuracy of 0.012% and a resolution of $1\mu V/10pA/10\mu\Omega$.

With respect to sampling rate, GSM-20H10 supports a sampling rate of up to 50k points/second, which can accurately analyze the characteristics of the DUT. With the large 4.3-inch screen, all measurement settings, parameters and results can be completely displayed on the screen. The SDM (Source Delay Measure) function is provided to delay sampling when the signal changes so as to prevent the unstable signal from being captured and cause misjudgment. There are four built-in sequence output modes (Stair, Log, SRC-MEM, Custom), which can support up to 2500 points of sequence variation output.

Pertaining to protection, GSM-20H10 provides OVP/OTP modes. The design of OVP allows users to self-define the range of OVP. OTP can effectively prevent errors caused by temperature drift during the test process. For interfaces, this product supports standard SCPI commands and provides RS-232, USBTMC, LAN, GPIB (optional) interfaces to meet users' different interface needs.



GSM-20H10

Rear Panel



SM-01/SM-02 Digital I/O Adapter



ORDERING INFORMATION

GSM-20H10 with GPIB Source Measure Unit GSM-20H10 Source Measure Unit

ACCESSORIES:

CD User manual x 1, Quick Start manual x 1, Test Lead GTL-207A x 1, Alligator Clip x 2

OPTIONAL ACCESSORIES

Digital I/O Adapter, Convert DB15 to DB9 + 8-pin micro-DIN SM-01 Digital I/O Adapter, Convert DB15 to DB37 + 8-pin micro-DIN SM-02

GTL-246 USB Cable (USB 2.0 A-B Type, approx.. 1200mm)

GPIB Cable, 2000mm GTL-248

> NOTE: 1. Speed = Normal (1 NPLC). For 0.1 PLC, add 0.005% of range to offset specifications, except 200mV, 1A ranges, add 0.05%. For 0.01 PLC, add 0.05% of range to offset specifications, except 200mV, 1A ranges, add 0.5%.

- 2. Required to reach 0.1% of final value after Command is processed. Resistive load. 10µA to 100mA range.
- 3. Overshoot into a fully resistive 100kΩ load, 10Hz to 1MHz BW, adjacent ranges: 100mV typical, except 20V/200V.
- 4. Maximum time required for the output to begin to change following the receipt of:SOURce:VOLTage{CURRent <nrf>. Command.

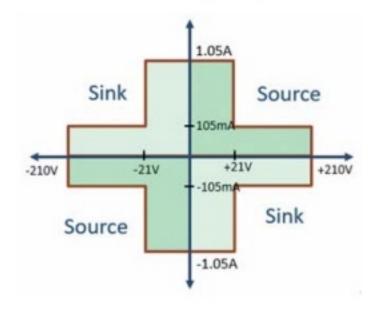
GRA-450-J Rack Mount kit

GRA-450-E Rack Mount kit

- 5. Reading rates applicable for voltage or current measurements, autorange off, filter off, display off, trigger delay = 0, and binary reading forma.
- Purely resistive lead. 1μA and 10μA ranges <65ms.
- 7. 1000 point sweep was characterized with the source on a fixed rang.
- 8. Pass/Fail test performed using one high limit and one low math limit.
- 9. Includes time to re-program source to a new level before making measurement.
- 10. Time from falling edge of START OF TEST signal to falling edge of END OF TEST signal.
- 11. Command processing time of :SOURce:VOLTage|CURRent: TRIGgered<nrf> Command not included.

SDECIEIA	CATIONS													
SPECIFIC	Voltage		±210V											
махимим	Current		±1.05A											
RANGE	Power		22W											
	Voltage Resolution Current Resolution		10pA	μV										
		Output Voltage	±21V / ±1.05A, ±2											
		Current Limit	Min. 0.1% of rang		Vm000.	mV ±2,00000V ±				±20.0000V		1	±200.000V	
		Programming Resolution &	Range Resolution		μV			10µV			100µV			1mV
		Accuracy*1	Accuracy	Accuracy $\pm (0.02\%+600\mu V)$ $\pm (0.02\%+600\mu V)$ $\pm (0.02\%+2.4mV)$ $\pm (0.02\%+2.4mV)$).02%+24mV)				
	DC Voltage	Load Regulation Line Regulation	0.01% of range + 0.01% of range	100μV										
		Overshoot		1% typical (full scale step,resistive load, 10mA range)										
		Recovery Time (1000% Load Change)	<250µs (within 0.	iOus (within 0.1% plus load regulation errors, 1A and 100mA compliance.)										
		Ripple and Noise	4mVrms(20Hz~1	MHz) / 10mVpp(20H	z~1MH	z)								
		Temperature Coefficient		specification)/°C (0°-	-18°C &	28"-50"C)								
		Output Current Voltage Limit	±1.05A / ±21V, ±1 Min. 0.1% of rang				500					100		at a
SOURCE		Programmed Source Resolution &	Range	±1.00000 μA		±10.0000μA	±	Αμ000.000	±	1.00000mA	±10.00000	пА	±100.000mA	±1.00000A
	DC Current	Acouracy *1	Resolution Accuracy	10pA ±(0.035%+600pA)		100pA ±(0.033%+2n	A) (A	1nA 031%+20n	Δ\ +m	10nA 034%+200nA)	100nA ±(0.045%+2	mA1	1μA ±(0.066%+20μA)	10μA ±(0.27%+900μA)
	DC Current	Load Regulation	0.01% of range +			±[0.00370721	nj zju.	2317072011	ny = [u.	034/0T20010Y	±[0.043,612	pro	Σησ.000/0720μη)	1(0.21/07500µ1)
		Line Regulation	0.01% of range											
		Overshoot Temperature Coefficient		A step, RL = 10kΩ, 20 specification)/°C (0°-										
		Output Settling Time *2	100µs typical time		10 0 0	20 -30 -0								
		Output Rise Time (±30%)		, 100mA compliance ;	150µs, 2	0V range, 100n	A compliance							
		DC Floating Voltage Remote Sense	Up to 1V drop per	ated up to ±250VDC load lead	100	661	100							
	General	Compliance Accuracy	Add 0.3% of range	and ±0.02% of readi										
		Range Change Overshoot *3 Minimum Compliance Value	Adjacent range ch 0.1% of range	anges between 200m	V, ZV and	d 20V ranges, 1	00mV typical							
		Command Processing Time 4		ns. Autorange Off: 7n	15									
		Input Resistance	>10 GΩ		. 60		6						77	
	Voltage	Measurement Resolution &	Range Resolution		Vm000.			±2.00000	W		±20.0000V		3	±200.000V
	Tomage	Acouracy	Accuracy	±(0.012	%+300µ		±	0.012%+3	00μV)	3	±(0.015%+1.5m)	V)	±[0.	.015%+10mV)
		Temperature Coefficient		specification)/°C (0°-	-18°C &	28"~50°C)	Š.			8			88	
		Voltage Burden (4-wire mode)	< 1mV Range	±1.00000µA		±10.0000µA	±	Αμ000.001	±	1.00000mA	±10.00000	πA	±100.000mA	±1.00000A
	Current	Programmed Source Resolution & Accuracy *1	Resolution	10pA		100pA		1nA	. 31	10nA	100nA		1μΑ	10μΑ
		Temperature Coefficient	+(0.1 v. accuracy s	±(0.029%+300pA) pecification) / °C (0°-		±(0.027%+700 28"~50°C1	pA) ±(0	025%+6n/	t) ±(0	.027%+60nA)	±(0.035%+60	OnA)	±(0.055%+6µA)	±(0.2256+570μA)
		reinpersore Coellicons	a just in accuracy a	<2.00000 D	10 0 00		0000Ω		20.0000Ω	20	0.000Ω	2.0	0000kΩ	20.0000kΩ
METERINOMENE			Resolution	***		10)μΩ		100μΩ		lmΩ		OmΩ	100mΩ
MEASUREMENT			Test current					±/0.1%+	100mA 0.003Ω), Norr		10mA 0.03Ω), Normal		ImA 0.3Ω), Normal	100μA ±(0.06%+3Ω), Normal
		Range	Accuracy				+Meas.VACC	±(0.07%+	0.001Ω), Enha	nced ±(0.05%+0.	01 Ω), Enhanced	±(0.05%+0	.1Ω), Enhanced	±(0.04%+1Ω), Enhanced
			Resolution			ΩM000 Ω00	2	0.0000MΩ 100Ω	_	.000MΩ 1kΩ	>200	Ω M000.		
	Resistance		Test current	10μΑ 5μΑ			0.5μΑ		00nA		-			
			Accuracy	±(0.07%+30Ω), No			00Ω), Normal		6+1kΩ), Norm	_	10kΩ), Normal	Source IAC	C+Meas.VACC	
		Temperature Coefficient	±(0.15 × accuracy	±(0.05%+10Ω), Enh specification)/°C (0°-			DΩ), Enhanced	±[U/U5764	-500Ω), Enhan	CEG ±(0.35%+)	škΩ), Enhanced	<u> </u>		
		Source I mode, Manual OHMS	Total uncertainty = I source accuracy + V measure accuracy (4-wire remote sense) Total uncertainty = V source accuracy + I measure accuracy (4-wire remote sense)											
		Source V mode, Manual OHMS 6-wire OHMS Mode		 V source accuracy + tive ohms guard and 					except 1A rang	e). Accuracy is loa	d dependent			
	8	Guard Output Impedance	<0.1Ω in ohms m		50010 30		a compar conte	m some ty		NJ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
	Meximum Range C Meximum Meesum		75/second 40ms (fixed source	al es										
	maconium mossor		NPLC / Trig		asure		Si	urce-Meas	ure 19	Source-	Measure Pass/Fa	il test +8, +9	Mean	sure Memory +9
		Speed	Origin	TO MEMORY		O GPIB	TO MEMO	_	TO GPIB	TO MEN		O GPIB	TO MEMORY	
	Sequence Reading Rates *7	Fast 488.2	0.01 / internal 0.01 / external	2081 (2030) 1239 (1200)		98 (1210) 79 (1050)	1551 (151:		1000 (900) 916 (835)	902 (90 830 (8)		09 (840) 56 (780)	165 (162) 163 (160)	164 (162) 162 (160)
	(rdg./second) for	Medium	0.1 / internal	510 (433)	5	09 (433)	470 (405)		470 (410)	389 (3-	43) 3	88 (343)	133 (126)	132 (126)
	60Hz (50Hz)	488.2 Normal	0.1 / external 1 / internal	438 (380) 59 (49)		38 (380) 59 (49)	409 (360) 58 (48)		409 (365) 58 (48)	374 (3: 56 (4:		74 (333) 56 (47)	131 (125) 44 (38)	131 (125) 44 (38)
SYSTEM		488.2	1 / internal	57 (48)		57 (48)	57 (48)		57 (47)	56 (4		56 (47)	44 (38)	44 (38)
SPEED+5	Single Reading	Speed	NPLC/ Trig		Mea	isure			Sou	rce-Measure *9		5	Source-Measure Pas	
	Operation Rates	Fast(488.2)	Origin 0.01 / internal		TO 256	GPIB (256)	3	}		TO GPIB 79 (83)		2	TO GP 79 (83	
	(rdg./second) for 60Hz (50Hz)	Medium(488.2)	0.1 / internal		167	[166]				72 (70)			69 (70)
	420000000000	Normal(488.2)	1 / internal NPLC / Trig			(42) isure			Source	34 (31) te Pass/Fail test			35 (30 ource-Measure Pas	
	Component Interface Handler	Speed	Origin			GPIB	2	3	200	TO GPIB			TO GP	IB .
	Time for 60Hz	Fast	0.01 / internal			(1.08 ms)				ms (0.5 ms)		2	4.82 ms (5.	
	(50Hz) 45, 410	Medium Normal	0.1 / internal 1 / internal			(2.9 ms) (20.9 ms)				ms (0.5 ms) ms (0.5 ms)		5	6.27 ms (7. 21.31 ms (2	
	Load Impedance	1000000	Stable into 20,000			4				no (es ma)			2000 000 100	
	Common Mode Vo	/oltage	250VPk 250VDC											
	Common Mode Iso		>10GΩ, <1000pF											
	Over Range			urce and measure										
	Max. Voltage Drop Max. Sense lead Re	sistance	5V 1MΩ											
	Sense Input Imped	ence	>100GΩ											
	Guard Offset Volta Source Output Mo		<150µV, typical Fixed DC level. Mi	amony List (missed 5	ction) C	tair flinear and	log/s							
SYSTEM	Source Memory Lis		Fixed DC level, Memory List (mixed function), Stair (linear and log) 100 points max.											
GENERAL	Memory Buffer		5,000 readings @	5 digits (two 2,500 po						p. Lithium battery	backup(3 yr + ba	ttery life)		
	Programmability Digital I/O Connec	tor		, RS-232 ; 5 user-defin Start of test, end of tes						/Relay Drive outo	ds (33V/@500	dinde)		
	Remote Interface		USB/GPIB/LAN/F	IS-232						, way sent ough	prigodina	, 5.000)		
	Insulation			nal: 20MΩ or above						21 20 21	4. 4			
	Operation Environme Storage Environme			de: ≤ 2000m Ambient C ~ 70°C; Humidity: <		ture: 0 – 40°C	Kelative humidit	y: ≤ 80%;	nstallation cat	egory: II, Pollution	degree; 2			
	Input Power		100-240VAC, 50-6											
	Power Consumption Dimensions & Wei		30W 214 /WA v 86 (H)	356 5 101 4-	or 4 of									
	LAIMERISIONS & WE	grit.	214 (W) x 86 (H) x 356.5 (D) mm, Approx. 4.8kg											

MAXIMUM OUTPUT: ±210V/±1.05A/22W

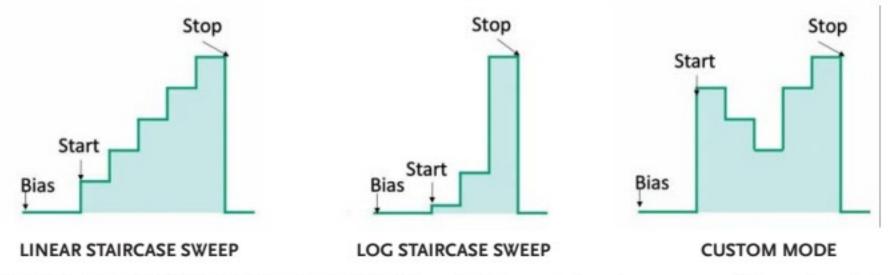


The power source output of the GSM-20H10 has two ranges.

The voltage range is ± 21 volts, and the current is $\pm 1.05A$. The voltage range is ± 210 volts, and the current range is ± 105 mA. The power capacity is 22W.

Provide a full range of four-quadrant measurement without duty cycle limit.

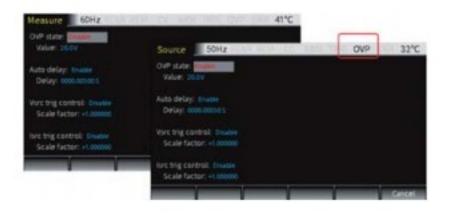
BUILT-IN 4 SEQUENCE OUTPUT MODES, UP TO 2500 POINTS



GSM-20H10 Source Measure Unit provides four sequence output modes: linear staircase, log staircase, SRC-MEM (source memory) and Custom (self-defined).

With these output modes, users can quickly generate output as needed. The total number of sequence points is 2,500.

OVP/OTP PROTECTION FUNCTION



In terms of protection, GSM-20H10 provides OVP/OTP protection modes; in the design of OVP, users can define the range of OVP, and the protection of OTP can effectively prevent errors caused by temperature drift during the test process.

0.012% BASIC MEASURE ACCURACY WITH 6½ DIGIT RESOLUTION



GSM-20H10 provides a measurement accuracy of up to 0.012%, and provides a meter display function of up to 6½ digits, allowing users to have more accurate results when measuring small signals...

VARIABLE SAMPLING SPEED

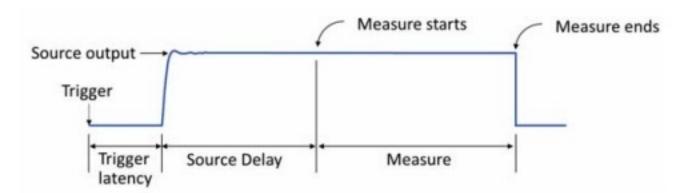


The sampling rate of GSM-20H10 is variable. Therefore, users can choose the sampling rate from 0.01 PLC to 10 PLC according to their needs.

SAMPLING MODE	FAST	MEDIUM	NORMAL	HIGH	OTHER
Speed, NPLC	0.01	0.1	1	10	User defined
Digit	3½	4½	5½	6½	Selectable

Where NPLC represents the number of power line cycles, for example, AC power frequency is 50Hz, 1 PLC means 20ms, 2 PLC means 40ms, and so on.

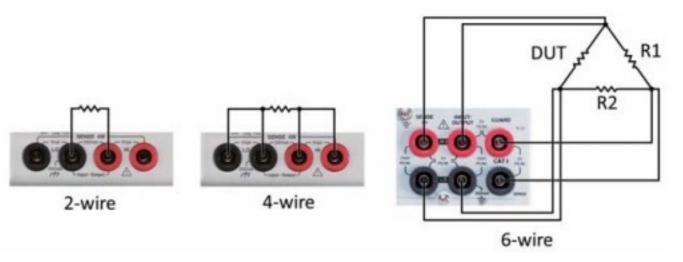
SDM (SOURCE DELAY MEASURE) CYCLE



The initial state of the source output may be unstable. If the meter starts measuring after the source is output, users can set the source delay to start the meter measurement after passing the unstable period so as to obtain stable measurement results.

GSM-20H10 Source Measure Unit delay range is 0 to 9999.999 seconds.

2-, 4-, AND 6-WIRE REMOTE V-SOURCE AND MEASURE SENSING



Other than 2-wire, GSM-20H10 also provides 4-wire and 6-wire resistance measurements.

4-wire measurement eliminates the effect of lead resistance, realizing accurate measurement of small resistances below 100ohm at high currents. 6-wire combining 4-wire connection and the protection of ohm characteristics eliminate the effects of internal parallel resistance, realizing the resistance measurement of a tiny wire.

VARIABLE DISPLAY DIGITS



The display bits of GSM-20H10 are variable. Therefore, users can choose the number of display bits among 3.5, 4.5, 5.5, and 6.5 bits according to their needs.

BUILT-IN LIMIT FUNCTION



GSM-20H10 has three built-in Pass/Fail limit line tests with a total of 11 sets.

BUILT-IN 5 CALCULATION FUNCTIONS

- Power = V*I
- CompOhms = $\frac{(V2-V1)}{(I2-I1)}$
- Vceoff(%) = $\left[\frac{\Delta R}{\left\{R2 + \Delta V\right\}}\right]$ + 100%
- VarAlpha , $\alpha = \frac{log(l2+l1)}{log(v2+V1)}$
- Dev = $\left[\frac{(X-Y)}{Y}\right]$ * 100%



GSM-20H10 provides five built-in calculation functions: Power, Offset Compensation Ohms, Voltage Coefficient, Varistor Alpha, and Percent Deviation.

Programmable High Precision D.C. Power Supply



PPH-1503





PPH-1503D/1506D/1510D



FEATURES

- * 3.5"TFT LCD Display
- High Measurement Resolution: 1mV/0.1µA for 5mA range.
- * Transient Recovery Time: ≦40µS within 100mV; <80µs within 20mV
- * Current Sink Function
- * Pulse Current Measurement (Pulse width
- * Long Integration Current Measurement
- * Built-in DVM Measurement Function
- * Sequence Function (Sequence power output)
- * Built-in Battery Simulation Function (CH1 of PPH-15xxD)
- * OVP, OCP, OTP & Temperature Display for Heat Sink
- * Support USB (Device & Host)/GPIB/LAN
- * Five Groups of Save/Recall Setting
- * External Relay Control

PPH-1503 Rear Panel



PPH-1503D/1506D/1510D Rear Panel



PPH-Series high precision measurement capability achieves the maximum resolution of 1mV/0.1µA and the smallest pulse current width of 33µs that satisfy customers' measurement application requirements of high resolution and pulse current. Fast load current variation will result in voltage sag for general power supplies that will have an impact on DUT's internal circuit operation. PPH-Series is equipped with the excellent transient recovery time, which can, in less than 40μs, recover the output voltage to within 100mV of the previous voltage output when the current level changes from 10% to 100% of the full scale. Furthermore, conventional power supplies do not have sufficient response speed to promptly respond to set voltage value once the set voltage is changed. PPH-15xxD has a rise time of 0.2ms and a fall time of 0.3ms, which are 100 times faster than that of conventional power supplies. Therefore, PPH-15xxD can provide DUT with a stable output voltage even when DUT is operating under large transient current output. The internal high-speed sampling circuit design of PPH-15xxD, with the sample rate of 64K, can conduct pulse current measurement without using a current probe and oscilloscope. The current read back accuracy is 0.2%+1μA (equals to 11μA) at 5mA range, and the read back resolution is 0.1µA that allow DUT to be measured with a high accuracy level. Unlike battery, general power supplies, which do not have the characteristics of fast transient recovery time, can not maintain a stable power supply for cellular phone, wireless device, and wearable device which produce large transient pulse current load for hundreds of µs to dozens of ms when in use. PPH-15xxD, different from general power supplies, has the characteristics of fast transient recovery time. While simulating battery to output pulse current, PPH-15xxD can quickly compensate the voltage drop caused by pulse current. PPH-15xxD's CH1 has the built-in battery simulation function, which can define output impedance settings so as to accurately simulate battery's impedance characteristics during battery discharge. Fast transient recovery time and built-in battery simulation function together facilitate PPH-15xxD to accurately simulate battery's real behavior pattern so as to conduct product tests.

PPH-15xxD is not only suitable for simulating battery, charger and supplying power to DUT, but also ideal for simulating an electronic load to conduct discharge tests with its sink current capability. The sink current function allows PPH-15xxD to simulate a voltage source with the sink current capability. The maximum sink current of PPH-15xxD's CH1 is 3.5A and for CH2 is 3A. Long integration current measurement can be utilized to conduct average current measurement for periodical pulse current in a long period of time that is applied to analyze power consumption for a period of time. One of the applications is to measure the average power consumption of a cellular phone in use so as to conduct the internal RF module parameter analysis. The maximum pulse current measurement range of CH1 is 5A and for CH2 is 3A. The built-in sequence function of CH1 provides users with 1000 steps to edit sequential outputs, including voltage, current and execution time. The built-in DVM function of CH2 has a voltage range from 0 to +20VDC that saves users the cost of purchasing an additional voltage meter.

PPH-15xxD provides OTP function and shows heat sink temperature on the upper right corner of the display screen. Other than that, features such as five sets of system setting values for the SAVE/RECALL function, 10 sets of Power On Setup Settings, Key-Lock function to prevent unauthorized inputs, temperature-controlled fan to reduce noise, hardcopy to save screen information, and external relay control device together augment PPH-15xxD's usability. PPH-Series supports test requirements of Profile1, Profile2 and Profile3 from USB Power Delivery(PD) constructed by USB-IF association.

SELECTION GUIDE

Model	PPH-1503	PPH-1503D	PPH-1506D	PPH-1510D	
Channel	1	2	2	2	
Dual Range Output Channel 1 Channel 2	0~15V/0~3A or 0~9V/0~5A	0~15V/0~3A or 0~9V/0~5A 0~12V/0~1.5A	0~15V/0~3A or 0~9V/0~5A 0~12V/0~3.0A	0~15V/0~3A or 0~9V/0~5A Rear Terminal: 0~10A(0~ 4.5V) 0~12V/0~3.0A	
Display	3.5 Inch TFT LCD	3.5 Inch TFT LCD	3.5 Inch TFT LCD	3.5 Inch TFT LCD	
Current Measurement Range	5A/5mA	5A/500mA/ 5mA(CH1)	5A/500mA/ 5mA(CH1)	10A/500mA/ 5mA(CH1)	
cv&cc	1	1	1	1	
Built-in DVM Measurement Function	1	✓ (CH2)	✓ (CH2)	✓ (CH2)	
Pulse Current Measurement	1	1	1	1	
Long integration Current Measurement	1	1	1	1	
Battery Simulation	NA	√ (CH1)	√ (CH1)	✓ (CH1)	
Automated Sequential Ouput	1	✓ (CH1)	✓ (CH1)	✓ (CH1)	
High Measurement Resolution	√ (1mV/0.1 µA)	✓ (1mV/0.1 µA)	✓ (1mV/0.1 µA)	✓ (1mV/0.1 µA)	
Sink Current Capability	✓ (Max:2A)	✓ (Max: 3.5A)	✓ (Max: 3.5A)	✓ (Max: 3.5A)	
Selectable Output From Front or Rear Panel	1	1	1	1	
Relay Output Control	1	1	1	1	
Memory	5 Sets	5 Sets	5 Sets	5 Sets	
Sample Rate	60K	64K	64K	64K	
Lock Function	1	1	1	1	
Protection Function	OVP/OTP/OCP	OVP/OTP/OCP	OVP/OTP/OCP	OCP OVP/OTP/OCP	
Four Wire Output Open Circuit Protection	NA	1	1	1	
Temperature Display for Heat Sink	NA	1	1	1	
Standard Interface: GPIB LAN, USB, Analog Control USB Interface LAN	√ (CDC) √	√ (TMC)	✓ (TMC)	✓ (TMC)	

ORDERING INFORMATION

PPH-1503 (0-15V/0-3A or 0-9V/0-5A)High Precision DC Power Supply

PPH-1503D (CH1:0-15V/0-3A or 0-9V/0-5A;CH2:0-12V/0-1.5A) High Precision Dual Channel Output DC Power Supply (CH1:0-15V/0-3A or 0-9V/0-5A;CH2:0-12V/0-3A)High Precision Dual Channel Output DC Power Supply PPH-1506D PPH-1510D (CH1:0-15V/0-3A or 0-9V/0-5A,0-4.5V/0-10A(Rear terminal);CH2:0-12V/0-3A)High Precision Dual Channel

Output DC Power Supply

ACCESSORIES :

CD (User manual x1, Quick start manual x1), Power cord (Region dependent), Test lead GTL-207A x 1, GTL-203A x 1, GTL-204A x 1

OPTIONAL ACCESSORIES

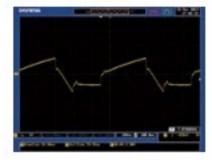
GTL-246 USB Cable (USB 2.0, A-B Type) GRA-450-J Rack Mount kit GRA-450-E Rack Mount kit

SPECIFICATIONS	BB11 3 500			221125252		pp		
Model	PPH-1503	PPH-1503D		PPH-1	506D	PPH-1	510D	
OUTPUT RATING	1	2		2	10	2		
Number of Output Channel Channel No.	Ch 1	Ch 1	Ch 2	Ch 1	Ch 2	Ch 1	Ch 2	
Power	45W	45W	18W	45W	36W	45W	36W	
Voltage	0 ~ 15V or 0 ~ 9V 0 ~ 3A or 0 ~ 5A	0 ~ 15V or 0 ~ 9V 0 ~ 3A or 0 ~ 5A	0 ~ 12V 0 ~ 1.5A	0 ~ 15V or 0 ~ 9V 0 ~ 3A or 0 ~ 5A	0 ~ 12V 0 ~ 3.0A	0 ~ 15V or 0 ~ 9V 0 ~ 3A or 0 ~ 5A	0 ~ 12V 0 ~ 3.0A	
Current	0 ~ 3A or 0 ~ 5A	0 ~ 3A or 0 ~ 5A	0 ~ 1,5A	U ~ 3A OF U ~ 5A	0 ~ 3.UA	0 ~ 3A or 0 ~ 5A Rear:0-10A (under 0-4.5V		
Output Voltage Rising Time Output Voltage Falling Time STABILITY	0.15ms (10% ~ 90%) 0.65ms (90% ~ 10%)	0.20ms (10% ~ 90%) 0.30ms (90% ~ 10%)		0.20ms (10% ~ 90%) 0.30ms (90% ~ 10%)		0.20ms (10% ~ 90%) 0.30ms (90% ~ 10%)		
Voltage	0.01%+0.5mV	0.01%+3.0mV		0.01%+3.0mV		0.01%+3.0mV		
Current REGULATION (CV)	0.01%+50 μ A	_		_		_		
Load	0.01%+2mV	0.01%+2mV		0.01%+2mV		0.01%+2mV		
Line REGULATION (CC)	0.5mV	0.5mV		0.5mV		0.5mV		
Load	0.01%+1mA	0.01%+1mA		0.01%+1mA		0.01%+1mA		
Line	0.5mA	0.5mA		0.5mA		0.5mA		
RIPPLE & NOISE (20Hz~20I CV p-p	8mV	≤5A: 8mVp-p(20Hz~20MHz)		≤5A: 8mVp-p(20Hz~20MHz)		≤5A: 8mVp-p(20Hz~20MHz)		
2001-0-0						>5A:12mVp-p(20Hz~20MHz)		
CV rms CC rms	1mV	3mV(0~1MHz)		3mV(0~1MHz)		3mV(0~1MHz)		
PROGRAMMING ACCURAC								
Voltage Current(Ch1:5A,10A/CH2:1.5A,3A)	0.05%+10mV 0.16%+5mA	0.05%+10mV 0.16%+5mA(5A/1.5A)	0.05%+10mV 0.16%+5mA(5A(1.5A)		0.05%+10mV 0.16%+5mA(5A/3A)		0.05%+10mV 0.16%+5mA(5A/3A)	
Current (500mA)		0.16%+0.5mA	_	0.16%+0.5mA	_	0.16%+0.5mA		
Current (5mA)		0.16%+5μΑ		0.16%+5μA		0.16%+5μA		
READBACK ACCURACY	0.000/.0.14	0.000/ . 2 . 11		0.050/ 2.11		La aradi a ini	0.0004	
Voltage Current(Ch1:5A,10A/CH21.5A,3A)	0.05%+3mV 0.2%+400μA(5A)	0.05%+3mV 0.2%+400μA(5A)	0.05%+3mV 0.2%+400µA	0.05%+3mV 0.2%+400μA(5A)	0.05%+3mV 0.2%+400µA	0.05%+3mV 0.2%+400μA(5A)	0.05%+3mV 0.2%+400uA	
Current (500mA)	- 0.276+400μA(5A)	0.2%+400μA(5A) 0.2%+100μA	0.2/61400µА	0.2%+400µA(5A) 0.2%+100µA	0.2/0T400µA	0.2%+400μA(5A) 0.2%+100μA	0.2/0740UµA	
Current (5mA)	0.2%+1μA	0.2%+100µA 0.2%+1µA	0.2%+1μA	0.2%+100µA 0.2%+1µA	0.2%+1μΑ	0.2%+100μΑ	0.2%+1μA	
RESPONSE TIME		10						
Transient Recovery Time (Response to 1000% Load Change)	<40μS(within 100mV) <80μS(within 20mV)	<40μS(within 100mV, Rear) <50μS(within 100mV, Front) <80μS(within 20mV)		<40μS (within 100mV, Rear) <50μS (within 100mV, Front) <80μS (within 20mV)		<40μS(within 100mV, Rear) <50μS(within 100mV,Front) <80μS(within 20mV)		
PROGRAMMING RESOLUT	ION	Coops (main zenit)	25	(William Zonity)		(Volume 20114)	19	
Voltage	2.5mV	2,5mV	2,5mV	2,5mV	2,5mV	2,5mV	2,5mV	
Current (5A range)	1.25mA	1,25mA(5A)	1,25mA	1,25mA(5A)	1,25mA	1,25mA(5A)	1,25mA	
Current (500mA range) Current (5mA range)	_	0.125mA 1,25μA	-	0.125mA 1,25μA	3-	0.125mA 1,25μA	_	
READBACK RESOLUTION		1,23µn		1,23μπ		1,23µA		
Voltage	1mV	1mV	1mV	1mV	1mV	1mV	1mV	
Current (5A range) Current (500mA range)	0.1mA	0.1mA(5A)	0.1mA(1.5A)	0.1mA(5A)	0.1mA(3A)	0.1mA(5A)	0.1mA(3A)	
Current (5mA range)	 0.1μA	0.01mA 0.1µA	0.1μΑ	0.01mA 0.1μA	0.1μΑ	0.01mA 0.1μA	0.1μΑ	
PROTECTION FUNCTION	v. ipri	υ.τμΑ	0.1µA	υ.τμκ	υ.τμα	[υ.τμπ	υ.τμκ	
OVP Accuracy	50mV	Ch1: 0.8V	Ch2: 50mV	Ch1: 0.8V	Ch2: 50mV	Ch1: 0.8V	Ch2: 50mV	
OVP Resolution	10mV	10mV	10mV	10mV	10mV	10mV	10mV	
DVM	-0.0FW -2V	10 C	0.050/ .3	ı	-0.050/ -21/	ı	-0.050/ -21/	
DC Readback Accuracy(23°C±5°C) Readbck Resolution	±0.05%+3mV 1mV		±0.05%+3mV 1mV		±0.05%+3mV 1mV		±0.05%+3mV 1mV	
Input Voltage Range	0 ~ 20VDC	_	0 ~ 20VDC		0 ~ 20VDC	-	0 ~ 20VDC	
Maximum Input Voltage Input Resistance and Capacitance	100000MΩ		-3V, +22V 20M Ω		-3V, +22V 20M Ω		-3V, +22V 20M Ω	
PROGRAMMABLE OUTPUT				4				
Range		0.001 Ω ~ 1.000 Ω		0.001 Ω ~ 1.000 Ω		0.001 Ω ~ 1.000 Ω		
Programming Accuracy Resolution	100 m	0.5% + 10 m Ω 1m Ω	-8	0.5% + 10 m Ω 1m Ω	8	0.5% + 10 m Ω 1m Ω		
PULSE CURRENT MEASURE	EMENT		•				•	
Trigger Level	5mA ~ 5A, 5mA/Step	5mA ~ 5A, 5mA/Step		5mA ~ 5A, 5mA/Step		5mA ~ 5A, 5mA/Step		
High Time/low Time/ Average Time	33.3μs ~ 833ms, 33.3μs/Step	33.3μs ~ 833ms, 33.3μs/Step		33.3µs ~ 833ms,		33.3µs ~ 833ms, 33.3µs/Step		
Trigger Delay	0 ~ 100ms,10μs/Steps	3.3.μs/Step 0 ~ 100ms,10 μ s/Steps		33.3μs/Step 0 ~ 100ms,10 μ s/Steps		0 ~ 100ms,10μs/Steps		
Average Readings	1~100	1 ~ 100		1 ~ 100		1~100		
Long Integration Pulse Time Long Integration	1S ~ 63S 850ms(60Hz)/840ms(50Hz)~60s,or Auto time		15 ~ 63S 850ms(60Hz)/840ms(50Hz)~60s,or Auto time		1S ~ 63S 850ms(60Hz)/840ms(50Hz)~60s,or Auto time		15 ~ 63S 850ms(60Hz)/840ms(50Hz)~60s,or Auto tin	
Measurement Time	16.7ms/Steps(60Hz),20ms/Steps(50Hz)	16.7ms/Steps(60Hz),20ms/Steps(50Hz)		16.7ms/Steps(60Hz),20ms/Steps(50Hz)		16.7ms/Steps(60Hz),20ms/Steps(50Hz)		
Long Integration Trigger Mode OTHERS	Rising, Falling, Neither	Rising, Falling, Neither	2 24 127212 23	Rising, Falling, Neithe	T	Rising, Falling, Neithe	er .	
Output Terminal	Front/Rear Panel	Front/Rear Panel	Rear Panel	Front/Rear Panel	Rear Panel	Front/Rear Panel	Rear Panel	
DVM Input	Front/Rear Panel	<u></u>	Front Panel	-8	Front Panel	_	Front Panel	
Relay Control Connector	150mA/15V, 5V output, 100mA	150mA/15V, 5V output,	100mA	150mA/15V, 5V outpu	t, 100mA	150mA/15V, 5V outpu	ıt, 100mA	
Operation Temperature Operation Humidity	0 ~ 40°C ≤ 80%	0 ~ 40°C		0 ~ 40°C		0 ~ 40°C		
Storage Temperature	~ 80% -20°C ~ 70°C	< 80% -20°C ~ 70°C		< 80% -20°C ~ 70°C		< 80% -20°C ~ 70°C		
Storage Humidity	< 80%	< 80%		< 80%		< 80%		
PC REMOTE INTERFACES	CDIDILICOLIAN	CDID II ICD II 111		e pip ii iep ii ta		enn wen i ***		
Standard CURRENT SINK CAPACITY	GPIB/USB/LAN	GPIB/USB/LAN		GPIB/USB/LAN		GPIB/USB/LAN		
Sink Current Rating	2A(Vout≤5V); 2A-0.1*(Vout-5)	Ch1;0~4V:3.5A; 4~15V:3.5A-(0.25A/V)				Ch1:0~4V:3.5A; 4~15V:3.5A-(0.25A/V)		
MEMORY	(Vout>5V)	*(Vset-4V)	*(Vset-5V)	*(Vset-4V)	*(Vset-5V)	*(Vset-4V)	*(Vset-5V)	
Save/Recall	5 Sets	5 Sets		5 Sets		5 Sets		
POWER								
Input Power Power Consumption DIMENSIONS & WEIGHT	90 ~ 264VAC ; 50/60Hz 150W	90 ~ 264VAC ; 50/60Hz 160W		90 ~ 264VAC ; 50/60Hz 160W		90 ~ 264VAC ; 50/60Hz 160W		
DIMENSIONS & WEIGHT	222(W)x86(H)x363(D)mm; Approx 4.2kg	222(W)x86(H)x363(D)mm; Approx 4.5kg		222(W)x86(H)x363(D)mm; Approx 4.5kg		222(W)x86(H)x363(D)mm; Approx 4.5kg		

Programmable High Precision D.C. Power Supply

FAST RESPONSE TO LOAD AND VOLTAGE CHANGES



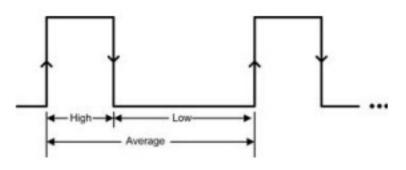


PPH-Series

Conventional Power Supply

When DUT such as cellular phone switches to idling, receiving or transmitting mode, the current drawn from power supply changes over tenfold. The sudden current change will cause the supplied voltage to drop as well. The conventional power supply is considered a dull device since it will take several milliseconds for the dropped voltage to return to the original level. PPH-Series is designed to simulate battery response when a significant voltage drop occurs. Recovery time of 40 µs or less is guaranteed when the maximum voltage drop is within 100mV.

PULSE CURRENT MEASUREMENTS



Pulse Current Measurement

PPH-Series DC power supply can perform current measurements for pulsing loads. To avoid false pulse detection, users can use a trigger level of up to 5A. All pulses, noise or other transients that are less than set trigger level will be ignored. The manual integration time range setting is 33 us to 833,333 us. Pulse current measurement can measure transient current consumption to provide the information for the allocation of power supply system for products' preliminary design, i.e. power supply circuits, battery selections for clients' product analyses. Portable communications products, i.e. RF modules and designs based upon blue tooth system can better use pulse current measurement function.

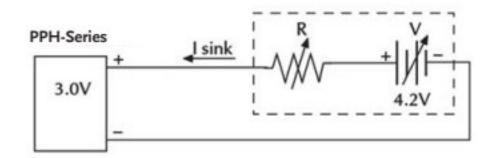
BUILT-IN DIGITAL VOLTMETER



DVM Input for PPH-Series

The built-in Digital Volt-Meter (DVM) of PPH-Series has a dedicated input terminal located on the front panel. With the DC voltage measurement range from 0 to +20VDC, PPH-Series not only provides power supply for DUT but also measures the voltage on DUT. The read back accuracy reaches ±(0.05%+3mV) and read back resolution is 1mV. Users are able to save the cost of purchasing an extra voltage meter. Furthermore, DVM measurements can be remotely controlled by SCPI commands via a PC.

SINK CURRENT FUNCTION



PPH-Series and an Electrical Potential Circuit

When connecting with an electric potential circuit and the output voltage of the tested electric potential circuit is greater than that of PPH-Series by approximately 0.3V to 2.5V, PPH-Series will automatically convert its power supply role to the sink current role acting as a load of voltage source. At this time, the voltage setting of PPH-Series can be regarded as the CV setting of an electronic load. A single PPH-Series can be used to charge battery and to simulate battery's load to consume power without extra instruments. PPH-Series is ideal for tests on battery and portable charger.

LONG INTEGRATION CURRENT MEASUREMENT



Long Integration Current Measurement

Long integration current measurement is to measure the average current of periodical pulse current in a long period of time. The measured pulse current must be a complete periodical waveform or multiple complete periodical waveforms. The total measurement time is up to 60 seconds. Measurements can be taken from pulse's positive edge trigger or negative edge trigger. Users can also take measurements from the beginning of power output. Long integration current measurement is to analyze power consumption for a period of time. For instance, users can measure the average power consumption of a cellular phone in use to analyze its internal RF module parameters.

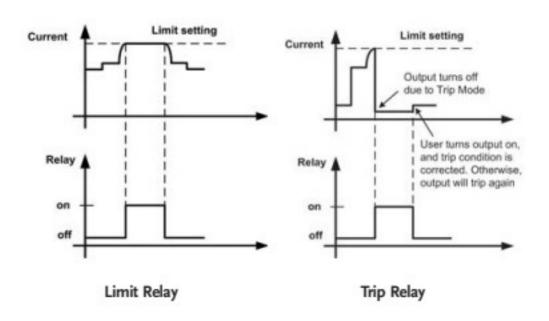
MEASUREMENTS FOR POWER CONSUMPTION ANALYSIS

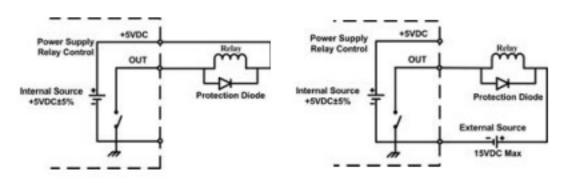


Voltage and Current Waveforms of the Receiving Signals of a Cellular Phone

One particular requirement of power consumption for portable wireless communications devices is Pulse Current. Portable devices such as cellular phones must transmit and receive (detect) signal periodically by drawing pulse current instead of constant current from battery to ensure devices' sound connection in network. To analyze the transient power consumption of a DUT, the peak of short pulse current and average current measurements over a long period of time are crucial. PPH-Series provides pulse current and long integration functions, the former can measure the peak value of a pulse, the latter can measure the average value of pulses. PPH-Series provides DUT with pulse current measurement and analyzes the transient power consumption to qualify the device for specified power consumption requirements.

G. EXTERNAL RELAY CONTROL





Relay Can be Driven by Using Internal +5V or External Power Source :

+5VDC Relay Output

Using the +5VDC relay output to drive an external relay. Ensure the current does not exceed 150mA.

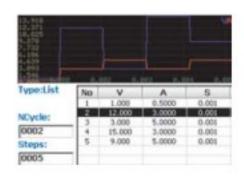
External Power Source

Using an external power source to drive the external relay. The voltage of the source can not exceed 15V and the current can not exceed 150mA.

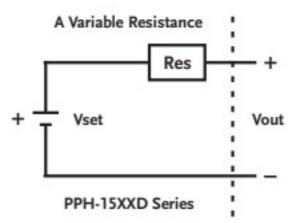
PPH-Series provides Limit relay and Trip relay modes and is equipped with corresponding output ports, in which output signals control external relay. Under Limit relay mode and the current limit is reached, PPH-Series will switch from Constant Voltage to Constant Current automatically. Under "Trip relay" mode and the current limit is reached, PPH-Series will turn output off. Furthermore, External Relay control can be used if users simultaneously use other devices for test system. When "Limit Relay" mode is selected and the current limit is reached, External

Relay control signal will go high and will return back to the low level when the current level goes back below the constant current setting. When "Trip Relay" mode is selected and the current limit is reached, the relay control signal will go high and the output is disabled. When the output goes back on and the current is less than the current setting, the relay control signal will back to the low level. Users can use relay control signal to control other devices for test system.

SEQUENCE FUNCTION



BATTERY SIMULATION FUNCTION



Battery Equivalent Model

Functional Setting Page for Sequence Function

For the practical usage, PPH-15xxD can be programmed to output a sequential voltage variation according to the requirements. There are 1000 steps for users to edit output voltage, current and execution time. Programmable execution time range is from 0.001 second to 3600 seconds and the resolution is 0.001 second. Programmable recurring frequency is from 1 to 9999 or it can be set to infinite execution (set recurring frequency to 0).

PPH-15xxD's battery simulation function is equivalent to a variable resistance circuit internally connected in series to simulate battery's output impedance. The function can also be regarded as a power supply with a variable internal resistor. The variable internal resistance range is from 0.000Ω to 1.000Ω and the resolution is $1m\Omega$. PPH-15xxD can be utilized as a battery or an ideal voltage source Vset to be connected with variable resistance Res in series. The following diagram shows battery simulation to produce output voltage Vout.

Programmable High-precision D.C. Power Supply



PPX-Series



FEATURES

- * CV, CC Priority Start Function
- ☆ Four Levels of Current Measurement Resolution (min. 0.1µA)/Two Levels of Voltage Measurement Resolution (min. 0.1mV)
- * Power Output ON/OFF Delay Function
- * Adjustable Voltage and Current Slew Rate
- * Bleeder Circuit Control
- * Delayed Over-current Protection(OCP Delay)
- * Sequential Power Output Function
- * Remote Sensing Function & Data Logger
- * 10 Sets of Memory Function
- * Over Voltage Protection, Under Voltage Limit, Over Current Protection, Over Temperature Protection, AC Alarm Function
- * Supports K-Type Thermocouple Temperature Measurement
- * Interfaces: USB, LAN, RS-232, RS-485, Analog Control; Opt: GPIB

The PPX-Series programmable high-precision DC power supplies include six models; PPX-1005 (10V/5A/50W), PPX-2002 (20V/2A/40W), PPX-2005 (20V/5A/100W)), PPX-3601 (36V/1A/36W), PPX-3603 (36V/3A/108W), and PPX-10H01 (100V/1A/100W). This series has the output low noise (0.35mVrms) and fast transient response characteristics (<50µs) of conventional linear power supplies. It also provides constant voltage and constant current priority output modes, and the series can also set the voltage and current rising/falling slew rates separately, and the delay time for the output to be turned on and off.

The PPX-Series has four current levels and two voltage levels to provide users with high-precision measurements, and via the Data Logger function, the measurement records can be stored in the USB for long-term measurement and recording of IoT devices, portable devices, wearable devices, and sensor components.

In order to extend the use time of portable devices and wearable devices, manufacturers are not only committed to improving the operating efficiency of the circuit, but also reducing standby power consumption as much as possible. In order to satisfy users' low-power measurement applications, GW Instek has launched the PPX-Series with current measurement resolutions ($0.1\mu A$, $1\mu A$, $10\mu A$, 0.1mA) and voltage measurement resolutions (0.1mV, 1mV) to provide power for portable devices and wearable devices. When the device enters the sleep mode or the standby mode, the PPX series can still measure the subtle current changes of the DUT.

The PPX-Sseries provides the Test Sequence function, which allows users to arbitrarily define output waveforms. The voltage rising or falling time and the voltage maintenance time of each step can be set. For the operation, users can directly edit parameters on the front panel of the PPX-Series, or the CSV file can be edited via computer and imported into the PPX-Series, and the PPX-Series can be remotely edited. In addition, the OCP Delay function of the PPX-Series allows users to flexibly adjust the time to enable the over-current protection according to the characteristics of the DUT to protect the DUT and at the same time to test the current change of the DUT within a certain period of time.

Other than voltage, current, and power measurement, the PPX-Series also supports temperature measurement. While collocating with a K Type Thermocouple, the temperature range can be measured from -200°C ~ +1372°C. Supported standard communication interfaces include USB, LAN, RS-232, RS-485 and optional GPIB interface.





PPX-Series



SPECIFICA	TIONS						
SPECIFICA	IIONS	DDV 1005	DDV 2002	DDV 2005	DDV 2601	DDV 2602	DDV 101101
Model	. 4.	PPX-1005	PPX-2002	PPX-2005	PPX-3601	PPX-3603	PPX-10H01
DC Output Mo							The second second
Output Voltage		10.000V 5.0000A	20.000V 2.0000A	20.000V 5.0000A	36.000V 1.0000A	36.000V 3.0000A	100.00V 1.0000A
Output Current Output Power		50W	40W	100W	36W	108W	100W
	OLTAGE OPERATIO	N		S. 17.77			<u> </u>
Line Regulation		±(0.01% of setting+1mV)	±(0.01% of setting+1mV)	±(0.01% of setting+1mV)	±(0.01% of setting+3mV)	±(0.01% of setting+3mV)	±(0.01% of setting+7mV
Load Regulation		±(0.01% of setting+2mV)	±(0.01% of setting+2mV)	±(0.01% of setting+3mV)	±(0.01% of setting+3mV)	±(0.01% of setting+4mV)	±(0.01% of setting+7mV
Transient Respo		<50µs	<50μs	<50μs	<50μs	<50μs	<100μs
Ripple Noise(V		0.35mVrms/<6mVpp	0.5mVrms/<8mVpp	0.5mVrms/<8mVpp	0.8mVrms/<10mVpp	0.8mVrms/<10mVpp	1.2mVrms/<15mVpp
	Rated load	20ms	50ms	50ms	50ms	50ms	100ms
	No load	20ms	50ms	50ms	50ms	50ms	100ms
	Rated load No load	10ms 100ms	20ms 150ms	20ms 150ms	20ms 150ms	20ms 150ms	50ms 250ms
Setting Range (0V ~ 10.5V	0V ~ 21.0V	0V ~ 21.0V	0V ~ 37.8V	0V ~ 37.8V	0V ~ 105.0V
Setting Resolut		1mV	1mV	1mV	1mV	lmV	10mV
Setting Accurac		±(0.03% of setting+3mV)	±(0.03% of setting+5mV)	±(0.03% of setting+5mV)	±(0.03% of setting+8mV)	±(0.03% of setting+8mV)	±(0.03% of setting+20m
	mpensation Voltage(single line)	1V	1V	1V	1V	17	3V
Temperature Co	oefficient (TYP.)	100 ppm/°C	100 ppm/°C	100 ppm/°C	100 ppm/°C	100 ppm/°C	100 ppm/°C
CONSTANT C	URRENT OPERATIO	N	12	97	100		Tr.
Line Regulation	1	±(0.02% of setting+250μA)	±(0.02% of setting+100μA)	±(0.02% of setting+250μA)	±(0.02% of setting+50μA)	±(0.02% of setting+150μA)	±(0.02% of setting+50μA)
Load Regulatio		±(0.02% of setting+250μA)	±(0.02% of setting+100μA)	±(0.02% of setting+250μA)	±(0.02% of setting+50μA)	±(0.02% of setting+150μA)	±(0.02% of setting+50μ/
Ripple Noise(A		2mA	1mA	2mA	400μΑ	1mA	1mA
Setting Range (0A ~ 5.25A	0A ~ 2.1A	0A ~ 5.25A	0A ~ 1.05A	0A ~ 3.15A	0A ~ 1.05A
Setting Resolut		0.1mA	0.1mA	0.1mA	0.1mA	0.1mA	0.1mA
Setting Accurac		±(0.05% of setting+3.0mA) 200 ppm/°C	±(0.05% of setting+1.0mA) 200 ppm/°C	±(0.05% of setting+3.0mA) 200 ppm/°C	±(0.05% of setting+0.5mA) 200 ppm/°C	±(0.05% of setting+1.5mA) 200 ppm/°C	±(0.05% of setting+1.0m/ 200 ppm/°C
	oefficient (TYP.) NT AND DISPLAY	200 ppm/ C	200 ppm/ C	200 ppm/ C	200 ppm/ C	200 ppm/ C	200 ppm/ C
		10.000V	20.000V	20.000V	36.000V	36.000V	100.00V
Voltage Range		1.0000V	2.0000V	2.0000V	3.6000V	3.6000V	10.000V
Current Range	H	5.0000A	2.0000A	5.0000A	1.0000A	3.0000A	1.0000A
	M	500.00mA	200.00mA	500.00mA	100.00mA	300.00mA	100.00mA
	L	50.000mA	20.000mA	50.000mA	10.000mA	30.000mA	10.000mA
	LL	5.0000mA	2.0000mA	5.0000mA	1.0000mA	3.0000mA	1.0000mA
Measurement	Voltage(H)	1mV	1mV	1mV	1mV	1mV	10mV
Resolution	Voltage(L) Current(H)	0.1mV 0.1mA	0.1mV 0.1mA	0.1mV 0.1mA	0.1mV 0.1mA	0.1mV 0.1mA	1mV 0.1mA
	Current(M)	0.01mA	0.01mA	0.01mA	0.01mA	0.01mA	0.01mA
	Current(L)	0.001mA	0.001 mA	0.001 mA	0.001 mA	0.001mA	0.001 mA
	Current(LL)	0.0001mA	0.0001mA	0.0001mA	0.0001mA	0.0001 mA	0.0001mA
Measurement	Voltage(H/L)	±(0.03% of rdg + 2mV)	±(0.03% of rdg + 4mV)	±(0.03% of rdg + 5mV)	±(0.03% of rdg + 6mV)	±(0.03% of rdg + 8mV)	±(0.03% of rdg + 15mV)
Accuracy	Temperature Coefficient (TYP.)		100 ppm/°C	100 ppm/°C	100 ppm/°C	100 ppm/°C	100 ppm/°C
	Current(H/M)	±(0.05% of rdg + 2.5mA)	±(0.05% of rdg + 1.0mA)	±(0.05% of rdg + 2.5mA)	±(0.05% of rdg + 0.4mA)	±(0.05% of rdg + 1.2mA)	±(0.05% of rdg + 1.0mA)
	Current(L/LL)	±(0.1% of rdg + 40μA)	±(0.1% of rdg + 24μA)	±(0.1% of rdg + 40μA)	±(0.1% of rdg + 16μA)	±(0.1% of rdg + 28μA)	±(0.1% of rdg + 24μA)
	Temperature Coefficient (TYP.)	200 ppm/°C	200 ppm/°C	200 ppm/°C	200 ppm/°C	200 ppm/°C	200 ppm/℃
TEMPERATURE	MEASURED						
Temperature	Range occuple) Resolution	-200°C~+1372°C 0.25°C					
(K-Type Thermo	Accuracy	±(0.5% + 2°C)					
PROTECTION							
Over Voltage	Operation	Turns the output off, display	s OVP and lights ALARM				
Protection(OVP		0.5V ~ 11.0V	1.0V ~ 22.0V	1.0V ~ 22.0V	1.8V ~ 39.6V	1.8V ~ 39.6V	5.0V ~ 110.0V
• • • • • • • • • • • • • • • • • • • •	* (3000000000000000000000000000000000000	(5% to 110% of the rated ou	tput voltage)				
	Setting Accuracy	±(1% of rating)					
Over Current	Operation	Turns the output off, display					
Protection(OCP) Setting Range	0.25A ~ 5.5A (5% to 110% of the rated or	0.1A ~ 2.2A	0.25A ~ 5.5A	0.05A ~ 1.1A	0.15A ~ 3.3A	0.05A ~ 1.1A
	Setting Accuracy	±(1% of rating)	reput current)				
Over Temperati	ure Operation	Turns the output off, display	s OTP and lights ALARM				
Protection(OTP	7)		445-307-030-350-350-350-350-350-3				
OTHER					71.20.00.00.00.00.00		
Interface Capa				IP Address, Instrument IP Add	Iress, Subnet Mask		
100	USB	Type A: Host, Type B: Slave, Complies with the EIA.PS.2		uding the connected			
Nominal Issue	RS-232/RS-485		32/RS-485 specifications (exclusive control of the				
Nominal Input Input Frequency		100Vac / 120Vac / 220Vac / : 47Hz ~ 63Hz	240Vac(±10%), 50Hz / 60Hz,	single phase			
Max. Inrush Cun	rent	25Amax	20Amax	30Amax	35Amax	40Amax	30Amax
Max. Power Cons		200VA	150VA	300VA	150VA	300VA	300VA
Operaing Temp		0°C~40°C					
Storage Tempera Operating Humi		-20°C ~ 70°C 20% ~ 80% RH: No conden	sation				
Storage Humidit	ty	20% ~ 85% RH; No conden					
Dimensions & V		107(W) × 124(H) × 313(D)	mm (not including protrusions	s); Approx. 5.5kg			

NOTE: *1. Time for output voltage to recover within ±(0.1% + 10mV) of its rated output for a load change from 50% to 100% of its rated output current

^{*2.} Measurement frequency bandwidth is 5 Hz to 1 MHz

^{*3.} Measurement frequency bandwidth is 10 Hz to 20 MHz

^{*4.} From 10%~90% of rated output voltage, with rated resistive load

^{*5.} From 90%~10% of rated output voltage, with rated resistive load *6. Temperature coefficient: after a 30 minute warm-up

^{*7.} Before connecting the power plug to an AC line outlet, make sure the voltage selector switches of the bottom panel in the correct position. It might be damaged the instrument by connecting to the wrong AC line voltage

Programmable High-precision D.C. Power Supply

Rear Panel



GRA-441-J/E Rack Mount Kit(JIS/EIA)



ORDERING INFORMATION

PPX-1005	10V/5A/50W Programmable High-precision DC Power Supply
PPX-2002	20V/2A/40W Programmable High-precision DC Power Supply
PPX-2005	20V/5A/100W Programmable High-precision DC Power Supply
PPX-3601	36V/1A/36W Programmable High-precision DC Power Supply
PPX-3603	36V/3A/108W Programmable High-precision DC Power Supply
PPX-10H01	100V/1A/100W Programmable High-precision DC Power Supply

ACCESSORIES:

CD (User Manual), Power Cord, Test Lead(GTL-104A for PPX-1005/PPX-2005/PPX-3603, 1m, 10A) (GTL-105A for PPX-2002/PPX-3601,1m,3A) (GTL-204A for PPX-1005/PPX-2005/PPX-3603

(GTL-203A for PPX-2002/PPX-3601/PPX-10H01

European Type Jack Terminal>, 1m, 3A) (GTL-201A, Ground lead for European Type Jack Terminal)

OPTIONAL ACCESSORIES

OPTIONAL	ACCESSORIES
GTL-246 GTL-205A GTL-258	USB Cable (USB 2.0 Type A-Type B Cable,4P) Temperature probe adapter (thermal coupling, K-Type), about 1000mm GPIB Cable, 2000mm
GTL-259	RS-232 Cable with DB9 connector to RJ45
GTL-260 GTL-261	RS-485 Cable with DB9 connector to RJ45 Serial Master Cable+Terminator, 0.5M
GTL-262	RS-485 Slave cable
GRA-441-J	Rack for PPX-Series(JIS)
GRA-441-E	Rack for PPX-Series(EIA)
PPX-G	GPIB Interface (factory installed)

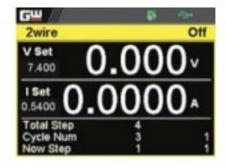
A. DISPLAY MODE



Voltage and Current



Voltage, Current and Wattage



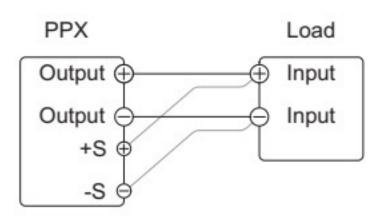
Voltage, Current and Sequence Test



Voltage, Current and Temperature Measurement

which are convenient for users to switch to different display modes according to test requirements.

REMOTE SENSING



REMOTE SENSING CONNECTION DIAGRAM

The Remote Sensing function can be used to compensate for the voltage drop caused by the resistance on the test connection lead from the power output to the load. PPX-1005/2002/2005/3601/3603 compensates for voltages up to 1 volt, and PPX-10H01 compensates

The PPX-Series has four display modes, namely 1) voltage and

current 2) voltage, current and wattage 3) voltage, current and

Sequence Test 4) voltage, current and temperature measurement,

for voltages up to 3 volts. When testing, choose a test connection lead with a voltage drop less than the compensation voltage of the PPX series as much as possible.

C. TEMPERATURE MEASUREMENT



Blue: Temperature Control on with no GTL-205A Connected



White: Temperature Control on with GTL-205A Connected

The PPX-Series can measure DUT temperature while outputting power. Before measuring the temperature, please use the optional accessory GTL-205A (temperature probe adapter with K-type thermocouple) to connect the DUT and TC input terminals on the front panel of the PPX-Series respectively. During the measurement process, users can set the monitoring



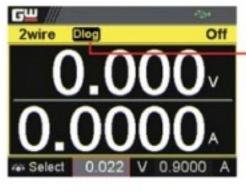
Green: Output Safe is Activated and Output is on with GTL-205A Connected



Red: The Alarm of Short Circuit Occurs From Temperature Measurement

temperature for the DUT. Once the measurement temperature reaches the monitoring temperature value, the PPX-Series will stop the output. The PPX-Series can measure the temperature range of -200.0 $^{\circ}$ C ~1372.0 $^{\circ}$ C (-328.0 $^{\circ}$ F ~2501.6 $^{\circ}$ F). Users can choose the display unit as $^{\circ}$ C or $^{\circ}$ F according to the requirement.

D. DATA LOGGER



Dlog Icon Appears

Data Logger

Type Save USB
Sample Period 0.1 s
Subfolder 0001

Save Data Log Into USB Disk

The PPX-Series can record the measured voltage, current and temperature data to a USB flash drive or can be remotely controlled to read the data.

Data sampling interval is 0.1~999.9 seconds.

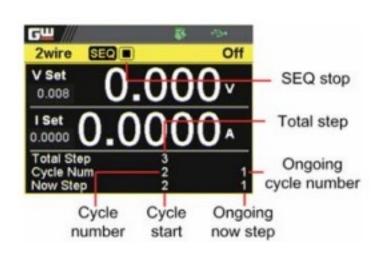
E. SEQUENCE TEST

Data Logger Function



SEQ Run in Cycle Mode

The Sequence Test function allows users to plan the PPX-Series to execute a sequential power output. The PPX-Series will automatically execute the planned power output to the DUT to realize automated measurement. The PPX-Series can store



SEQ Stop in Cycle Mode

Programmable High-precision D.C. Power Supply

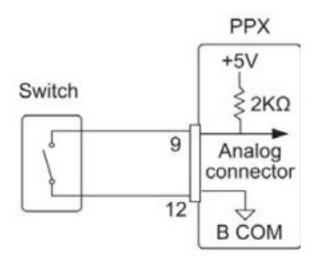
V/I SLEW RATE

Model	R_V Slew Rate/ F_V Slew Rate Setting Range
PPX-1005	0.0001V/ms ~ 0.1V/ms
PPX-2002	0.0001V/ms ~ 0.2V/ms
PPX-2005	0.0001V/ms ~ 0.2V/ms
PPX-3601	0.0001V/ms ~ 0.36V/ms
PPX-3603	0.0001V/ms ~ 0.36V/ms
PPX-10H01	0.001V/ms ~ 0.5V/ms

Voltage Rising/Falling Slew Rate

The PPX-Series can adjust the slew rate of current and voltage. Via setting the rising and falling time of voltage and current, users can verify the performance of the DUT during the voltage/current changes. In addition, the adjustment of the slew rate slows down the voltage transfer, which can effectively avoid the damage of the inrush current to the DUT, therefore, the series is especially suitable for the testing of capacitive loads and motors.

ANALOG REMOTE CONTROL

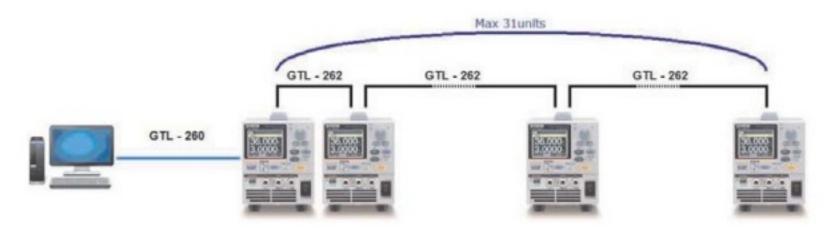


External Control of Output

The PPX-Series supports the analog control function, including external voltage to control voltage output/current output, external resistance to control voltage output/current output, external

control of power output, trigger input/trigger output, and voltage/current monitoring.

MULTIPLE UNIT CONNECTION



Multiple Unit Connection

The PPX series can connect up to 31 units. The PC is connected to the first unit of PPX through GTL-260, and the remaining PPX units are connected in a daisy-chained method via GTL-262. When using PPX-Series Multiple Unit Connection for remote program

control and slave expansion, there is no need to use other remote control equipment (E.g. switch/Hub), which can help users save equipment purchase costs.

Triple-channel Programmable DC Power Supply



GPP-3060/6030/3650





FEATURES

- * 4.3"TFT LCD Display
- * Setting Resolution: 1mV/0.1mA; Read Back Resolution: 0.1mV/0.1mA
- † Low Ripple Noise: ≦1mVrms/≦2mArms
- * Transient Response Time: ≦100µs
- * Load Function (CC, CV, CR mode)
- * Tracking Series and Parallel Function without Additional External Wiring
- * Utilizing Hardware to Realize Over Voltage Protection/Over Current Protection/Over Temperature Protection
- * Delay Function/Output Monitoring Function/ Output Recorder Function
- * Supports Setting Value, Measurement Value and Output Waveform Display
- * Sequential Output Function and Built-in 8 Template Waveforms
- * The Output Recorder Function Records the Output Voltage & Current Parameters with a Minimum Recording Interval of 1 Second
- * Provides 10 Sets of Memory for Each Sequence/Delay/Recorder/Panel Setting Condition
- * GPP-3060/6030 Supports a USB (Type A) Output Terminal
- * Intelligent Temperature Control Fan Effectively Reduces Noise
- * Standard: RS-232, USB, Ext I/O Optional (manufacturer installed only): LAN, LAN+GPIB

GPP-3060 and GPP-6030 triple-channel programmable DC power supplies are extension models of the GPP-X323 series. The maximum output power of these three models is 385W. GPP-3650 supports CH1/CH2: 0 ~ 36V / 0 ~5A output; CH3 supports 1.8V, 2.5V, 3.3V, 5.0V / 5A. GPP-3060 supports CH1/CH2: 0 ~ 30V / 0 ~ 6A output; GPP-6030 supports CH1/CH2: 0 ~ 60V / 0 ~ 3A output; CH3 of both models supports 1.8V, 2.5V, 3.3V, 5.0V/5A.

GPP-3650, GPP-3060 and GPP-6030 inherit the high program resolution (1mV/0.1mA) and read back resolution (0.1mV/0.1mA) of the GPP series with low-ripple noise characteristics ≤1mVrms/≤ 2mArms and ≤100µs output transient recovery ability. An independent output on-off switch is provided for each channel.

For series and parallel applications of CH1 and CH2, the tracking function can automatically switch to series or parallel output without additional external wiring. Multiple display modes including single channel or multi-channel setting value, measurement value and waveform display to collocate with the built-in output monitoring function allow users to set the monitoring conditions according to their needs so as to generate an alarm or stop the output during the measurement process in order to stop the measurement and protect the customer's DUT. The output recorder function can record the voltage/current of the output process in the internal memory, and save the result as a (*.REC) or (*.CSV) file, and then save it to a USB flash drive. The unique load function of the GPP series can arbitrarily set CH1/CH2 as power supply or load function. For example, one channel is set as power output, and the other channel is set as load function to consume the power of the DUT to satisfy simple battery charging and discharging or load characteristic test by a single power supply. The sequence output function allows users to edit the power output waveforms by themselves, and also allows users to set the sequential constant voltage (CV) or constant current (CC) load waveforms such as serial power output or dynamic load simulation test. Channel 3 (CH3) incorporates 3A USB (Type A) output terminal, which can be used for USB charging test.

Pertaining to measurement protections, OVP/OCP/OPP/OTP protection functions are provided. The protection mechanism of OVP/OCP/OTP is implemented by hardware circuits, which has a faster response time to protect equipment or DUT while comparing with competitors who use software for protection. The OVP and OCP functions allow users to set the protection action point according to the conditions of the DUT. OPP only provides protection during the operation of the load function.

In addition, GPP-3650, GPP-3060 and GPP-6030 incorporate terminal output on the rear panel, and include a voltage remote sensing terminal. Users can choose front panel or rear panel terminal output, which is convenient for stand-alone or rack operation. Output value setting and Sequence/ The Delay/Recorder functions provide 10 sets of internal memory, which can be uploaded/stored by a USB flash drive.



GPP-3650

GRA-449-J Rack Mount Kit (JIS)



GRA-449-E Rack Mount Kit (EIA)



Rear Panel



European Type Jack Terminal



Triple-channel Programmable DC Power Supply

SPECIFI	CATIONS								
		GPP-30	60		GPP-60	30		GPP-365	0
Output Mode Number of Channel		CH1 CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
Voltage	2	0 ~ 30.000V 0 ~ 30.000V	1.8V/2.5V/3.3V/5.0V,±5%	0 ~ 60.000V	0 ~ 60.000V	1.8V/2.5V/3.3V/5.0V,±5%	0 ~ 36.000V	0 ~ 36.000V	1.8V/2.5V/3.3V/5.0V,±5%
Current		0 ~ 6.0000A 0 ~ 6.0000A	5A (USB Port 3A)	0 ~ 3.0000A	0 ~ 3.0000A	5A (USB Port 3A)	0 ~ 5.0000A	0 ~ 5.0000A	5A (USB Port 3A)
Tracking Series Volta	age / Current	0 - 60.000V / 0 - 6.0000A		0 - 120.000V / 0			0 - 72.000V /		
Tracking Parallel Volt		0 ~ 30.000V / 0 ~ 12.0000A		0~60.000V / 0			0 ~ 36.000V /		
Warning						inals should Not exceed 5A			
Constant Voltage Op	peration								a and a second
Line Regulation		≤ 0.01% + 3mV	≤ 3mV	≤ 0.01% +	3mV	≤ 3mV	≤ 0.01%	+3mV	≤3mV
Load regulation		≤ 0.01% + 5mV (rating current ≤ 10A)	≤ 5mV	≤ 0.01% + 5mV (ratin	g current ≤ 10A)	≤ 5mV	≤ 0.01% + 5mV (rat	ing current ≤ 10A)	≤5mV
Ripple & noise (5Hz-	-1MHz)	≤1mVrms	≤2mVrms	≤1mVm		≤ 2mVrms	≤1mV		≤2mVrms
Transient recovery ti	ime	0.000.000.00	0 55 13000000000000000000000000000000000	(50% load	≤100µs d change + minim	num load (I.SA)	1.000	1970.65	
Temperature coeffici	ient			[ooso tone	≤ 300ppm/°0				
Constant Current Op									
Line Regulation					≤ 0.01% + 3m	ıA.			
Load regulation					≤ 0.01% + 3m				
Ripple & noise					≤ 2mArms				
Resolution									
Programming	Voltage	1mV		2mV			2m	V.	
Programming	Current	0.2mA]	0.1mA			0.1r		
Reedback	Voltage	0.1mV	1 .	0.1mV			0.1r		w.= w
	Current	0.1mA		0.1mA	1	Ø	0.1r	nA.	
Tracking Operation(CH1/CH2)	-0.30/ 30 1/ 51/		- 6 444 44 44	fit :		- 6 504 - 5	W-644	
Teaching		≤ 0.1% +10mV of Master (No Load, with load add load		≤ 0.2% +20mV			≤ 0.1% +10m (No Load, with		
Tracking error				(No Load, with lo					
6 1	Live	regulation ≤200mV)	1	regulation ≤2			regulation		8
OpenIII and I at	Line	≤ 0.01% + 3mV	1	≤ 0.01% +			≤ 0.01%		
Parallel regulation	Load	≤ 0.01% + 5mV (rating current ≤ 10A)		≤ 0.01% + 5mV (ratio		100	≤ 0.01% + 5mV (rat		2575
	1999	≤ 0.02% + 5mV (rating current > 10A)	1	≤ 0.02% + 5mV (ratin			≤ 0.02% + 5mV (rat		6
Series regulation	Line	≤ 0.01% + 5mV	1	≤ 0.01% +			≤ 0.01%		
	Load	≤ 200mV		≤ 200m			≤ 200		
Ripple & noise		≤2mVrms(5Hz-1MHz)	l .	≤2mVrms(5H:		n I OAD mode	≤2mVrms/5	nz-IMHz]	
Note Meter				rracking is	s not supported i	II LUND MODE.			
	Voltage	32,0000V	1.8V/2.5V/3.3V/5.0V	62,0000	n/	1.8V/2.5V/3.3V/5.0V	36.00	nm/	1.8V/2.5V/3.3V/5.0V
Full Scale	Current	6.2000A	1.04/2.34/3.34/3.04	3,2000		1.04/2.34/3.34/3.04	5.20		1.64/2.54/3.34/3.04
Programming	Voltage	5 digits	1	5 digit		1	5 dig		0
Resolution	Current	5 digits	1	5 digit		1	5 dig		
Reedback	Voltage	6 digits	1	6 digit		1	6 dis		
Resolution	Current	5 digits	1 -	5 digit		1 .	5 dis		0000
C-11	Voltage	± (0.03% of reading + 10mV)	1	± (0.03% of readi	ng + 10mV)	A38	± (0.03% of rea	ding + 10mV)	0.000
Setting accuracy	Current	± (0.3% of reading + 10mA)]	± (0.3% of reading]	± (0.3% of rear		
Readback accuracy	Voltage	± (0.03% of reading + 10mV)		± (0.03% of readi			± (0.03% of rea		
	Current	± (0.3% of reading + 10mA)		± (0.3% of reading	ng + 10mA)	y.	± (0.3% of rear	ding + 10mA)	
DC Load Mode	Luk	1 22 000			en I			e oout	
Display	Voltage Current	1 – 32.00V 0 – 6.200A		1 - 62.0 0 - 3.20			1 - 36. 0 - 5.		
Display	Power	0 ~ 50.00W	1	0 ~ 50.0			0 ~ 50		
	CH1/CH2	1.500V - 32.00V	1	1.500V - 6		1	1.500V -		
	Setting Accuracy	≤±(0.1% + 30mV)	1	≤±(0.1% + 3		1	≤±(0.1% -		0
CV Mode	Reedback Accuracy	≤±(0.1% + 30mV)	1	≤±(0.1% + 3		1	≤±(0.1% -		
3	Resoltion	10mV	1	10mV		1	10n		
	CH1/CH2	0 - 6.200A		0 - 3.20		1	0 - 5.3		
CC Mode	Setting Accuracy	≤±(0.3% + 10mA)		≤±(0.3%+1	10mA)	2	≤±(0.3%	+10mA)	9.3
CC MIGGE	Reedback Accuracy	≤±(0.3% + 10mA)		≤±(0.3%+1	I0mA)		≤±(0.3%	+ 10mA)	
<u> </u>	Resoltion	1mA		Amf			lm		
	CH1/CH2	1Ω- 1kΩ		1Ω- 1k			1Ω-		
	Setting Accuracy	≤±(3% + 1Ω)	1	≤±(3% +			≤±(3%		
CR Mode		(voltage≥0.1V, and current≥0.1A)	1	(voltage≥0.1V, and			(voltage≥0.1V, an		
	Reedback Accuracy	$\leq \pm (3\% + 1\Omega)$		≤±(3%+	1Ω)	I	≤±(3%	+1Ω)	
						1			
1		(voltage≥0.1V, and current≥0.1A)		(voltage≥0.1V, and	current≥0.1A)		(voltage≥0.1V, an		
Protoction.	Resoltion	(voltage≥0.1V, and current≥0.1A) 1Ω		(voltage≥0.1V, and 1Ω	current≥0.1A)		(voltage≥0.1V, an		
Protection	Resoltion	10	Eind E EU	1Ω		Einal E EU	10)	Eland E Eld
200000	Resoltion Power Mode	1Ω OFF,ON(0.5V-35.0V)	Fixed 5.5V	1Ω OFF,ON(0.5)	/-65.0V)	Fixed 5.5V	OFF,ON(0.	5V-38.0V)	Fixed 5.5V
Protection OVP	Resoltion Power Mode Load Mode	10	Fixed 5.5V	1Ω	/-65.0V) /-65.0V)	Fixed 5.5V	10	5V-38.0V)	Fixed 5.5V
200000	Resoltion Power Mode	1Ω OFF,ON(0.5V-35.0V)	Fixed 5.5V	1Ω OFF,ON(0.5)	/-65.0V)	Fixed 5.5V	OFF,ON(0.	5V-38.0V)	Fixed 5.5V
200000	Resoltion Power Mode Load Mode Setting Accuracy Resoltion	1Ω OFF,ON(0.5V-35.0V)	40	1Ω OFF,ON(0.5)	/-65.0V) /-65.0V) ±100mV		OFF,ON(0.	5V-38.0V) 5V-38.0V)	(540)
OVP	Resoltion Power Mode Load Mode Setting Accuracy	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V)	Fixed 5.5V - 3.1A(USB port)	0FF,ON(0.5) OFF,ON(1.5)	/-65.0V) /-65.0V) ±100mV 100mV	Fixed 5.5V - 3.1A(USB port)	OFF,ON(0. OFF,ON(1.	5V-38.0V) 5V-38.0V) 05A-5.50A)	Fixed 5.5V - 3.1A(USB port)
200000	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	0FF,ON(0.5\ OFF,ON(1.5\ OFF,ON(0.05.	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) ±20mA		OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	0FF,ON(0.5\ OFF,ON(1.5\ OFF,ON(0.05.	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A)		OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OCP	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5\ OFF,ON(1.5\ OFF,ON(0.05\ OFF,ON(0.05	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA	3.1A(USB port)	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5\ OFF,ON(1.5\ OFF,ON(0.05\ OFF,ON(0.05	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) ±20mA	3.1A(USB port)	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OCP	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(1.5) OFF,ON(0.05 OFF,ON(0.05	7-65.0V) 2-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (D0	3.1A(USB port)	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(1.5) OFF,ON(0.05 OFF,ON(0.05	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA	3.1A(USB port)	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	0FF,ON(0.5) OFF,ON(1.5) OFF,ON(0.05 OFF,ON(0.05	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) ±20mA 10mA MΩ or above (D0	3.1A(USB port) 500V)	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	10 OFF,ON(0.5) OFF,ON(1.5) OFF,ON(0.05 OFF,ON(0.05	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (D0	3.1A(USB port) 500V) 500V)	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	10 OFF,ON(0.5) OFF,ON(1.5) OFF,ON(0.05 OFF,ON(0.05 20 30 Inde	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (D0 MΩ or above (D0 oor use, Altitude:	3.1A(USB port) 500V) 500V) 2000m 0 ~ 40°C	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	10 OFF,ON(0.5) OFF,ON(1.5) OFF,ON(0.05 OFF,ON(0.05 20 30 Inde Amb	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (D0 MΩ or above (D0 cor use, Altitude: ient temperature elative humidity:	3.1A(USB port) 500V) 500V) 2000m 0 ~ 40°C 80%	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General Operation Environment	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(0.05) OFF,ON(0.05) OFF,ON(0.05) 20 30 Inde Amb R Installation	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) ±20mA 10mA MΩ or above (DO MΩ or above (DO cor use, Altitude: ient temperature elative humidity: category: II / Po	3.1A(USB port) 500V) 500V) 2000m 0 ~ 40°C 80% Solution degree: 2	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General Operation Environment	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(0.05) OFF,ON(0.05) OFF,ON(0.05) 20 30 Inde Amb R Installation	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) ±20mA 10mA MΩ or above (DO MΩ or above (DO cor use, Altitude: ient temperature elative humidity: category: II / Po IPERATURE: -10'	3.1A(USB port) 500V) 500V) 2000m 0 ~ 40°C 80% Solution degree: 2 C - 70°C	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General Operation Environment	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(0.05) OFF,ON(0.05) OFF,ON(0.05) 20 30 Inde Amb R Installation TEM	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) ±20mA 10mA MΩ or above (DO OUT USE, Altitude: ient temperature elative humidity: category: II / Po IPERATURE: -10' HUMIDITY: ≤7	3.1A(USB port) 500V) 500V) 2000m 0 ~ 40°C 80% Solution degree: 2 C - 70°C 0%	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General Operation Environment Storage Environment	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(0.05) OFF,ON(0.05) OFF,ON(0.05) 20 30 Inde Amb R Installation TEM	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (DO M	3.1A(USB port) 500V) 500V) 2000m 0 ~ 40°C 80% Solution degree: 2 C - 70°C 0% 10%, 50/60Hz	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General Operation Environment	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(0.5) OFF,ON(0.05) OFF,ON(0.05) 20 30 Inde Amb R Installation TEM	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (DO M	3.1A(USB port) 5.500V) 5.500V) 5.500V) 5.500V 6.500V 6.5	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General Operation Environment Storage Environment	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(0.5) OFF,ON(0.05) OFF,ON(0.05) 20 30 Inde Amb R Installation TEM AC 100V/1	/-65.0V) /-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (DO M	3.1A(USB port) 5.500V) 5.500V) 5.500V) 5.500V 6.500V 6.5	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General Operation Environment Storage Environment Power Input Power Consumption	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(0.5) OFF,ON(0.05) OFF,ON(0.05) 20 30 Inde Amb R Installation TEM AC 100V/1 CD User manual x Te:	7-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (D0 MΩ or above (D0	3.1A(USB port) 5.500V) 5.500V) 5.500V) 5.500V 6.500V 6.5	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)
OVP OCP Insulation resistance General Operation Environment Storage Environment Power Input Power Consumption	Resoltion Power Mode Load Mode Setting Accuracy Resoltion Power Mode Load Mode Setting Accuracy Resoltion Between chassis and terminal Between chassis and DC power cord	1Ω OFF,ON(0.5V-35.0V) OFF,ON(1.5V-35.0V) OFF,ON(0.05A-6.50A)	3.1A(USB port)	OFF,ON(0.5) OFF,ON(0.5) OFF,ON(0.05) OFF,ON(0.05) OFF,ON(0.05) 20 30 Inde Amb R Installation TEM AC 100V/1 CD User manual x Te: (Europe) Tes	7-65.0V) ±100mV 100mV A-3.50A) A-3.50A) ±20mA 10mA MΩ or above (D0 MΩ or above (D0	3.1A(USB port) 3.1A(USB port) 5 500V) 5 500V) 5 2000m 6 0 ~ 40°C 6 80% 6 lilution degree: 2 C - 70°C 10% 10%, 50/60Hz 7 10 mual x1, Power Code x1 10 x 3 10 x 3, GTL-201A x1	OFF,ON(0.0	5V-38.0V) 5V-38.0V) 05A-5.50A)	3.1A(USB port)

ORDERING INFORMATION

GPP-3060 385W Triple-channel Programmable DC Power Supply GPP-6030 385W Triple-channel Programmable DC Power Supply GPP-3650 385W Triple-channel Programmable DC Power Supply

ACCESSORIES:

CD (User manual), Quick start manual, Power cord, test lead: GTL-104A x 3, European test leads: GTL-204A x 3, GTL-201A x 1

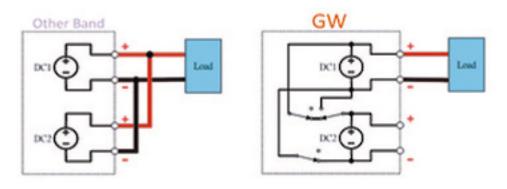
OPTIONAL ACCESSORIES

GTL-246 USB Cable GRA-449-E Rack Mount Kit (EIA) GRA-449-J Rack Mount Kit (JIS)

INTERFACE

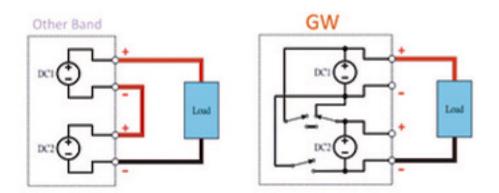
Standard: RS-232, USB, Ext I/O, Optional (manufacturer installed only): LAN, GPIB+LAN

A. TRACKING SERIES AND PARALLEL FUNCTION



Output in Parallel Connections

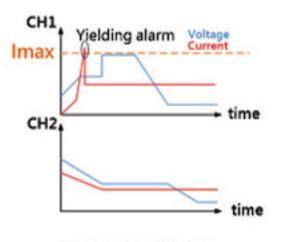
For series and parallel applications of CH1 and CH2, the tracking function of the GPP-Series utilizes the internal circuit to automatically switch the output to serial or parallel output without additional external wiring, providing users with convenience not only in operating procedures but also a more stable output.



Output in Series Connections

The tracking function design of other brands requires additional external wiring connections for the output in series or parallel. However, excessively long, thin or inconsistent external wiring may cause inaccurate voltage or current output.

OUTPUT MONITORING FUNCTION



Output Monitoring

The output monitoring function allows users to set the monitoring conditions according to the requirements, including the voltage, current, and power greater than or less than the setting and the logical relationship of AND, OR. It also allows users to sound



Monitoring Function Setting

alarms or stop the output during the measurement process, stop the measurement, and protect the customer's DUT. Both Channel could be monitored simultaneously as well.

* Channel 3 does not support the output monitoring function.

SEQUENCE OUTPUT FUNCTION

Output Waveform of the GPP-6030/3060

The GPP-Series provides a sequential output function on Channel 1 and Channel 2. This function not only allows users to edit the power output waveform, but also allows users to set the sequential constant voltage (CV) or constant current (CC) load waveform, i.e. a serial power output or a simulation test of a dynamic load. The maximum settable points for sequence function are 2048, and interval range of each point can be set from 1 to 300 seconds. In order to simplify the setting of waveform editing, the GPP-Series has 8 built-in Templet waveforms in sequence output function for

users to directly apply for output, including Sine, Pulse, Ramp, Stair Up, Stair Dn, Stair UpDn, Exp Rise, and Exp Fall waveforms.

The editing data of the sequence output can be stored in the internal 10 sets of the memory, or to be saved by USB flash drive (Save/Recall) and saved as *.SEQ or *.CSV file; The stored *.CSV can be exported into Excel for editing and analysis. The final edited file can be imported to (Save/Recall) of the power supply using a USB flash drive.

Triple-channel Programmable DC Power Supply

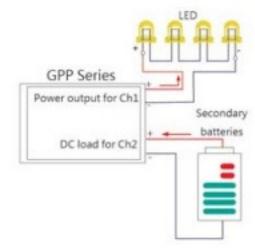
D. HARDWARE PROTECTION FUNCTION(OVP/OCP/OTP)



OVP Trigger

The protection mechanism of OVP/OCP/OTP is implemented by hardware circuit, which has the advantage of faster response time than competitors who use software to achieve protection. When it is detected that the voltage of the DUT exceeds the setting value of the OVP, the output of the power supply can be stopped in a short time to achieve the purpose of protecting the DUT.

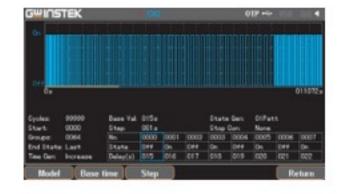
E. LOAD FUNCTION



GPP-Series Application

The CH1/CH2 of the GPP series is designed with the load function. A single power supply can meet the basic battery charging and discharging test requirements. It can provide power output in channel 1 and channel 2. The rated constant voltage load (CV), rated constant current load (CC) and maximum $1k\Omega$ constant resistance load (CR) function are built-in to allow users to conduct discharging test without using an electronic load. In application, users can also set either that one channel of the single GPP series as the power output, one channel as the load function to consume the power of different loads simultaneously.

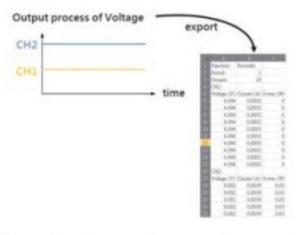
F. OUTPUT DELAY FUNCTION



GPP-Series Delayed Waveform

Output delay function allows users to edit the timing waveform of the power output on/off when the front panel voltage and current settings are unchanged. In order to simplify the setting of waveform editing, the GPP-Series has three built-in timing modes in the delay output function, including Fixtime, Increase, Decline for users to apply directly. The editing data of the output delay can be stored in the internal 10 sets of memory, or to be saved by USB flash drive (Save/Recall) and saved as *.DLY or *.CSV file. The stored *.CSV can be exported into Excel for editing and analysis. The final edited file can be exported to (Save/Recall) of the power supply using a USB flash drive.

G. OUTPUT RECORDER FUNCTION



Recorder : On
REC Channels : CH1 CH2
REC Portod : 001 s
REC Groups : 002048
REC Porto : MEM: RECORDOD



Schematic Diagram for Recorder Function

Recorder Function Setting

Save as*.REC

The output recorder function records the voltage & current parameters of the output process. The recording interval of each point can be set according to user's requirements, and the shortest interval is 1 second and the longest is 300 seconds. The results can be stored in *.REC or *.CSV format to the power supply or directly

saved in the USB flash drive. The stored *.CSV can be exported into Excel to conduct the future analysis. (*.REC can be saved to 2048 records, *.CSV can be saved to 614400 records)

^{*} Channel 3 does not support the output recorder function

Multi-output Programmable D.C. Power Supply



GPP-Series



FEATURES

- * 4.3" TFT LCD Display
- * Supports Setting Value, Measurement Value and Output Waveform Display
- * Load Function (CC, CV, CR Mode)
- * Setting Resolution: 1mV/0.1mA; Read Back Resolution: 0.1mV/0.1mA
- † Low Ripple Noise: ≤350µVrms/≤2mArms
- † Transient Response Time: ≤50µs
- * Tracking Series and Parallel Function without Additional External Wiring
- * Utilizing Hardware to Realize Over Voltage Protection/Over Current Protection/Over Temperature Protection
- * Delay Function/Output Monitoring Function/ Output Recorder Function
- * Intelligent Temperature Control Fan Effectively Reduces Noise
- * Sequential Output Function and Built-in 8 Template Waveforms
- * The Output Recorder Function Records The Output Voltage & Current Parameters with A Minimum Recording Interval of 1 Second
- * Provides 10 Sets of Memory for Each Sequence /Delay/Recorder/Panel Setting Condition
- * GPP-3323 Supports A USB(Type A) Output Terminal
- * Standard: RS-232, USB, Ext I/O; Optional (Manufacturer Installed Only): LAN, GPIB+LAN
- * Compatible with Commands of GPD-X303S Series

With the maximum output power of 217W, the GPP-Series, the multi-channel programmable DC power supply, includes four models: GPP-1326 (0-32V/0-6A) for single-channel output and GPP-2323 for dualchannel output (CH1:0-32V/0-3A, CH2:0-32V/0-3A), GPP-3323 for three-channel output (CH1: 0~32V/0~3A, CH2:0~32V/0~3A, CH3: 1.8V, 2.5V, 3.3V, 5.0V/5A) and GPP-4323 for four-channel output (CH1:0~32V/0~3A, CH2:0~32V/0~3A, CH3:0~5V/0~1A, CH4: 0~15V/0~1A). This series not only provides high program resolution (1mV/0.1mA) and read back resolution (0.1mV/0.1mA), but also features optimal low-ripple noise characteristics ≤350μVrms/≤ 2mArms and output transient recovery capability≤50μs. Independent output on-off switch is provided for each channel.

For series and parallel applications of CH1 and CH2, the tracking function of the GPP-Series utilizes the internal circuit to automatically switch the output to serial or parallel output without additional external wiring, providing users with convenience not only in operating procedures but also a more stable output. The tracking function design of other brands requires additional external wiring connections for the output in series or parallel. However, excessively long, thin or inconsistent external wiring may cause inaccurate voltage or current output.

The GPP-Series offers a variety of display modes, including single or multi-channel setting values, measurement values, and waveform displays. The Monitor function of the GPP-Series allows users to set monitoring conditions according to requirements, sound alarms or stop output during the measurement process, and stop measurement and protect the customer's DUT. The GPP-Series provides output recorder function, which records the voltage/current of the output process to the internal memory, and the result can be stored as a (*.REC) or (*.CSV) file, which can then be transferred to the USB flash drive. The stored *.CSV can be exported to the Excel to conduct the future analysis.

The CH1/CH2 of the GPP-Series are designed with the load function. A single power supply can set one channel as the power output, and one channel for the load function to consume the power of the DUT so as to meet the basic charging and discharging test requirements for battery. Channel 1 and channel 2 not only provide 32V/3A power output, but also feature built-in maximum 32V constant voltage load (CV), maximum 3.2A constant current load (CC) and maximum 1kΩ constant resistance load (CR) function.

The GPP-Series provides the sequential output function on Channel 1 and Channel 2. This function not only allows users to edit the power output waveform, but also allows users to set the sequential constant voltage (CV) or constant current (CC) load waveform, i.e. a serial power output or a simulation test of a dynamic load. In order to simplify the setting of waveform editing, the GPP-Series has 8 built-in Templet waveforms in the sequence output function for users to directly apply for output, including Sine, Pulse, Ramp, Stair Up, Stair Dn, Stair UpDn, Exp Rise, Exp Fall waveforms.

The sound protection functions include OVP/OCP/OPP/OTP, in which the protection mechanism for OVP/OCP/OTP is implemented by hardware circuit that has the advantage of faster response time compared with competitors who adopt software to achieve protections. The OVP/OCP functions allow users to set the protection action point (except CH3 of GPP-3323) according to the conditions of the DUT. The OPP is only activated during the operation of the load function. The Delay Function sets the length of time during channel 1 or channel 2 power output on or during power output off.

In addition, the Trigger In/Trigger Out functions synchronize external devices. The GPP-3323 channel 3 adds a 3A USB (Type A) output terminal for USB charging test. The intelligent temperature-controlled fan can adjust the speed according to the temperature of the power transistor so as to reduce unnecessary noise. The output value setting and the Sequence/Delay/Recorder functions provide 10 sets of internal memory for use, and can be loaded/stored using a USB flash drive. In addition to the standard RS-232 and USB remote interfaces, the GPP-Series also has an optional LAN or LAN+GPIB interface to facilitate different requirements. The commands of the GPP-Series conform to SCPI requirements and are compatible with the commands of the GPD-X303S Series.

European Type Jack Terminal



Rear Panel (LAN+GPIB)



	Į.	GP	P-4323	
Model		GPP-332	3	
Number	GPP-2	1323		
	GPP-1326			
Number of Outputs	СН1	CH2	СНЗ	CH4
Sequence Output Function	1	1		
Load Functions (CC, CV, CR mode)	1	1		
Output Delay Function	1	1		
Output Monitoring Monitor(10 sets)	1	1	(CPF1ES not supported)	1
Output Recorder Function	1	1	(CPEED not supported)	1
Panel Save/Recall	1	1	1	1

OUTPUT FUNCTION LIST

Rear Panel (LAN)



Rear Panel



Multi-output Programmable D.C. Power Supply

SPECIFICA	ATIONS										
		GPP-1326	GP	P-2323		GPP-33	323		GPP-43	23	
OUTPUT MODE											
Number of Channel		CH1	CH1	CH2	CH1	CH2	CH3	CH1	CH2	CH3	CH4
Voltage		0 - 32,000V	0 - 32.000V	0 - 32.000V	0 - 32.000V	0 - 32.000V	1.8V/2.5V/3.3V/5.0V, ±5%	0 - 32.000V	0 - 32.000V	0 - 5.000V	0 - 15,0004
Current		0-6.0000A	0 - 3.0000A	0 - 3.0000A	0 - 3,0000A	0 - 3.0000A	SA (USB Port 3A)	0 - 3,0000A	0 - 3.0000A	0 - 1.0000A	0 - 1.0000A
Tracking Series Voltage/		-		V / 0 ~ 3.0000A	0 ~ 64.000V /			0 ~ 64.000V		63	79
Tracking Parallel Voltage	1	-	0 ~ 32.000	V / 0 ~ 6.0000A	0 ~ 32.000V /	0 ~ 6.0000A		0 ~ 32.000V	0 ~ 6.0000A	- 68 - 3	25
	23 output current from the 2 terminals	should Not exceed SA.									
CONSTANT VOLTAGE	OPERATION										
Line Regulation		≤ 0.01% + 3mV		1% + 3mV	≤ 0.01%		≤ 3mV		≤ 0.01% +		
Load Regulation		≤ 0.01%+3mV (rating current≤ 3A)		(rating current≤3A)	≤ 0.01%+3mV (rat		≤ 5mV		0.01%+3mV(rating		
	20110	\leq 0.02%+5mV(rating current>3A)		(rating current>3A)	$\leq 0.0296+5 \text{mV} \text{ (rat)}$				0.02%+5mV(ratin)		c.c.
Ripple & Noise (5Hz-1M	IHz)	≤0.5mVrms		SmVrms	⊴0.35m		≤2mVrms	≤0.35n		≤1m	Vrms
Transient Recovery Time		≤100µs		⊴50μs	≤50		≤100µs		≤50µs		
					(50% load	change + minimu	ım load 0.5A)				
Temperature Coefficient		≤ 300ppm/°C									
CONSTANT CURRENT	OPERATION										
Line Regulation		≤ 0.2% + 3mA									
Load Regulation		≤ 0.2% + 3mA									
Ripple & Noise		≤4mArms	≤2	2mArms		≤ 2mArm	15		≤ 2mArn	18	
Resolution				and the same							
Programming	Voltage/Current	1mV / 0.2mA		/ / 0.1mA	1mV / 0		-		1mV / 0.1		
Reedback	Voltage/Current	1mV / 0.2mA	0.1m	V / 0.1mA	0.1mV /	0.1mA			0.1mV / 0.	ImA	
TRACKING OPERATION	I(CH1/CH2)				Z			V.,			
				of Master (0-32V))	≤±(0.1%+10mV of			≤±(0.1%+10mV o	f Master(0-32V))		
Tracking Error				ith load add load	(No Load, with			(No Load, with			
			regulati	ion≤100mV)	regulation:	≤100mV)		regulation	≤100mV)		
	Line		≤ 0.0	1% + 3mV	≤ 0.01%	+ 3mV		≤ 0.01%			
Parallel Regulation	Load			(rating current≤3A)	≤ 0.01%+3mV (rat	ting current≤3A)	16	≤ 0.01%+3mV(ra	ting current≤3A)		
	Long		≤ 0.02%+5mV	(rating current>3A)	≤ 0.02%+5mV(rat	ting current>3A)		≤ 0.02%+5mV (ra	nting current>3A)		
Series Regulation	Line		≤ 0.0′	1% + 5mV	≤ 0.01%	+ 5mV		≤ 0.01%	+ 5mV]	
Jeries regulation	Load		≤	100mV	≤ 100	lmV		≤10	0mV]	
Ripple & Noise	bows.		≤1mVmm	s(5Hz-1MHz)	≤1mVrms(5	Hz-1MHz)		≤1mVrms(5	Hz-1MHz)]	
Note : GPP-1326 does not have	e Tracking function,and Tracking is no	t supported in LOAD mode.									
METER											
Full Scale	Voltage/Current	33.0000V / 6.2000A	33.0000	OV / 3.2000A	33.0000V /	3.2000A	1.8V/2.5V/3.3V/5.0V		33,0000V / 3	2000A	
Programming Resolution	Voltage/Current	5 digits / 5 digits	5 digit	ts / 5 digits	5 digits /	5 digits			5 digits / 5	digits	
Reedback Resolution	Voltage/Current	6 digits / 5 digits	6 digit	ts / 5 digits	6 digits /	5 digits			5 digits / 6	digits	
Setting Accuracy	Voltage	± (0.03% of reading + 10mV)	± (0.03% of	reading + 10mV)	± (0.03% of rea	ding + 10mV)		9	± (0.03% of reading	ng + 10mV)	
Setting Accuracy	Current	± (0.3% of reading + 10mA)	± (0.3% of r	reading + 10mA)	± (0.3% of read	ding + 10mA)	100		± (0.3% of reading	g + 10mA)	
Readback Accuracy	Voltage	± (0.03% of reading + 10mV)	± (0.03% of	reading + 10mV)	± (0.03% of rea	ding + 10mV)		9	± (0.03% of readir	rg + 10mV)	
Readback Accuracy	Current	± (0.3% of reading + 10mA)	± (0.3% of	reading + 10mA)	± (0.3% of read	ding + 10mA)			\pm (0.3% of reading	g + 10mA)	
DC LOAD MODE	0.000.000		an Adequate souther pa								
	Voltage	1 - 33,00V	1-	- 33.00V	1 ~ 33	.00V		1 ~ 3	3.00V		
Display	Current	0 - 6.200A	0~	- 3.200A	0~3.2	200A		0 ~ 3.	200A		
8	Power	0 - 100,00W	0~	50.00W	0 ~ 50.	.00W		0 ~ 50	0.00W]	
	CH1/CH2	1.500V - 33.00V	1.500\	/ ~ 33.00V	1.500V ~	33.00V		1.500V -	- 33.00V]	
CV Mode	Setting/Reedback Accuracy	≤±(0.1% + 30mV)	≤±(0.1	% + 30mV)	≤±(0.1%+	+ 30mV)		≤±{0.1%	+ 30mV)		
3.0 P (0.0 P (0.	Resoltion	10mV		10mV	10n				mV		
To the contract of the contrac	CH1/CH2	0 ~ 3.200A	0	- 3.200A	0 - 3.2	200A		0 – 3]	
CC Mode	Setting/Reedback Accuracy	≤a (0.3% + 10mA)	≤±(0.3	% + 10mA)	≤±(0.3% ∈	+ 10mA)		≤±{0.3%	+ 10mA)]	
<u> </u>	Resoltion	1mA		1mA	1m				nA]	
	CH1/CH2	10- 1k0		O- 1kΩ	1Ω-				1kΩ]	
CR Mode	Setting/Reedback Accuracy	≤±(3% + 1Ω)		3% + 1Ω)	≤±(3%			≤±(3%			
		(voltage≥0.1V, and current≥0.1A)	(voltage≥0.1V,	, and current≥0.1A)	(voltage≥0.1V, an			(voltage≥0.1V, a			
A	Resoltion	10		10	10	1		1	Ω		
PROTECTION											
	Power Mode	OFF,ON(0.5V - 35.0V)	OFF,ON	(0.5V ~ 35.0V)	OFF,ON(0.5	V ~ 35.0V)	Fixed 5.5V	OFF,ON(0.	5V ~ 35.0V)	OFF,ON	OFF,ON
OMB	Load Mode	OFF,ON(1.5V ~ 35.0V)	OFF ON	(1.5V – 35.0V)	OFF,ON(1.5	V = 35 (N/)	-		5V – 35.0V)	(0.5V-6.0V)	(0.5V-16.5V
OVP	Setting Accuracy	±100mV	ULT,UN	1.01 - 33/01	OLL MILE	- 33/04]	100	OFF,ORE	21 - 23.0V)		
	Resoltion	100mV									
	Power Mode	OFF,ON(0.05A ~ 7.00A)	OFF ONLY	0.05A - 3.50A)	OFF,ON(0.0)	1402 E - A2	3.1A(USB port)	OFF,ON(0.0	15A - 3 S0A1	OFF,ON(0.0	15A - 1 20AV
	Load Mode	OFF,ON(0.05A ~ 7.00A)		0.05A - 3.50A)	OFF,ON(0.0)		J. IA(U36 port)	OFF,ON(0.0		OTT, OTT (VI	- I LUM
	LONG MODE	±20mA	OFFICIAL	war - sidenj	OFF, ONI DAY	at story		0.77,014(0.1	and almost		
ОСР	Setting Accuracy										
ОСР	Setting Accuracy	10mA									
ОСР	Setting Accuracy Resoltion	10mA Between chargin and terminal : 200	O or shows IDO	somo.							
OCP Insulation Resistance		Between chassis and terminal: 20N									
Insulation Resistance		0.00									
Insulation Resistance GENERAL	Resoltion	Between chassis and terminal : 20% Between chassis and DC power core	d:30MD or abov	e (DC 500V)	hand by a second	ata Harrana	II A BOLL OF THE				
Insulation Resistance GENERAL Operation Environment	Resoltion	Between chassis and terminal : 20N Between chassis and DC power con Indoor use, Altitude: ≤ 2000m; Am	d: 30MΩ or abov	e (DC 500V)	humidity; ≤ 80% ; In	stallation categor	y: II / Pollution degree: 2				
Insulation Resistance GENERAL Operation Environment Storage Environment	Resoltion	Between chassis and terminal : 20N Between chassis and DC power core Indoor use, Altitude: ≤ 2000m ; Ami TEMPERATURE: -10°C - 70°C / HU	d:30MΩ or abov bient temperature MIDITY:≤70%	e (DC 500V)	humidity: ≤ 80% ; In	stallation categor	y: II / Pollution degree: 2				
Insulation Resistance GENERAL Operation Environment Storage Environment Power Input	Resoltion	Between chassis and terminal : 20N Between chassis and DC power con- Indoor use, Altitude: ≤ 2000m; Ami TEMPERATURE: -10°C - 70°C / HU AC 100V/120V/220V/230V±10%, SC	d : 30MΩ or abov bient temperature MIDITY: ≤70% I)/60Hz	e (DC 500V) e: 0 – 40°C / Relative	hurmidity: ≤ 80% ; In		y: II / Pollution degree: 2				
Insulation Resistance GENERAL Operation Environment Storage Environment	Resoltion	Between chassis and terminal : 20N Between chassis and DC power core Indoor use, Altitude: ≤ 2000m ; Ami TEMPERATURE: -10°C - 70°C / HU	d:30MD or abov bient temperature MIDITY: ≤70% 0/60Hz	e (DC 500V)	hurmidity; ≤ 80% ; In	stallation category 420W	y: II / Pollution degree: 2		420W		

ORDERING INFORMATION

GPP-1326 (32V/6A) Single-Output Programmable DC Power Supply GPP-2323 (32V/3A*2) Dual-Output Programmable DC Power Supply

GPP-3323 (32V/3A*2; 1.8V or 2.5V or 3.3V or 5V/5A*1) Three-Output Programmable DC Power Supply

GPP-4323 (32V/3A*2; 5V/1A; 15V/1A) Four-Output Programmable DC Power Supply

ACCESSORIES:

User Manual x 1 , Power cord x 1 European Test Leads :

GPP-1326 Test Lead GTL-104A x 1, GTL-105A x 1 GPP-2323 Test Lead GTL-104A x 2, GTL-201A x 1 GPP-2323 GTL-204A x 2, GTL-201A x 1 GPP-3323 GTL-204A x 2, GTL-201A x 1 GPP-3323 GTL-204A x 3, GTL-201A x 1 GPP-3323 GTL-204A x 3, GTL-201A x 1

OPTIONAL ACCESSORIES

GTL-246 USB Cable GRA-449-J Rack Mount Kit (JIS) GRA-449-E Rack Mount Kit (EIA)

OPTIONS (Manufacturer Installed Only) LAN Interface; GPIB+LAN Interface



GPD-2303S/3303S/ 4303S/3303D









FEATURES

- * 2, 3 and 4 Independent Isolated Output
- * 4 LED Display Sets: 3 Digits After Decimal Point (GPD-2303S/3303S/4303S)
- * Minimum Resolution: GPD-2303S/3303S/4303S (1mV/1mA) GPD-3303D (100mV/10mA)
- * Digital Panel Control (Rotary Encoder Switch, Rubber Key With Indicator)
- * User-Friendly Operation, Coarse / Fine Volume Control
- * 4 Sets Save / Recall
- * Key-Lock
- * Output ON/OFF
- * Tracking Series and Parallel Mode
- * Smart Cooling Fan Achieving Low Noise
- * Compact Design
- * PC Software & USB Driver
- * USB Standard Interface
- * Optional European Jack Type Terminal

Rear Panel



European Type Jack Terminal



The GPD-Series is a cutting edge, economical, high resolution programmable power supply, Which is equipped with 2, 3 and 4 independent output channels and support a maximum output from 180Watt to 195Watt. The power supplies include four sets of memory for voltage and current setting, a USB remote interface, high resolution (GPD-2303S / GPD-3303S / GPD-4303S) and intelligent fan control to reduce noise. The durable features along with the free output monitoring software make the GPD-Series suitable for any lab as well as the LED industry.

	GPD-2	2303S	(GPD-3	303S		GPE)-4303S		1	GPD-3	303D
OUTPUT	87 S			9 9		2		ter e				
Channel	CH1	CH2	CH1	CH2	CH3	CH1	CH2		CH4	CH1	CH2	CH3
Voltage	0-30V	0-30V	0-30V	0-30V	2.5/3.3/5.0V	0-30V	0-30V	0-5V or	0-5V	0-30V	0-30V	2.5/3.3/5.0
								5.001V-10V				
Current	0-3A	0-3A	0-3A	0-3A	3A	0-3A	0-3A		0-1A	0-3A	0-3A	3A
								or 0–1A				
CONSTANT VO	TAGE	OPERA	TION									
Regulation	Line re	egulatio	on <u>≤</u> 0.	.01%+3	3mV		10.1110.0100	1076000				
		_			3mV(rating	current	≤ 3A);	≤ 0.02%	+5mV	(rating o	current	>3A)
Ripple & Noise	13.1-13.5-13.5-13.5-1		Hz-1N				02020					
Recovery Time				chang	e, Minimum	load 0	.5A)					
Temp.Coefficient	≥300p	ppm / °	С									
CONSTANT CUI	RRENT	OPERA	TION									
Regulation			on <u>≤</u> 0.2	%+3m	A; Load reg	ulation	≤ 0.2%	+3mA				
Ripple Current	≤3mA				100							
TRACKING OPE					770000							
Regulation of		~	on ≤ 0.0									9000000
PAR.					mV (rating	current	≤3A);	≤ 0.02%-	-5mV	(rating o	urrent :	>3A)
Regulation of SER.		_	on ≤ 0.0		mV							
Tracking Error		_	on <u>≤</u> 10		الناب أحجاج	land of	44-41		lation.	<100\	,	
	_ 0.17	0.10111	v (10-	300)1	no load, with	i load a	iaaea i	oad regu	lation .	2100m		
METER												
Display					Display (full					_	_	4"LED Displa
				" LED I	Display (full	scale:3	.2A)					4"LED Displa
Resolution		e: 1mV								Voltage:1 Current:		
Program				PDC	+10 digits)				- 1			RDG+2 digits
Accuracy (25±5°C)	_				10 digits)				- 1			RDG+2 digit
Readback	6.500 (197.20)				+10 digits)						*	RDG+2 digit
Aaccuracy(25±5°C)					10 digits)					_		RDG+2 digit
- 1		ii. ±(0	70 01 1	KDG +	ro digits)					Current	10.0/6.0)	KDG+2 digit
CH3 SPECIFICA	IIONS											
Output Voltage				/3.3V/	5V)±8%		/5-10			(2.5V/	3.3V/5V	/)±8%
Output Current			3A Lines	egulati	006		/ 0-1A regulat		- 1	3A Line reg	ulation	<
Regulation		_		+3mV	_		6+3mV			0.01%+		_
(25±5°C)			100000000000000000000000000000000000000	regulat			regula			Load re		1 ≤
				+3mV			6+3mV			0.01%+	_	
Repple & Noise			≤1m\	/rms(5	Hz-1MHz)	_≤2m\	Vrms(5	Hz-1MH	tz)	≤1mVrr	ms(5Hz	-1MHz)
KEY LOCK	27	3										
Yes												
	RECALI	L										
	E											
		0V + 10	96. 507	60Hz-	Power cons	ımntio	n · 490	VA may				
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	001 IZ,	oner cons	ptioi		TATION.				
210(W) x 130 (F			ım ; Ap	prox.	7kg							
Yes MEMERY SAVE/ 4 sets POWER SOURC AC100V/120V/2 DIMENSION & V	E 20V/230 WEIGH1	0V±10 T				umption	n : 490	VA max.				

ORDERING INFORMATION

GPD-2303S GPD-2303S 2 Channels, 180W Programmable Linear DC Power Supply GPD-3303S GPD-3303S 3 Channels, 195W Programmable Linear DC Power Supply GPD-4303S GPD-4303S 4 Channels, 195W Programmable Linear DC Power Supply

GPD-3303D GPD-3303D 3 Channels, 195W Programmable Linear DC Power Supply

ACCESSORIES:

User Manual x 1, Power cord x 1

GPD-2303S Test Lead GTL-104A x 2, European Test Lead GTL-204Ax2, GTL-201A x 1

GPD-3303S Test Lead GTL-104A x 2,GTL-105A x 1; European Test Lead GTL-203A x 1, GTL-204A x 2, GTL-201A x 1

GPD-4303S Test Lead GTL-104A x 2,GTL-105A x 2; European Test Lead GTL-203A x 2, GTL-204A x 2, GTL-201A x 1

GPD-3303D Test Lead GTL-104A x 2,GTL-105A x 1; European Test Lead GTL-203A x 1, GTL-204A x 2, GTL-201A x 1

OPTIONAL ACCESSORIES

GTL-246 USB Cable FREE DOWNLOAD

PC Software PC Software including Data Log

Driver Labview Driver

Programmable Dual-range Linear D.C. Power Supply



PSM-2010/3004/6003



FEATURES

- * Single Output Dual Range Max. 200W
- * High Resolution: 1mV/1mA
- * Stable & Clear Power: 0.01% Load/Line Regulation, 350 μVrms Ripple
- * 100 Sets Memory
- * Auto Step Running With Timer Setting
- * Safety Design: OVP, OCP & OTP; Output ON/OFF Control(OCP Provides Delay Setting to Prevent Trip of High Start-Up Current)
- * Self-Test and Software Calibration
- * Highly Visible Vacuum-Fluorescent Display
- * Front and Rear Output Terminal
- * Standard Interface: RS-232C, GPIB
- * Optional European Jack Type Terminal

European Type Jack Terminal



Rear Panel



The PSM-Series is a single output / dual range, 120W or 200W, programmable linear DC power supply. OVP, OCP, OTP, and output On/Off control protect the PSM-Series and their loads from unexpected conditions. High resolution, high regulation, and low ripple are maintained at 1mV/1mA, 0.01%, and <350 ^µVrms, respectively. Operation and configuration is simplified with a digital interface and a clear LCD display. Standard features include; store/recall output memories, automatic stepping with timers for continuous testing and self-testing and software calibration features to reduce maintenance overhead. SCPI programming, LabVIEW drivers, RS-232C and GPIB interfaces enable easy automated test system integration and remote control. The PSM-Series is an ideal choice for high precision applications such as QA verification and product development.

		PSM-2010	PSM-3004	PSM-6003
DC OUTPUT				
Low Range		0 - 8V/20A	0 - 15V/7A	0 - 30V/6A
High Range		0 - 20V/10A	0 - 30V/4A	0 - 60V/3.3A
CONSTANT VO	LTAGE OPERAT	TION		
Regulation (%	of output + offset)	Load regulation < 0.01%	6 + 2mV; Line regulation s	c 0.01% + 2mV
Ripple & Nois	е	< 350 μVrms/3mVpp	< 350 µVrms/2mVpp	≤50V:<500 μVrms/3mVpp >50V:<1mVrms/3mVpp
CONSTANT CU	RRENT OPERA	TION		
Regulation (%	of output + offset)	Load regulation ≤ 0.01%	6 + 250μA; Line regulation	n ≤ 0.01% + 250µA
Ripple & Nois	е	< 2mArms		
RESOLUTION				
Programming	Voltage	1mV	1mV	2mV
	Current	1mA	0.5mA	0.5mA
Readback	Voltage Current	0.5mV 1mA	0.5mV	1mV 0.5mA
			0.1mA	U.SMA
Front Panel	Voltage	1mV	20	
01/0/00	Current	1mA(<10A),10mA(≥10A	1)	
OVP/OCP	Voltage	10mV 10mA		
	Current	TUMA		
ACCURACY				
Programming	Voltage	0.05% + 10mV		
Readback	Current	0.2% + 10mA		
кеапраск	Voltage Current	0.05% + 5mV 0.15% + 5mA		
OVP/OCP	Voltage	0.1% + 10mV		
	Current	0.4% + 10mA		
TRANSIENT RE	SPONSE			
		< 50µsec (for output to in output current from	o recover within 15mV fo full load to half load)	ollowing a change
COMMAND PR	OCESSING TIM	ME .		
		100 ms		
VOLTAGE PROC	GRAMMING RE	SPONSE TIME (for resistiv	ve load) (10% ~ 90%)	
Voltage Up	Full Load	95 ms	50 ms	80 ms
, situate op	No Load	45 ms	20 ms	100 ms
Voltage Down	Full Load	30 ms	45 ms	30 ms
	No Load	450 ms	400 ms	450 ms
STABILITY (% o	f output + offse			
Voltage Current		0.02% + 1mV 0.1% + 1mA		
MEMORY		V-179 T IIIIN		
Store/Recall		100 sets		
	OEFFICIENT PE	R°C ± (% of Output + Offset)		
		0.01% + 3mV		
voitage		0.02% + 3mA		
	E			
Current			Hz	
Voltage Current POWER SOURC AC 100V/120V/	220V±10%, 23	OV (-6% -+ 10%), 50/60	1	
Current POWER SOURCE	220V±10%, 23	0V (-6% -+ 10%), 50/60		
Current POWER SOURC AC 100V/120V/: INTERFACE		0V (-6% + 10%), 50/60		
Current POWER SOURCE AC 100V/120V/	2C , GPIB	0V (-6% + 10%), 50/60		

ORDERING INFORMATION

PSM-2010 200W Single Output, Programmable Power Supply
PSM-6003 200W Single Output, Programmable Power Supply
PSM-3004 120W Single Output, Programmable Power Supply

ACCESSORIES :

User manual x 1, Power cord x 1, Test lead GTL-104A x 1, European test lead GTL-204A x 1, Ground lead GTL-201A x 1 (European Terminal), Sense lead GTL-202 x 1 (European Terminal)

OPTION

Opt. 01 GRA-407 Rack Mount Kit

OPTIONAL ACCESSORIES

GTL-232 RS-232C Cable, 9-pin Female to 9-pin, Null Modem for PC Computer GRA-407 Rack Mount Kit GTL-248 GPIB Cable, Double Shielded, 2000mm

FREE DOWNLOAD

PC Software PC Software including Data Log; Remote Control Software Labview Driver; PSM VB Example; PSM VC++ Example

Programmable Linear D.C. Power Supply



PSS-2005/3203











FEATURES

- * Digitized Programmable Interface
- * High Resolution 10mV, 1mA
- * High Stability, Low Drift
- * Over-Voltage, Over-Current, Over Temperature Protection
- * Intelligent Fan Control (Change by Output Power)
- * Built-in Buzzer Alarm
- * LabVIEW Driver
- * Standard Interface : RS-232C
- * Optional Interface : GPIB (IEEE-488.2)
- * Optional European Jack Type Terminal

European Type Jack Terminal



Rear Panel



The PSS-Series is a single output, 96W or 100W, programmable linear DC power supply. OVP, OCP, and OTP protect the PSS series and their loads from unexpected conditions. The LCD panel simultaneously displays output and other parameters and the regulated cooling fan ensures low noise for comfortable operation. RS232C and GPIB interfaces, SCPI command sets and LABVIEW drivers make remote control and ATE software development easier. (Note: only RS-232C or GPIB can be installed at one time) The compact PSS series is suitable for any high resolution bench-top or rack mount application.

SPECIFICATIONS		taur.
	PSS-2005	PSS-3203
OUTPUT		2000
Voltage	0 – 20V	0 – 32V
Current	0 – 5A	0 – 3A
OVP LOAD REGULATION	0 – 21V	0 – 33V
	2 2 - V / 5 F - V - sting	2.04.)
Voltage Current	≤3mV (≤5mV, rating current > ≤3mA (≤5mA, rating current >	
LINE REGULATION	Sink (Sink, fating current)	3.0A)
	< 3mV	
Voltage Current	< 3mA	
RESOLUTION	1	
Voltage	10mV	
Current	1mA (2mA, rating current > 3.0	A)
OVP	10mV	5225
PROGRAM ACCURACY (25 ±	5°C)	
Voltage	≤ 0.05%+20mV	
Current	≤ 0.1%+5mA (+10mA, rating cu	urrent > 3.0A)
OVP	≤ 0.05%+20mV	
RIPPLE & NOISE (20Hz ~ 20M		
Voltage	Ripple ≤ 1mVrms/3mVp-p ; Noi	
Current	≤ 3mArms (≤ 5mArms, rating of the contract	current > 3.0A)
TEMPERATURE COEFFICIENT	「 (0 ~ 40°C)	
Voltage	≤ 100ppm+3mV	
Current	≤ 100ppm+3mA	
READBACK RESOLUTION		
Voltage	10mV	
Current	1mA (2mA, rating current > 3.0	A)
READBACK ACCURACY(25 ± 5		
Voltage Current	≤ 0.05%+10mV ≤ 0.1%+5mA (10mA rating curr	rent = 3 0A)
		EII > 3.0A)
READBACK TEMPERATURE C		
Voltage	≤ 100ppm+10mV	200
Current	≤ 100ppm+5mA (10mA rating of	current > 3.UA)
RESPONSE TIME	100.0	
Voltage Up (10%-90%) Voltage Down (90%-10%)	≤ 100mS ≤ 100mS (≥10% rating load)	
	≤ 100m3 (≥10% rating load)	
DRIFT	. 300 30 1/	
Voltage	≤ 100ppm+10mV	
Current	≤ 150ppm+10mA	
INTERFACE	CDID	
Standard : RS-232C; Option : 0	ALIR	
POWER SOURCE		
AC 100V/120V/220V±10%, 23	0V (+10%/-6%), 50/60Hz	
DIMENSIONS & WEIGHT		
108(W) x 142(H) x 318(D) mn	1, Approx. 4.8kg	

ORDERING INFORMATION

PSS-2005 100W Single Output Programmable D.C. Power Supply PSS-3203 96W Single Output Programmable D.C. Power Supply

ACCESSORIES:

User manual x 1, Power cord x 1 Test lead GTL-104A x 1 (PSS-2005) or GTL-105A x 1 (PSS-3203) European Test Lead GTL-204A x 1 (PSS-2005) or GTL-203A x 1 (PSS-3203)

OPTION

Opt.01: GPIB Interface (factory installed)

OPTIONAL ACCESSORIES

GTL-232 RS-232C Cable, 9-pin Female to 9-pin, null Modem for Computer

GRA-408 Rack Adapter Panel (19" 4U)
GTL-248 GPIB Cable, Double Shielded, 2000mm

FREE DOWNLOAD

PC Software PC Software including Data Log; Remote Control Software

Driver LabView Driver

Note: When Opt.01 GPIB interface is ordered, the standard interface RS-232C will be deleted.



PPE-3323







FEATURES

- * Easy Operation with UP/DOWN Key
- * High Resolution: 10mV, 1mA
- * Over Voltage Protection (by Software)
- * 50 Sets Memory
- * Self Test and Software Calibration
- * Auto Step Running With Timer Setting
- * Triple Output
- * Auto Tracking
- * RS-232C Communication
- * High Stability, Low Drift
- * 4 Digit Display
- * IEC Safety Regulation

Rear Panel



The PPE-Series is a 3-channel, programmable linear DC power supply with 207W output. The PPE-Series features OVP and OCP and is compliant with all major safety standards (UL, CSA, and IEC) for safe, reliable operation. The digital interface and smart features simplify operation and configuration with output limit store/recall functions, tracking, serial operation, and auto stepping for continuous testing. The series has PC software and SCPI commands as standard for remote control and PC interfacing via RS-232C. The versatile PPE-Series is ideal for high-level applications requiring high resolution, multiple outputs, and an extra level of safety.

OUTPUT	
Voltage	0~+32V,0~-32V,3.3V/5V FIXED
Current	0-+3A,03A,3A FIXED
OVP	0-+33V,033V
LOAD REGULATION	
Voltage	≤6mV
Current	≦3mA
LINE REGULATION	
Voltage	≦3mV
Current	≦3mA
RESOLUTION	
Voltage	10mV (20mV rating voltage > 36V)
Current	1mA(2mA rating current > 3.5A) 10mV(20mV rating voltage > 36V)
PROGRAM ACCURACY (25 ±5°	
Voltage	≤0.05% + 25mV (+ 50mV rating voltage > 36 V)
Current	≤0.2% + 10mA
OVP	≦2% + 0.6V
RIPPLE & NOISE (20Hz ~ 20M	
Voltage	Ripple 1mVrms / 3mVp-p Noise 2mVrms / 30mVp-p
Current	≤3mA rms (≤5mA rms rating current > 3.5A)
TEMPERATURE COEFFICIENT	
Voltage	≤100ppm + 3mV
Current	≤150ppm + 3mA
READBACK RESOLUTION/AC	CURACY (25± 5°C)
Voltage	10mV (20mV rating voltage > 36V)
Current	1mA (2mA rating current > 3.5A)
Voltage	≤0.05% + 25mV (+ 50mV rating voltage > 36V)
Current	≤0.2% + 10mA
RESPONSE TIME	
VOLTAGE UP 10% ~ 90%	≤100mS ≤100mS (> antice lead)
VOLTAGE DOWN 90% ~ 10%	≤100mS (≥ rating load)
READBACK TEMPERATURE CO	
Voltage Current	≤100ppm + 10mV (+ 20mV rating voltage > 36V) ≤150ppm + 10mA
DRIFT	_ 13099111 1 101111
Voltage	≤100ppm + 10mV
Current	≤150ppm + 10mA
TRACK OPERATION	
Tracking Error	≤0.1% + 50mV
Series Regulation	≤50mV
PARALLEL OPERATION (PPT-S	ieries only)
Program Accuracy	Voltage ≤ 0.05% + 25mV (+ 50mV rating voltage > 36V)
(25±5°C)	Current ≤ 0.2% + 20mA OVP ≤ 2% + 0.6V
Load Effect	Voltage ≤3mV rear output (≤6mV front output)
Load Ellect	Current ≤6mA (≤12mA rating current > 3.5A)
Source Effect	Voltage ≤3mV; Current ≤6mÅ
MEMORY	
Store/Recall	50 sets
TIMER	
Setting Time	1 second – 99 minutes (Max. 99 minutes x 50 sets)
Resolution Function	1 second for output working loop (Auto Step running)
STANDARD INTERFACE	0.01 1.00000000000000000000000000000000
RS-232C	
POWER SOURCE	
AC 100V/120V/ 220V/240V±10	0%, 50/60Hz
DIMENSIONS & WEIGHT	TOTAL
255(W) x 145(H) x 346(D) mm	: Approx. 10kg
-35(11) 1. 13(11) 1. 340(D) IIIII	2.4E:

PPE-3323	207W Triple Output Programm	able D.C. Pow	er Supply		
Model	Independent	Series	Parallel	Display Type	Weight (kg
PPE-3323	(0-32V/0-3A)x2,(5V/3A)FIXED	64V/3A	32V/6A	LED	10
	1, Power cord x 1, Test lead GTL-10	5A x 3			
Jser manual x	1, Power cord x 1, Test lead GTL-10	95A x 3			
	1, Power cord x 1, Test lead GTL-10	5A x 3			



PPT-1830/PPT-3615







FEATURES

- * Easy Operation with UP/DOWN Key
- * High Resolution: 10mV, 1mA
- * Over Voltage Protection, Over Current Protection (PPT-Series by Hardware)
- * 50 Sets Memory
- * Self Test and Software Calibration
- * Auto Step Running With Timer Setting
- * FRONT/REAR Output and Sense Switch Selectable
- * Triple Output
- * Auto Series and Parallel Operation
- * Auto Tracking
- * IEEE-488.2 and SCPI Compatible Command set
- * GPIB Standard Interface
- * LabVIEW Driver
- * High Stability, Low Drift
- * 4 Digit Display
- * IEC Safety Regulation

Rear Panel



The PPT-Series a is 3-channel, programmable linear DC power supply with 138W or 126W outputs. The PPT-Series features OVP and OCP and is compliant with all major safety standards (UL, CSA, and IEC) for safe, reliable operation. For extra precision, the PPT-Series includes remote sensing that adds an extra level of precision by compensating cable losses between loads. The digital interface and smart features simplify operation and configuration with output limit store/recall functions, automatic tracking, automatic serial or parallel operation, and auto stepping for continuous testing. The series has Labview drivers and SCPI commands as standard for remote control and PC interfacing via GPIB. The versatile PPT-Series is ideal for high-level applications requiring high resolution, multiple outputs, and an extra level of safety.

SPECIFICATIONS		
MODEL	PPT-1830	PPT-3615
OUTPUT		
Voltage	0-18Vx2,0-6Vx1	0-36Vx2,0-6Vx1
Current	0-3Ax2,0-5Ax1	0~1.5Ax2,0~3Ax1
LOAD REGULATION	0-20Vx2,0-7Vx1	0-38.5Vx2,0-7Vx1
Voltage Current	≤ 3mV rear output (≤ 6mV front output ≤ 3mA (≤ 6mA rating current > 3.5A)	t)
LINE REGULATION		
Voltage	≤3mV	
Current	≤3mA	
RESOLUTION	T	
Voltage Current OVP	10mV (20mV rating voltage > 36V) 1mA (2mA rating current >3.5A) 10mV(20mV rating voltage > 36V)	
PROGRAM ACCURACY (25 ±5°	c)	
Voltage Current OVP	≤0.05% + 25mV (+ 50mV rating voltag ≤0.2% + 10mA ≤2% + 0.6V	e > 36 V)
RIPPLE & NOISE (20Hz ~ 20M		
Voltage	Ripple 1mVrms / 3mVp-p Noise 2mVrms / 30mVp-p	NG CON
TEMPERATURE COEFFICIENT	≤3mA rms (≤5mA rms rating current:	> 3.5A)
Voltage	≤100ppm + 3mV	
Current	≤150ppm + 3mA	
READBACK RESOLUTION/AC		
Voltage	10mV (20mV rating voltage > 36V)	
Current	1mA (2mA rating current > 3.5A)	2011
Voltage Current	≤0.05% + 25mV (+ 50mV rating voltag ≤0.2% + 10mA	e > 36V)
RESPONSE TIME	Constitution of the Consti	
VOLTAGE UP 10% ~ 90% VOLTAGE DOWN 90% ~ 10%	≤100mS ≤100mS (≥ rating load)	
READBACK TEMPERATURE CO		
Voltage Current	≤100ppm + 10mV (+ 20mV rating volt: ≤150ppm + 10mA	age > 36V)
DRIFT	=130ppiii + Tollia	
Voltage	≤0.03% + 6mV	
Current	≤0.1% + 6mA	
TRACK OPERATION		
Tracking Error	≤0.1% + 50mV	
Series Regulation PARALLEL OPERATION	≤50mV	
Program Accuracy	Voltage ≤0.05% + 25mV (+ 50mV ra	ting voltage > 36V \
(25±5°C)	Current ≤ 0.2% + 20mA	ung voltage > 30v)
Load Effect	OVP ≤2% + 0.6V Voltage ≤3mV rear output (≤6mV fr	ont output \
	Current ≤6mA (≤12mA rating curre Voltage ≤3mV; Current ≤6mA	nt > 3.5A)
Source Effect MEMORY	voitage ≤5mv, Current ≤6mA	
Store/Recall	50 sets	
TIMER		
Setting Time Resolution Function	1 second - 255 minutes (Max. 255 minutes)	10000000000000000000000000000000000000
STANDARD INTERFACE	for output working loop (Auto Step run	
GPIB		
POWER SOURCE		
AC 100V/120V/ 220V/240V±10	0%, 50/60Hz	
DIMENSIONS & WEIGHT		
255(W) x 145(H) x 346(D) mm	; Approx. 10kg	

		ORDERING	SINFOR	MATION		
PPT-183 PPT-361		138W Triple Output Programma 126W Triple Output Programma				
Mode	el	Independent	Series	Parallel	Display Type	Weight (kg)
PPT-18	830	(0-18V/0-3A)x2,(0-6V/0-5A)x1	36V/3A	18V/6A	LED	10
PPT-36	615	(0-36V/0-1.5A)x2,(0-6V/0-3A)x1	72V/1.5A	36V/3A	LED	10
	nual x	1, Power cord x 1, Test lead GTL-105 ACCESSORIES	5A x 3, GTL-10	04A x 3		
GRA-401 GTL-248		k Mount Kit B Cable, Double Shielded, 2000mm	GTL-204A	European test	lead x 3	
FREE D	OWN	LOAD				
Driver	Lab	View Driver				



PST-3201/3202











FEATURES

- * Digitized Programmable Interface
- * High Resolution 10mV, 1mA
- * 192 x 128 LCD Display, Simultaneously Shows Settings and Measuring Result
- * Over-Voltage, Over-Current, Over Temperature Protection
- * Intelligent Fan Control (Changes by Output Power)
- * 100 Sets Memory
- * Auto Step Running With Timer Setting
- * Auto Series and Parallel Function
- * LabVIEW Driver
- * Standard Interface : RS-232C
- * Optional Interface : GPIB (IEEE-488.2)
- * Optional European Jack Type Terminal

European Type Jack Terminal



Rear Panel



PST-Series is a 3-channel, 96W or 158W, programmable linear DC power supply. High resolution is maintained at 10mV, 1mA (3A). OVP, OCP, and OTP protect the PST-Series and its loads from unexpected conditions. PST-Series is capable of independent, series or parallel operation for increased flexibility. The large LCD display conveniently displays all outputs and configurations simultaneously to simplify operation. The programmable interface allows automatic stepping, 100 sets of memory and comprehensive timing operations. GPIB and RS232C interfaces, Labview drivers and SCPI compatibility allow easy ATE software development and remote control. The versatile PST-Series is ideal for high resolution, multiple output, automated operations such as production testing and rack mounting systems.

SPECIFICATIONS	DCT 2202	DCT 2203
OLUTAL IT	PST-3202	PST-3201
OUTPUT		T-2000
Voltage	0~32Vx2, 0~6Vx1	0-32Vx3
Current OVP	0~2Ax2, 0~5Ax1 0~33Vx2, 0~7Vx1	0-1Ax3 0-33Vx3
LOAD REGULATION	0~33VX2, 0~7VX1	0~33VX3
	2 1/ 5 1/ 1	2.041
Voltage	≤ 3mV (≤ 5mV rating current : ≤ 3mA (≤ 5mA rating current :	
Current	Sink (Sink rating current	-3.0A)
LINE REGULATION	- 2 - 1/	
Voltage Current	≤ 3mV < 3mA	
RESOLUTION	2311K	
Voltage	10mV	
Current	1mA (2mA, rating current >3.0	Δ)
OVP	10mV	~)
PROGRAM ACCURACY(25		
Voltage	< 0.05%+20mV	
Current	≤ 0.1%+5mA (+10mA, rating c	urrent>3 OA)
OVP	< 0.05%+20mV	arrente s.org
RIPPLE & NOISE(20Hz~20		
		-1
Voltage	Ripple: $\leq 1 \text{mVrms/3mVp-p}$; N $\leq 3 \text{mArms}$ ($\leq 5 \text{mArms}$, rating	
Current		current >3.0A)
TEMPERATURE COEFFICI		
Voltage Current	≤ 100ppm+3mV < 100ppm+3mA	
	≤ 100ppm+3mx	
READBACK RESOLUTION	30>//20>/+i i+ 2	0.0
Voltage Current	10mV (20mV, rating voltage >30 1mA(2mA, rating current >3.00	
READBACK ACCURACY(25		7
Voltage	≤ 0.05%+10mV(+20mV, rating	voltage >36V)
Current	≤ 0.1%+5mA(+10mA, rating co	
READBACK TEMPERATUR	_	
Voltage	≤ 100ppm+10mV(+20mV, ratir	ng voltage >36V/
Current	≤ 150ppm+10mA(+20mA, ration ≤	
RESPONSE TIME		- B
Voltage Up (10%-90%)	< 100mS	
Voltage Down (90%~10%)	≤ 100mS (≥ 10% rating load)	
DRIFT		
Voltage	≤ 100ppm+10mV(+20mV, ratio	ng voltage >36V)
Current	≤ 150ppm+10mA	ig voltage >30v)
TRACK OPERATION	_ ·	
Tracking Error	< 0.1%+20mV	
Series(Load Effect)	< 20mV	
PARALLEL OPERATION		
	Voltage = 0.05% , 20mV Curren	t = 0.196+10m4 OVP = 0.0594 - 20mV
Program Accuracy (25±5°C) Load Effect	Voltage ≤ 0.05%+20mV, Curren Voltage ≤ 3mV (≤ 5mV, rating of	$t \le 0.1\% + 10$ mA, OVP $\le 0.05\% + 20$ mV
Source Effect	Voltage ≤ 3mV;Current ≤ 6mA	arrenessory, carrents only
MEMORY		
	100 Cata	
Store/Recall TIMER	100 Sets	
	0.1 second 00.14(sector 50	and (May 00 Minutes 50 1 - 200
Setting Time Resolution	0.1 second~99 Minutes 59 second.1 second	ond (Max. 99 Minutes 59 second x 100
Function	Auto step running (for output	working loop)
INTERFACE		
Standard : RS-232C : Ontic	n: GPIR (IFFF488 2)	
Standard : RS-232C ; Option	n: GPIB (IEEE488.2)	
Standard : RS-232C ; Option POWER SOURCE		
Standard : RS-232C ; Option POWER SOURCE	6, 230V(+10%/-6%), 50/60Hz	

ORDERING INFORMATION PST-3202 158W Triple Output Programmable D.C. Power Supply PST-3201 96W Triple Output Programmable D.C. Power Supply Independent Model Series Parallel Display Type Weight (kg) LCD PST-3201 (0-32V/0-1A)x3 64V/1A 32V/2A 10 PST-3202 (0-32V/0-2A)x2,(0-6V/0-5A)x1 64V/2A 32V/4A LCD ACCESSORIES: User manual x 1, Power cord x 1, Test lead: GTL-104A x 3 (PST-3202) or GTL-105A x 3 (PST-3201) European test lead: GTL-204A x 3 (PST-3202) or GTL-203A x 3 (PST-3201) Opt.01 GPIB Interface (factory installed) OPTIONAL ACCESSORIES GRA-407 Rack Mount Kit GTL-232 RS-232C Cable, 9-pin Female to 9-pin, GTL-248 GPIB Cable, Double Shielded, 2000mm null Modem for Computer

Driver

LabView Driver

PC Software including Data Log; Remote Control Software

FREE DOWNLOAD

PC Software

Multiple Output Linear D.C. Power Supply



GPE-X323 Series



FEATURES

- * 1/2/3/4 Independent Isolated Output
- * 4.3 Inch LCD Display
- * Setting & Read Back Resolution 100mV/10mA (*1)
- * Output ON/OFF Switch
- * Analog Control (Remote I/O) for Output ON/OFF
- * Set View Function for Checking an Original V/I Setting During Output On
- * Key Lock Function
- * Tracking Series and Parallel Operation
- * Optional European Jack Type Terminal

European Type Jack Terminal



Rear Panel



The GPE-X323 series is a cutting edge, economical linear DC Power supply. The GPE-X323 series features output power from 192 to 217 watts, three independent isolated output channels (for GPE-3323), high resolution, low noise, high reliability, and compact size. The GPE-X323 series has a built-in digital panel control design to replace conventional control method. This unique design allows the GPE-X323 series linear DC power supply to provide users with more efficient functionalities, including set view and key lock so as to expedite the operation process. The key lock function protects DUTs by preventing others from changing voltage and current parameters. Additionally, output key light facilitates users in clearly reading the operational status of power supply.

SPECIFICATIONS		CDE 4	222			DE 222	,	CDE	2222	CDE 1226
011701711007		GPE-4	323		G	PE-332	5	GPE-	2323	GPE-1326
OUTPUT MODE	CLIZ	61.10	61.13	6114	61.13	61.10	61.13	61.13	61.10	CLIZ
Number of Channel	CH1	CH2	CH3		CH1	CH2	CH3		CH2	CH1
Voltage					0~32V		5V	0~32V		0~32V
Current Tracking Series Voltage	0~3A		0~1A	0~1A		0~3A	5A	0~3A	0~3A	0~6A
Tracking Parallel Current	0~6			- 1	0~6		_		54V	-
	0~	6A			0~	6A		0~	6A	
CONSTANT VOLTAGE										
Line Regulation		%+3m								
Load Regulation			-	-	ent ≦3					
Dinale & Noice		/rms(5			ent >3	(A)				
Ripple & Noise Recovery Time					re mini	mum l	0 hso	54)		
CONSTANT CURREN		≦100μs (50% Load Change, minimum load 0.5A)								
Line Regulation		6+3mA								
Load Regulation		0.2%+3mA								
Ripple & Noise	≦3mA									
TRACKING OPERATIO	N (CH1	,CH2)								
Tracking Error	≦0.19	6+10m	V of N	laster(0~32V)	No Lo	ad, w	ith Loa	d add le	oad
2015 241.2 241241100 2010000		ion≦1								
Parallel Regulation	Line:	≤0.019	%+3m	V						
	Load :				ng curr					
					ng curre		۹)			
Series Regulation	1				d: ≦10	00mV				
Ripple & Noise	13.23.23.23.23	rms , 5	Hz ~ 1	MHz						
CH3 OPERATION FO	R (GPE-3	323)								
Output Voltage	5.0V, ±	5%								
Output Current	5A									
Line Regulation	≦3mV	1								
Load Regulation	≦5mV	1								
Ripple & Noise	1mVrn	ns (5Hz	~1MF	Hz)						
METER										
Voltage Resolution	100mV	(*1)								
Current Resolution	10mA	(*1)								
Setting Accuracy	Voltage	e±(0.19	6 of re	eading	+30mV); Curre	ent±(0.3% of	reading	g +6mA)
Readback Accuracy	Voltage	e±(0.19	6 of re	eading	+30mV); Curre	ent±(0.3% of	readin	g +6mA)
INSULATION	: 1									
Chassis and Terminal	20ΜΩ	or abo	ve (D	C 500V)					
Chassis and AC Cord	30MΩ	or abo	ve (D	C 500V)					
ENVIRONMENT CON	DITION									
Operation Temp	0~40°C									
Storage Temp	-10~70	°C								
Operating Humidity	≤80%	RH								
Storage Humidity	≤70%	RH								
OTHER										
Power Source	AC100	V/120\	//220\	/+10%	; 230V (+10%~	-6%)	50/60	Hz.	
Dimensions & Weight					mm ; A			30/001	12	
	210(11	/~ 133(, ^ .	33(2)	, /	.ppi ox.	, ng			

ORDERING INFORMATION

GPE-1326	Single Channel, 192W Linear DC Power Supply
GPE-2323	2 Channels, 192W Linear DC Power Supply
GPE-3323	3 Channels, 217W Linear DC Power Supply
GPE-4323	4 Channels, 212W Linear DC Power Supply
ACCESSOR	IES :
User Manua	(CD) x 1 ; Power Cord x 1
GPE-1326	Test Lead GTL-104Ax 1; GTL-105A x 1; or European GTL-204A x 1, GTL-203A x 1
GPE-2323	Test Lead GTL-104A x 2 ; or European GTL-204A x 2

GPE-3323 Test Lead GTL-104A x 3 ; or European GTL-204A x 3
GPE-4323 Test Lead GTL-104A x 2 ; GTL-105A x 2 or European GTL-204A x 2 , GTL-203A x 2

Note: (*1) For a higher resolution (10mV/1mA), please follow the setting procedure of the user manual on p35.

When using a higher resolution, the current or voltage adjustment may be limited by the knob sensibility.

Multiple Output Linear D.C. Power Supply



The GPS Series linear power supplies have 2-4 independent output channels, 180W to 200W output, overload and reverse polarity protection as well as an output ON/OFF switch for safety. The tracking mode switches allow voltage/current to be output in parallel or series and the intelligent fan reduces noise. The GPS-Series is an entry level general purpose power supply recognized for their affordability in education, laboratories and industry.

GPS-2303/3303/4303



FEATURES

- * 2, 3 and 4 Independent Isolated Output
- * Four "3 Digits" LED Displays
- * 0.01% Load and Line Regulation
- * Low Ripple and Noise
- * Tracking Operation and Auto Series/Parallel Operation
- * Output ON/OFF Switch
- * Output Voltage and Current Setting When Output Disable (Except for GPS-2303)
- * Fan Speed Control Circuit to Minimize Fan Noise
- * Over Load and Reverse Polarity Protection
- * Optional European Jack Type Terminal

European Type Jack Terminal



GPS-001 Voltage/Current protection Knob



Rear Panel



GPS-3303

SPECIFICATIONS						
		GPS-4303		GPS-	3303	GPS-2303
OUTPUT MODE						
	CH1 C	H2 CH3	CH4	CH1 CH2	CH3	CH1 CH2
Voltage	0 - 30	V 2.2 ~ 5.2V	8 - 15V	0 - 30V	5V Fixed	0 - 30V
Current	0 - 3A	1A Max.	1A Max.	0 – 3A	3A Max.	0 - 3A
Tracking Series Voltage	0 ~ 60	v .		0 - 60V		0 ~ 60V
Tracking Parallel Current	0 ~ 6A			0 - 6A		0 - 6A
CONSTANT VOLTAGE	OPERATIO	N (CH1, CH2)				
Line Regulation	≤ 0.01%	+ 3mV				
Load Regulation		+ 3mV (rating cu				
D'I. C M. '	_	+ 5mV (rating cu				
Ripple & Noise Recovery Time		ns , 5Hz – 1MHz 5 (50% Load chan		load 0.5A)		
			ige, iviinimum	load 0.3A)		
CONSTANT CURRENT						
Line Regulation	≤ 0.2% -					
Load Regulation Ripple & Noise	≤ 0.2% - ≤ 3mArr					
TRACKING OPERATION	N (CH1, C	H2)				
Tracking Error		10mV of CH1				
Series Regulation	≤ 0.01%					
Load Regulation Ripple & Noise	≤ 300m\ < 2m\/rr	/ ns , 5Hz – 1MHz				
CH3 OPERATION (for						
CH3 Voltage		3: 2.2V - 5.2V ,	GPS-3303 : 5V	Fix		
Line Regulation	< 5mV					
Load Regulation	≤ 15mV					
Ripple & Noise		ns, 5Hz – 1MHz				
Current Output		3 : 1A, GPS-3303	: 3A			
CH4 OPERATION (for	GPS-430)3)				
CH4 VOLTAGE	8V - 15\	/				
Line Regulation Load Regulation	≤ 5mV					
Ripple & Noise	< 10mV < 2mVrr	ns, 5Hz – 1MHz				
	1A	113, J112 - 11VII12				
Current Output METER	IA					
Digital	2 dinite	0.5" LED display				-
Digital		3/3303 Out ON	Accuracy + (0.5	% of rdg + 2 di	gits)	
	GPS-430	3/3303 Out OFF	Accuracy + (0.	5% of rdg + 8 c	ligits)	
	GPS-230	3 Accuracy ± (0.5	5% of rdg + 2 o	digits)		
INSULATION			2.77			
Chassis and Terminal Chassis and AC Cord		0V / 20MΩ 0V / 30MΩ				
POWER SOURCE	3-1000F85X	•				
AC 100V/120V/220V±10	%, 230V(+10%6%), 50/6	60Hz			
DIMENSIONS & WEIGH						
255 (14) - 145 (11) - 265 (1	D) A-	near 7 kg				

ORDERING INFORMATION

GPS-4303 4-channels, 200W Multiple Output Linear DC Power Supply
GPS-3303 3-channels, 195W Multiple Output Linear DC Power Supply
GPS-2303 2-channels, 180W Multiple Output Linear DC Power Supply

ACCESSORIES :

User manual x 1, Power cord x 1,

GPS-4303 : Test lead GTL-104A x 2,GTL-105A x 2 ; European test lead GTL-203A x 2,GTL-204A x 2, GTL-201 x 1 GPS-3303 : Test lead GTL-104A x 2,GTL-105A x 1 ; European test lead GTL-203A x 1,GTL-204A x 2, GTL-201 x 1

GPS-2303: Test lead GTL-104A x 2; European test lead GTL-204A x 2, GTL-201A x 1

OPTIONAL ACCESSORIES

GPS-001 Voltage/Current Protection Knob

255(W) x 145(H) x 265(D) mm, Approx. 7 kg

Triple Output Linear D.C. Power Supply



GPC-3060D/6030D

The GPC-Series is a triple output, 375W, linear DC power supply. Channel 1 and 2 are fully adjustable (model dependant) and channel 3 is fixed at 5V/3A with ripple and noise at less than 2mVrms. Overload and reverse polarity protection keep GPC-Series and its loads safe from unexpected conditions. GPC features continuous or dynamic internal load selection and series or parallel tracking for application flexibility. The GPC-Series is an ideal solution for inexpensive bench-top applications requiring low noise and multiple outputs.

FEATURES

- * Triple Output
- * Auto Tracking
- * Auto Series and Parallel Operation
- * Constant Voltage and Constant Current Operation
- * Low Ripple and Noise
- * Internal Select for Continuous or Dynamic Load
- * Overload and Reverse Polarity Protection
- * 3 1/2 Digits 0.5" LED Display
- * 5V, 3A Fixed Output

SPECIFICATIONS	
OPERATION MODE	
Independent	Two independent outputs and 5V fixed output Output from 0 to rating volts and 0 to rating amperes
Series	Output from 0 to ± rating volts at rating amperes each Output from 0 to double rating volts at rating amperes
Parallel	Output from 0 to double rating amperes at rating volts
CONSTANT VOLTAGE C	PERATION
Regulation	Line regulation ≤ 0.01% + 3mV Load regulation ≤ 0.01% + 3mV (rating current≤3A) ≤ 0.01% + 5mV (rating current≤10A) ≤ 0.02% + 5mV (rating current≥10A)
Ripple & Noise	≤1mVrms 5Hz ~ 1MHz
Recovery Time	≤100µS (50% Load change, Minimum load 0.5A)
CONSTANT CURRENT O	PERATION
Regulation	Line regulation≤0.2% + 3mA Load regulation≤0.2% + 5mA
Ripple Current	≤3mArms
5V FIXED OUTPUT	10.72
Regulation	Line regulation ≤5mV
	Load regulation ≤10mV
Ripple & Noise	≤2mVrms
Voltage Accuracy	5V ⁺ 0.25V
Output Current	3A
TRACKING OPERATION	
Tracking Error Series Regulation	≤ 0.5% + 10mV of the master ≤ 300mV
METER	
Digital	3½ digits 0.5" LED display Accuracy±(0.5% of rdg + 2 digits)
INSULATION	
Chassis and Terminal Chassis and AC Cord	100M Ω or above (DC 1000V) 100M Ω or above (DC 1000V)
POWER SOURCE	
AC 100V/120V/220V/240V	/ <u>+</u> 10%, 50/60Hz
DIMENSIONS	
255 (W) x 145 (H) x 420 (D)	mm

	Model	Independent	Series	Parallel	Weight (kg
GPC-6030D	375W D.C. Power Supply	$(0-60V/0-3A) \times 2$, $(5V/3A MAX) \times 1$	120V 3A	60V 6A	18.5
GPC-3060D	375W D.C. Power Supply	(0 - 30V/0 - 6A) x 2 , (5V/3A MAX) x 1	60V 6A	30V 12A	18.5
	S: x1, Power cord x1 -105A x1 (≤3A) or GTL-104	IA x 2 (≤10A)			
OPTIONAL	ACCESSORIES				
GRA-401	Rack Mount Kit				

Linear D.C. Power Supply



The GPR-H Series consists of single output linear DC power supplies with voltage outputs rating from 8V to 300V. The series includes overload and reversed polarity protection to protect devices under test from being damaged due to impropriate operation. The internal select for dynamic loads is often used for amplifier testing. It can support high pulse current derived from dynamic processes as well as support low noise and noise, which make it suitable for high-end bench-top applications requiring precision. Its rear panel supports output wiring. These features combined into one assembly allow the GPR-H Series to predominate in applications requiring high voltage or high current.

GPR-H Series





FEATURES

- * 0.01% High Regulation
- * Constant Voltage and Constant Current Operation
- * Internal Select for Continuous or Dynamic Load
- * Low Ripple and Noise
- * Overload and Reverse Polarity Protection
- * 3 1/2 Digit 0.5" LED Display
- * Internal Select for Continuous or Dynamic Load (for GPR-3510HD/GPR-6060D/ GPR-7550D)

Rear Panel



Regulation	Line regulation ≤ 0.01% + 3mV Load regulation ≤ 0.01% + 5mV (<10A)	
	≤0.02% + 5mV (>10A)	
Ripple & Noise	≤1mVrms 5Hz – 1MHz	
Recovery Time	≤100 µS (50% load change, minimum load 0.5A)	
Output Range	0 to rating voltage continuously adjustable	
CONSTANT CURRENT O	PERATION	
Regulation	Line regulation≤ 0.2% + 3mA	
	Load regulation≤0.2% + 5mA	
Ripple Current	≤5mArms (≤20A),≤10mArms (≤30A)	
	≤20mArms (≤50A)	
Output Range	0 to rating current continuoulsy adjustable	
METER		
Туре	3 1/2 Digit 0.5" LED display	
Accuracy	±(0.5% of rdg + 2 digits)	
INSULATION		
Chassis and Terminal	100MΩ or above (DC 1000V)	
Chassis and AC Cord	100M Ω or above (DC 1000V)	
POWER SOURCE		
AC 100V/120V/220V/240V	±10%, 50/60Hz	
DIMENSIONS		
254(W) x 152(H) x 456(D)	mm	

Model		Output Volts (V)	Output Amps (A)	Weight (kg)
GPR-0830HD	240W D.C. Power Supply	0 - 8	0 - 30	18.5
GPR-1820HD	360W D.C. Power Supply	0 - 18	0 - 20	18.5
GPR-3510HD	350W D.C. Power Supply	0 - 35	0 – 10	18.5
GPR-6060D	360W D.C. Power Supply	0 - 60	0 - 6	18.5
GPR-7550D	375W D.C. Power Supply	0 - 75	0 – 5	18.5
GPR-11H30D	330W D.C. Power Supply	0 – 110	0 – 3	13.5
GPR-30H10D	300W D.C. Power Supply	0 – 300	0 – 1	13.5
	$5A \times 1 (\le 3A)$ or GTL-104A $\times 1$	(≦10A) or Not Availab	ole (>10A)	
OPTIONAL AC	CESSORIES			
GTL-122	Test Lead, U-type to Alligator	Test Lead, Max. Curren	t 40A, 1200mm	

Note: C€ Approved Only for GPR-1820HD, GPR-3510HD, GPR-7550D, GPR-11H30D Rear-Panel Output Only for GPR-0830HD, GPR-1820HD



The GPR-M Series is a single output, 180W, linear DC power supply which featuring all the same functions as the GPR-H Series but for lower power demands. Like the GPR-H Series, the GPR-M Series is suitable for high-end precision bench top applications. Low load and line regulation for both constant voltage and constant current mode ensure reliable, predictable output. Overload and reverse polarity protection as well as internal selection for dynamic or constant load are standard.

GPR-M Series



FEATURES

- * 0.01% High Regulation
- * Constant Voltage and Constant Current Operation
- * Internal Select for Continuous or Dynamic Load
- * Low Ripple and Noise
- * Overload and Reverse Polarity protection
- # 3 1/2 Digit 0.5" LED Display

SPECIFICATIONS CONSTANT VOLTAGE O	DEPATION	
Regulation	Line regulation ≤0.01% + 3mV	
Regulation	Load regulation ≤0.01% + 5mV (<10A)	
	Load regulation $\leq 0.01\% + 5 \text{mV} (<10A)$ Load regulation $\leq 0.02\% + 5 \text{mV} (>10A)$	
Ripple & Noise	<1mVrms 5Hz - 1MHz	
Recovery Time	≤100 μS(50% load change, minimum load 0.5A)	
Output Range	0 to rating voltage continuously adjustable	
CONSTANT CURRENT C	PERATION	
Regulation	Line regulation≤0.2% + 3mA	
	Load regulation≤0.2% + 3mA	
Ripple Current	≤3mArms	
Output Range	0 to rating current continuoulsy adjustable	
METER		
Digital	3 1/2 Digits 0.5" LED display	
	Accuracy±(0.5% of rdg + 2 digits)	
INSULATION		
Chassis and Terminal	20M Ω or above (DC 500V)	
Chassis and AC Cord	30M $Ω$ or above (DC 500V)	
POWER SOURCE	•	
AC 100V/120V/220V/240V	/±10%, 50/60Hz	
DIMENSIONS	women and a second a second and	
254(W) x 152(H) x 349(D)	mm	

Model		Output Volts (V)	Output Amps (A)	Weight (kg)
GPR-1810HD	180W D.C. Power Supply	0 – 18	0 – 10	11.5
GPR-3060D	180W D.C. Power Supply	0 - 30	0 - 6	11.5
GPR-6030D	180W D.C. Power Supply	0 - 60	0 – 3	11.5
	Power cord x 1 A x 1 (GPR-6030D) R-1810HD/3060D)			
	CESSORIES			

Linear D.C. Power Supply



The GPS-Series is a single output, 54W to 90W, linear DC power supply. The GPS-Series has digital display meters with varying power outputs. The GPS-Series features overload and reverse polarity protection as well as high regulation and low ripple/noise that are maintained at 0.01% and < 1mVrms, respectively. Continuous or dynamic internal load selection accommodates applications such as pulsed current. Remote control terminals offer programming and operation from an external device.

GPS-1830D/1850D/3030D





GPS-3030DD



FEATURES

- * Light and Compact Design
- * 0.01% High Regulation
- * Constant Voltage and Constant Current Operation
- * Remote Control for External Programmability
- * Internal Select for Continuous or Dynamic Load
- * Low Ripple and Noise
- * Overload and Reverse Polarity Protection
- * Series or Parallel Operation
- * Optional European Type Jack Terminal for GPS-3030D/GPS-3030DD

European Type Jack Terminal



SPECIFICATIONS CONSTANT VOLTAGE O	DEPATION
Regulation	Line regulation ≤ 0.01% + 3mV Load regulation ≤ 0.01% + 3mV (rating current≤3A) ≤ 0.01% + 5mV (rating current > 3A)
Ripple & Noise	≤ 0.5mVrms 5Hz ~ 1MHz (rating current≤3A) ≤ 1mVrms 5Hz ~ 1MHz (rating current>3A)
Recovery Time Temp. Coefficient	≤ 100 µS (50% load change, minimum load 0.5A) ≤ 300 ppm /°C
Output Range	0 to rating voltage continuously adjustable
CONSTANT CURRENT C	PERATION
Regulation	Line regulation ≤0.2% + 3mA Load regulation ≤0.2% + 3mA
Ripple Current Output Range	≤3mArms 0 to rating current continuously adjustable (Hi/Lo range switchable)
METER	
Digital	3½ digits 0.5" LED display (GPS-1830D/1850D/3030D) 3½ digits 0.39" LED display (GPS-3030DD) Accuracy ± (0.5% of rdg + 2 digits)
INSULATION	
Chassis and Terminal Chassis and AC Cord	20M Ω or above (DC 500V) 30M Ω or above (DC 500V)
POWER SOURCE	
AC 100V/120V/220V/240V	′±10%, 50/60Hz
DIMENSIONS	
128(W) x 145(H) x 285(D)	mm

ORDERING INFORMATION								
	Model	Output Volts(V)	Output Amps(A)	Weight (kg)				
GPS-1830D	54W D.C. Power Supply	0 – 18	0 - 3	4				
GPS-1850D	90W D.C. Power Supply	0 – 18	0 - 5	5				
GPS-3030D	90W D.C. Power Supply	0 - 30	0 - 3	5				
GPS-3030DD	90W D.C. Power Supply	0 ~ 30	0 ~ 3	5				

ACCESSORIES:

User manual x 1, Power cord x 1

Test lead GTL-105A x 1 (\leq 3A) or GTL-104A x 1 (\leq 10A)

European test lead GTL-203A x 1 (≤ 3A)or GTL-204A x 1 (≤ 10A)

	NOTE		



AC POWER SOURCES

GW Instek AC Power Sources currently can be divided into three categories. Programmable AC/DC Power Source, Programmable AC Power Source, AC Power Source.

AC Power Source ASR-3000/ASR-2000 Series not only plays the role as a precision AC/DC power source but also a powerful analyzer. It contains abundant features for the testing and characteristic analysis of power supplies, electronic devices, components and modules.

The APS-7000 Series is programmable linear AC Power Source, with the height of 2U and output frequency range is 45~500Hz. The maximum rated output for APS-7050 is 500VA, 310Vrms, 4.2Arms and APS-7100 is 1000VA, 310Vrms, 8.4Arms. The APS-7000 Series comprises nine measurement and test functions and provides user interface similar to that of AC Power Meter.

PRODUCTS

- Programmable AC/DC Power Source
- Programmable AC Power Source
- AC Power Source

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AC POWER SOURCES

AC POWER SOURCES

Programmable Switching AC/DC Power Source

GW Instek not only provides compact and lightweight switching AC/DC power sources but also features AC, DC and AC+DC power outputs and the real time measurements of Vrms, Vavg, Vpeak, Irms, IpkH, Iavg, Ipeak, P, S, Q, PF, CF, 40 th-order Voltage Harmonic and Current Harmonic. Four signal sources are collocated as Internal (INT), External (EXT), Internal+ External (ADD), and External Synchronization (SYNC) to flexibly output power so as to meet customers' demands. The powerful sequence function is very suitable for producing arbitrary waveforms. 16 sets of arbitrary waveform storage space and 10 sets of panel setting memory space are provided for data storage and setting input.

Linear AC Power Source

GW Instek recommends linear AC power source for AC power with the requirements of high accuracy, high stability and low ripple/noise. Programmable AC Power Source APS-7000 is suitable for simulating AC power outputs and it has 9 measurement functions (Vrms, Irms, F, Ipk, W, VA, PF, Ipk hold, CF), 7 waveform modes, Sequence mode, Simulate mode, and Surge/Dip Control Mode etc. Purpose AC power source applications, non-programmable AC source APS-7000E Series, with high precision and THD of less than 0.5%, is the ideal selection.

2K~4KVA PROGRAMMABLE SWITCHING AC/DC POWER SOURCE

Model	Output Capacity	Output Freq.	Output Voltage	Max. Current	Display Type	Weight(kg)	Page
ASR-3200	2KVA	1~999.9Hz	AC 100V Range 0.0V~200.0V AC 200V Range 0.0V~400.0V DC 100V Range -285V~+285V DC 200V Range -570V~+570V	AC 100V Range 20A AC 200V Range 10A DC 100V Range 20A DC 200V Range 10A	LCD	25	
ASR-3300	3KVA	1~999.9Hz	AC 100V Range 0.0V~200.0V AC 200V Range 0.0V~400.0V DC 100V Range -285V~+285V DC 200V Range -570V~+570V	AC 100V Range 30A AC 200V Range 15A DC 100V Range 30A DC 200V Range 15A	LCD	25	B-11-70
ASR-3400	4KVA	1~999.9Hz	AC 100V Range 0.0V~200.0V AC 200V Range 0.0V~400.0V DC 100V Range -285V~+285V DC 200V Range -570V~+570V	AC 100V Range 40A AC 200V Range 20A DC 100V Range 40A DC 200V Range 20A	LCD	25	D73-78
ASR-3400HF	ASR-3400HF 4KVA 1~5000Hz		AC 100V Range 0.0V~200.0V AC 200V Range 0.0V~400.0V DC 100V Range -285V~+285V DC 200V Range -570V~+570V	AC 100V Range 40A AC 200V Range 20A DC 100V Range 40A DC 200V Range 20A	LCD	25	

PROGRAMMABLE SWITCHING AC/DC POWER SOURCE

Model	Output Capacity	Output Freq.	Output Voltage	Max. Current	Display Type	Weight(kg)	Page
ASR-2050/ ASR-2050R	500VA	1~999.9Hz	AC 100V Range 0.0V~175.0V AC 200V Range 0.0V~350.0V DC 100V Range -250.0V~+250.0V DC 200V Range -500.0V~+500.0V	AC 100V Range 5A AC 200V Range 2.5A DC 100V Range 5A DC 200V Range 2.5A	LCD	11.5 ASR-2000 Series 10.5 ASR-2000R Series	
ASR-2100/ ASR-2100R	1000VA	1~999.9Hz	AC 100V Range 0.0V~175.0V AC 200V Range 0.0V~350.0V DC 100V Range -250.0V~+250.0V DC 200V Range -500.0V~+500.0V	AC 100V Range 10A AC 200V Range 5A DC 100V Range 10A DC 200V Range 5A	LCD	11.5 ASR-2000 Series 10.5 ASR-2000R Series	D79-82

PROGRAMMABLE LINEAR AC POWER SOURCE

Model	Output Capacity	Output Freq.	Output Voltage	Max. Current	Display Type	Weight(kg)	Page
APS-7050	500 VA	45~500Hz Option: 45~999.9Hz	0~310V, 0~155V Option: 0~600V	2.1A, 4.2A	LCD	24	
APS-7100	1000 VA	45~500Hz Option: 45~999.9Hz	0~310V, 0~155V Option: 0~600V	4.2A, 8.4A	LCD	38	D83-86
APS-7200	2000 VA	45~500Hz Option: 45~999.9Hz	0~310V, 0~155V Option: 0~600V	8.4A, 16.8A	LCD	90	D03-00
APS-7300	3000 VA	45~500Hz Option: 45~999.9Hz	0~310V, 0~155V Option: 0~600V	12.6A, 25.2A	LCD	128	

LINEAR AC POWER SOURCE

Model	Output Capacity	Output Freq.	Output Voltage	Max. Current	Display Type	Weight(kg)	Page
APS-7050E	500 VA	45~500Hz	0~310V, 0~155V	2.1A, 4.2A	LCD	24	D07 00
APS-7100E	1K VA 45~500Hz		0~310V, 0~155V	4.2A, 8.4A	LCD	38	D87-88

30008



ASR-3000 Series



FEATURES

- * Output Rating: AC 0 400 Vrms, DC 0 ~ ± 570 V
- * Output Frequency up to 999.9 Hz
- (5kHz for ASR-3400HF only)
- * DC Output (100% of Rated Power) * Measurement Items: Vrms, Vavg, Vpeak,
- Irms, IpkH, Iavg, Ipeak, P, S, Q, PF, CF
- * Voltage and Current Harmonic Analysis
- (THDv, THDi) * Remote Sensing Capability
- * OCP, OPP, OTP, AC Fail Detection and Fan Fail Alarm
- * Support Arbitrary Waveform Function
- * Output Capacity: 2kVA/3kVA/4kVA
- * Customized Phase Angle for Output On/Off
- * Sequence and Simulation Function (up to 10 sets)
- * Interface(std): USB, LAN, RS-232, GPIB
- * Built-in External Control I/O and External
- Signal Input * Built-in Output Relay Control
- * Memory Function (up to 10 sets)
- * Built-in Web Server

The ASR-3000 Series is an AC+DC power source, featuring high-speed DC voltage rising and falling time (≤100us). There are four models of the series: ASR-3200(2kVA), ASR-3300(3kVA) and ASR-3400/3400HF (4kVA). The series can provide rated power output during AC output and DC output. Ten ASR-3000 Series output modes are available, including 1) AC power output mode (AC-INT Mode), 2) DC power output mode (DC-INT Mode), 3) AC/DC power output mode (AC+DC-INT Mode), 4) External AC signal source mode (AC-EXT Mode), 5) External AC/DC signal source mode (AC+DC-EXT Mode), 6) External AC signal superimposition mode (AC-ADD Mode), 7) External AC/DC signal superimposition mode (AC+DC-ADD Mode), 8) External AC signal synchronization mode (AC-SYNC Mode), 9) External AC/DC signal synchronization mode (AC+DC-SYNC Mode)10) External DC voltage control of AC output mode(AC-VCA).

ASR-3000 Series is ideal for the development of On-board Chargers, Server Powers, LED modules, AC Motors, AC Fans, UPS and various electronic components, as well as for testing applications of automotive electrical equipment and home appliances.

The ASR-3000 Series provides users with waveform output capabilities including 1) Sequence mode generates waveform fallings, surges, sags, changes and other abnormal power line conditions; 2) Arbitrary waveform function allows users to store/upload user-defined waveforms; and 3) Simulate mode simulates power outage, voltage rise, voltage fall, and frequency variations. When the ASR-3000 Series power source outputs, it can also measure Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 100th-order Voltage Harmonic and Current Harmonic. In addition, the remote sensing function ensures accurate voltage output, and the Customized Phase Angle for Output On/Off function can set the start and end angles of the voltage output according to the test requirements. The protection limits of V-Limit. Ipeak-Limit and F-Limit can be set according to user requirements. Over voltage limit. OCP. OPP will protect the DUT during the output process. The Fan Fail Alarm function and the AC fail alarm function are also designed in the ASR-3000 Series.

The front panel of the ASR-3000 Series provides a universal socket or a European socket, which allows users to plug and use so as to save wiring time. Since the power socket specification has a maximum current of 15A, the rear panel of ASR-3000 Series is designed with a current circuit breaker. When the socket current is greater than 15A, it will automatically open the circuit to protect users. The ASR-3000 Series supports I/O interface and is standardly equipped with USB, LAN, External I/O, RS-232C and CPIR

ASR-002 External three phase control unit



- * Basis Requirement of ASR-002 to ASR-Series
- 2. To ASR-2000 Series, the Opt01: RS-232+GPIB interface is requir * Functions of ASR-Series are limited when conducts to ASR-002

- No Sequence and Simulation Fur 7 Not supported External Control I/O
- 9. Only support USB, no LAN port for communication

GRA-442-J Rack Mount Adapter(JIS)



GRA-442-E Rack Mount Adapter(EIA)



GTL-137 Output power wire



APS-008 Air inlet filter

GET-006 Universal extension (AC signel phase 250V/13Amps)







GPW-005 Power cord

GPW-006 Power cord







		ASR-3200	ASR-3300	ASR-3400	ASR-3400HF
INPUT RATING (AC)		•			
NOMINAL INPUT VOLTAGE		200 Vac to 240 Vac			
INPUT VOLTAGE RANGE		180 Vac to 264 Vac			
PHASE		Single phase, Two-wire			
NOMINAL INPUT FREQUENCY		50 Hz to 60 Hz			
INPUT FREQUENCY RANGE		47 Hz to 63 Hz			
MAX. POWER CONSUMPTION	25	2500 VA or less	3750 VA or less	5000 VA or less	5000 VA or less
POWER FACTOR *1	200Vac	0.95 (TYP)			
MAX. INPUT CURRENT	200Vac	15 A	22.5 A	30 A	30 A
 For an output voltage of 100 V / 200 V (100V / 200V) 	range), maximum current, and a load por	ver factor of 1.		***************************************	
AC MODE OUTPUT RATINGS (AC rms)	E		040.403		
VOLTAGE	Setting Range	0.0 V to 200.0 V / 0.0 V to 400.0	0 V		
	Setting Resolution	0.1 V			
	Accuracy 12	±(1 % of set + 1 V / 2 V)			
OUTPUT PHASE		Single phase, Two-wire			
MAXIMUM CURRENT "	100 V	20 A	30 A	40 A	40 A
	200 V	10 A	15 A	20 A	20 A
MAXIMUM PEAK CURRENT	100 V	120 A	180 A	240 A	160 A
	200 V	60 A	90 A	120 A	80 A
LOAD POWER FACTOR		0 to 1 (leading phase or lagging	g phase)		
POWER CAPACITY	25 7	2000 VA	3000 VA	4000 VA	4000 VA
FREQUENCY	Setting Range	AC Mode: 40.0 Hz to 999.9 Hz	-		AC Mode: 40.0 Hz to 5000 Hz,
		AC+DC Mode: 1 Hz to 999.9 H	łz		AC+DC Mode: 1 Hz to 5000 Hz
	Setting Resolution	0.01 Hz (1.00 to 99.99 Hz),			0.01 Hz (1.00 to 99.99 Hz),
		0.1 Hz (100.0 to 999.9 Hz)			0.1 Hz (100.0 to 999.9 Hz)
					1 Hz (1000 to 5000 Hz)
	Accuracy	0.02% of set (23 °C ± 5 °C)			
	Stability 15	± 0.005%			
OUTPUT ON PHASE		0" to 359" variable (setting reso	olution 1")		
DC OFFSET		Within ± 20 mV (TYP)			<u> </u>
*1. 100 V / 200 V range. *2. For an output voltage of 20 V to 200 V / 40 V to 400 V *3. For an output voltage of 1 V to 100 V / 2 V to 200 V.					

- *4. With respect to the capacitor-input rectifying load. Limited by the maximum current.
- *5. For 45 Hz to 65 Hz, the nated output voltage, no load and the resistance load for the maximum current, and the operating temperature.
- *6. In the case of the AC mode and 23°C ± 5°C.

OUTPUT RATING FOR DC MODE								
VOLTAGE	Setting Range	-285 V to +285 V / -570 V to +570 V						
POSTERIOR	Setting Resolution	0.1 V						
	Accuracy *2	±(1 % of set + 1 V / 2 V)						
MAXIMUM CURRENT "	100 V	20 A	30 A	40 A	40 A			
	200 V	10 A	15 A	20 A	20 A			
MAXIMUM PEAK CURRENT 4	100 V	120 A	180 A	240 A	160 A			
0.00 p. 1 / 10 / 10 / 10 / 10 / 10 / 10 / 10 /	200 V	60 A	90 A	120 A	80 A			
POWER CAPACITY	POWER CAPACITY		3000 W	4000 W	4000 W			

- *1. 100 V / 200 V range.
- *2. For an output voltage of -285 V to -28.5 V, +28.5 V to +285 V / -570 V to -57 V, +57 V to +570 V, no load, and 23 °C ± 5°C.

 *3. For an output voltage of 1.4 V to 100 V / 2.8 V to 200 V. Limited by the power capacity when the output voltage is 100 V to 250 V / 200 V to 500 V. *4. Limited by the maximum current.
- OUTPUT VOLTAGE STABILITY

	LINE REGULATION "	0.2% or less			
	LOAD REGULATION TO	0.5% or less (0 to 100%, via output terminal)			
	RIPPLE NOISE 9	1 Vrms / 2 Vrms (TYP)			
- 8	97 0				

- *2. For an output voltage of 100 V to 200 V / 200 V to 400 V, a load power factor of 1, stepwise change from an output current of 0 A to maximum current (or its reverse), using the output terminal on the rear panel. *3. For 5 Hz to 1 MHz components in DC mode using the output terminal on the rear panel.

OUTPUT VOLTAGE WAVEFORM DISTORTION RATIO, OUTPUT VOLTAGE RESPONSE TIME, EFFICIENCY								
OUTPUT VOLTAGE RESPONSE TIME *2	100 µs (TYP)	A ELOYO BETOOTIE SOOTIE						
EEEICIENCY 9	80 % or more							

- *1. At an output voltage of 50 V to 200 V / 100 V to 400 V, a load power factor of 1, and in AC mode.
- *2. For an output voltage of 100 V / 200 V, a load power factor of 1, with respect to stepwise change from an output current of 0 A to the maximum current (or its revenue). 3. For AC mode, at an output voltage of 100 V / 200 V, maximum current, and load power factor of 1.

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MEA	SUR	ED	٧A	WE	DISP	LAY

VOLTAGE	RMS, AVG Value "	Resolution	0.1 V	1-801 - 1833 - 3 30 property (2007)				
A LOOP OF THE REAL PROPERTY.	2020.0000000000000000000000000000000000	Accuracy ¹²	For 45 Hz to 65 Hz and DC: ±(0.5 %	of reading + 0.5 V / 1 V)				
		and the state of t	For all other frequencies: ±(0.7 % of	reading + 1 V / 2 V)				
	PEAK Value	Resolution	0.1 V	12 - 12 - 12 - 12 - 12 - 12 - 12 - 12 -				
		Accuracy	For 45 Hz to 65 Hz and DC: ±(2 % o	of reading + 1 V / 2 V)				
CURRENT	RMS, AVG Value	Resolution	0.01 A	2 20 20 1022	s as			
V. C.	\$70 F.M. M. W.	Accuracy 19	For 45 Hz to 65 Hz and DC:	For 45 Hz to 65 Hz and DC:	For 45 Hz to 65 Hz and DC:			
		2.25.7.35	±(0.5 % of reading+0.1 A/0.05 A)	±(0.5 % of reading+0.15 A/0.08 A)	±(0.5 % of reading+0.2 A/0.1 A)			
		1	For all other frequencies:	For all other frequencies:	For all other frequencies:			
			±(0.7 % of reading+0.2 A/0.1 A)	±(0.7 % of reading+0.3 A/0.15 A)	±(0.7 % of reading+0.4 A/0.2 A)			
	PEAK Value	Resolution	0.1 A					
		Accuracy 4	For 45 Hz to 65 Hz and DC:	For 45 Hz to 65 Hz and DC:	For 45 Hz to 65 Hz and DC:			
	4		±(]2 % of reading + 0.5 A/0.25 A)	±(2 % of reading + 0.8 A/0.4 A)	±(2 % of reading + 1 A/0.5 A)			
POWER	Active (W)	Resolution	1 W					
	, and 1000	Accuracy 45	±(2 % of reading +2 W)	±(2 % of reading +3 W)	±(2 % of reading +4 W)			
	Apparent (VA)	Resolution	1 VA					
		Accuracy 444	±(2 % of reading +2 VA)	±(2 % of reading +3 VA)	±(2 % of reading +4 VA)			
	Reactive (VAR)	Resolution	1 VAR		N 1010 107 W 1010 1010 1010 1010 12			
		Accuracy apry	±(2 % of reading +2 VAR)	±(2 % of reading +3 VAR)	±(2 % of reading +4 VAR)			
LOAD POWER FACTO	OR .	Range	0.000 to 1.000		V 63 - 5030 A0			
**************************************		Resolution	0.001	0.001				
LOAD CREST FACTOR		Range	0.00 to 50.00	0.00 to 50.00				
		Resolution	0.01					
HARMONIC VOLTAGE		Range	Up to 100th order of the fundamenta	wave				
EFFECTIVE VALUE (RMS)		Full Scale Resolution	200 V / 400 V, 100%					
	PERCENT (%)		0.1 V, 0.1%					
(AC-INT and 50/60 Hz	z only)	Accuracy 4	Up to 20th: ±(0.2 % of reading + 0.5					
			20th to 100th: ±(0.3 % of reading +	0.5 V / 1 V)				





Rear Panel



ASR-3000 Series

			ASR-3200	ASR-3300	ASR-3400	ASR-3400HF		
HARMONIC CURREN		Range	Up to 100th order of the fundamen					
EFFECTIVE VALUE (RI	MS)	Full Scale	20 A / 10 A, 100%	30 A / 15 A, 100%	40 A / 20 A, 100%			
PERCENT (%)		Resolution	0.01 A, 0.1%	0.01 A, 0.1%				
(AC-INT and 50/60 Hz	AC-INT and 50/60 Hz only) Accuracy " Accuracy "		Up to 20th s(1 % of reading+0.4 A/0.2 A) 20th to 100th s(1.5 % of reading+0.4 A/0.2 A)	Up to 20th s(1 % of reading+0.6 A/0.3 A) 20th to 100th s(1.5 % of reading+0.6 A/0.3 A)	Up to 20th ±(1 % of reading+0.8 A/0.4 A) 20th to 100th ±(1.5 % of reading+0.8 A/0.4 A)	8		
13. An output current in the ran 14. An output current in the ran	itage of 20 V to 200 V / 40 V nge of 5 % to 100 % of the e nge of 5 % to 100 % of the e V or greater, an output cur powers are not displayed in e load with the power factor	Tis 400 V and 23 °C ± 5 °C. DC mo nasimum current, and 23 °C ± 5 °C nasimum peak current in AC mod- rent in the range of 10 % to 100 % the DC mode. •0.5 or liver.	ode: For an output voltage of 28.5 V to 285 V j 53 V to 5390 	eximum instantaneous current in DC mode, and 23 °C a	5 °C. The accuracy of the peak value is for a waveful	ore of DC or sine wave.		
OTHERS								
PROTECTIONS			UVP, OCP, OTP, OPP, Fan Fail					
DISPLAY			TFT-LCD, 4.3 inch					
MEMORY FUNCTION	1931 NO. 1733	16	Store and recall settings, Basic settings: 10 (0-9 numeric keys)					
ARBITRARY WAVE	Number of Mer	nories	16 (nonvolatile)					
	Waveform Length		4096 words					
INTERFACE	Standard	USB	Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC, USB-TMC					
		LAN	MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask					
		RS-232C	Complies with the EIA-RS-232 speci	fications				
		EXT Control	External Signal Input; External Cont	rol I/O				
	1	GPIB	SCPI-1993, IEEE 488.2 compliant in					
INSULATION RESISTA Between input and chassis			500 Vdc, 30 MΩ or more					
WITHSTAND VOLTAG		put and output	1500 Vac. 1 minute					
Between input and chassis		gut and output	1300 180, 1 0011300					
EMC			EN 61326-1, EN 61326-2-1, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12					
			EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11/-4-34, EN 55011 (Class A), EN 55032					
SAFETY			EN 61010-1					
ENVIRONMENT	Operating Envir		Indoor use, Overvoltage Category II	Indoor use, Overvoltage Category II				
	Operating Tem	perature Range	0 °C to 40 °C	0 °C to 40 °C				
	Storage Temper		-10 °C to 70 °C	-10 °C to 70 °C				
	Operating Hurr		20 % to 80 % RH (no condensation	9)				
	Storage Humid	ity Range	90 % RH or less (no condensation)					
	Altitude		Up to 2000 m	Lio to 2000 m				
DIMENSIONS & WES	· WT		430000-33 (Gib. 43000) and feet industry executions from 31 in					

	ORDERING INFORMATION
ASR-3200	2kVA Programmable AC/DC Power Source

3kVA Programmable AC/DC Power Source ASR-3300 ASR-3400 4kVA Programmable AC/DC Power Source ASR-3400HF 4kVA Programmable AC/DC Power Source

ACCESSORIES :

CD (User manual/Programming manual), Safety guide, Input Terminal Cover, Output terminal cover include remote sensing,

GRA-442-E Rack mount adapter(EIA), GTL-246 USB Cable **OPTIONAL ACCESSORIES**

GPW-005 Power cord, 3m, 105°C, UL/CSA type GPW-006 Power cord, 3m, 105°C, VDE type

GPW-007 Power cord, 3m, 105°C, PSE type GRA-442-J Rack mount adapter (JIS) GRA-442-E Rack mount adapter(EIA)

GTL-137 Output power wire(load wire_10AWG:50A,

600V/sense wire_16AWG:20A, 600V)

GTL-232 RS232C Cable, approx. 2m GTL-248 GPIB Cable, approx. 2m

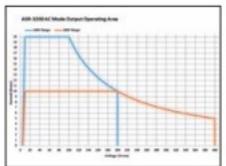
ASR-002 External three phase control unit for IP2W, IP3W, 3P4W output

APS-008 Air inlet filter GET-006 Universal Extension

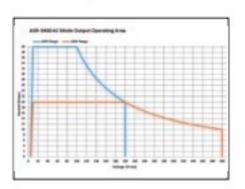
* European output outlet (factory installed)



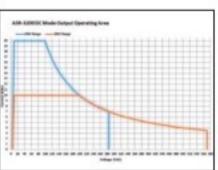
A. OPERATING AREA FOR ASR-3000 SERIES



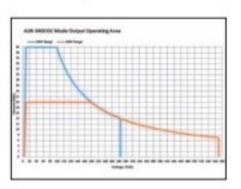
AC Output for ASR-3200 D



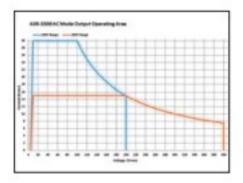
AC Output for ASR-3400



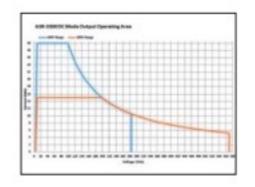
DC Output for ASR-3200



DC Output for ASR-3400



AC Output for ASR-3300



DC Output for ASR-3300

Model Name	Power Rating	Max. Output Current	Max. Output Voltage
ASR-3200	2k VA	20 / 10 A	400 Vrms / ±570 Vdc
ASR-3300	3k VA	30 / 15 A	400 Vrms / ±570 Vdc
ASR-3400	4k VA	40 / 20 A	400 Vrms / ±570 Vdc

The ASR-3000 series is an AC + DC power source that provides not only rated power output for AC output, but also rated power output for DC output.

MEASUREMENT ITEMS FOR ASR-3000 SERIES



RMS Meas Display

The ASR-3000 Series provides users with measurement

capabilities including Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 100th-order Voltage Harmonic and

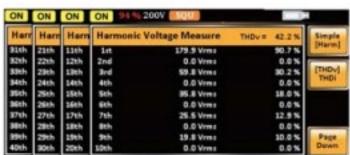
Current Harmonic. During the power output, the measurement



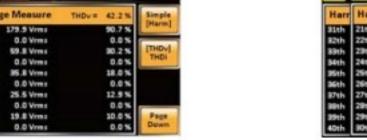
AVG Meas Display



Peak Meas Display



Voltage Harmonic



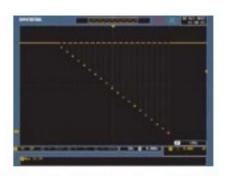
parameters including Vrms/Irms, Vavg/Iavg and Vmax/Vmin/Imax/ Imin can be switched by users at any time to display the instantaneous calculation reading.

Current Harmonic

SEQUENCE MODE AND BUILT-IN ISO-16750-2 WAVEFORMS

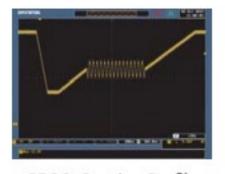


SEQ6: Momentary Drop in Supply Voltage

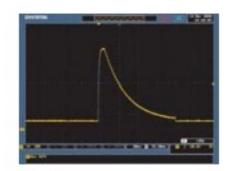


SEQ7: Reset Behavior at Voltage Drop with 12V System

The sequence mode provides editable 10 sets of SEQ0~SEQ9, each set has 0~999 steps, each step time setting range is 0.0001~999.9999 seconds. Users can combine multiple sets of steps to generate the required waveforms, including waveform falling, surges, sags and other abnormal power line conditions to meet the needs of the test applications.



SEQ8: Starting Profile Waveform

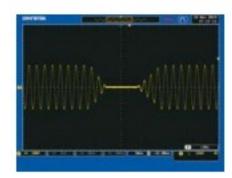


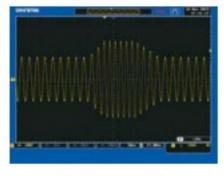
SEQ9: Load Dump with Tr_10ms, Td_40ms

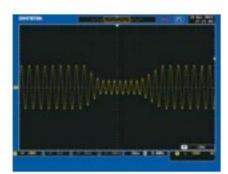
In addition, ASR-3000 Series also built in common ISO-16750-2 test waveforms in the Sequence Mode preset waveforms, including Momentary Drop in Supply Voltage built in at SEQ6, Reset Behavior at Voltage Drop with 12V system built in at SEQ7, Starting Profile Waveform built in at SEQ8 and Load Dump with Tr_10ms, and Td_40ms built in at SEQ9.

Programmable AC/DC Power Source

D. SIMULATE MODE







Power Outage

Voltage Rise

Voltage Fall

Simulate Mode can quickly simulate different transient waveforms, such as power outage, voltage rise, voltage fall, etc., for engineers to evaluate the impact of transient phenomena on the DUT. Ex: Capacitance durability test.

E. FUNCTION WAVEFORM (ARBITRARY EDIT) MODE



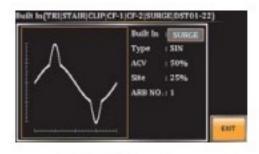




TRI Waveform

STAIR Waveform

CLIP Waveform





SURGE Waveform

Fourier Series Synthesized Waveform

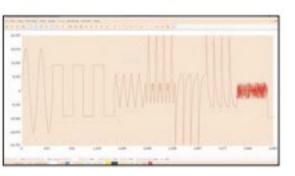
ASR-3000 Series provides more than 20,000 waveform combinations in seven categories, allowing users to quickly simulate different AC voltage waveforms. Adjust the desired waveform type directly through the panel (displayed synchronously on the screen),

then the waveform is loaded into the ARB 1~16 waveform register through the access procedures, and return to the main menu output mode to perform ARB Waveform output.

F. PC SOFTWARE









Basic Controller

Sequence Mode

ARB Waveform Edit

The Waveform is Observed with DSO

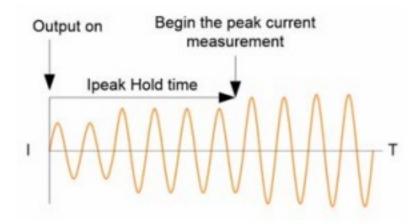
The ASR-3000 Series software includes basic settings, the Simulate Mode, the Sequence Mode, Data Log and the arbitrary waveform editing function. Users can directly set output voltage, frequency, start/stop phase on ASR-3000 Series through the software.

The Simulate Mode can quickly simulate different transient waveforms such as power outage, voltage rise, voltage fall... etc.

The Sequence Mode can edit the editing parameters read back from ASR-3000 Series, or directly edit the parameters and control ASR-3000 Series to output waveforms according to the set sequence.

The arbitrary waveform editing function not only combines various waveforms, including sine waves, square waves, triangle waves, and noise waveforms, but also allows uses to draw arbitrary waveforms and output them.

T, IPK HOLD & IPK, HOLD FUNCTIONS

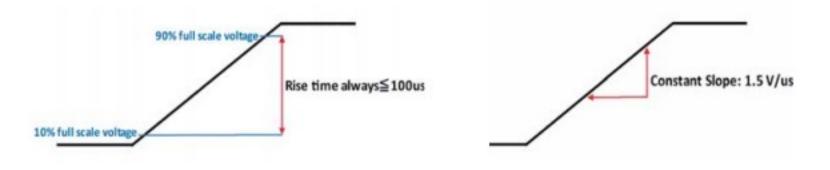


T, Ipk Measurement

T, Ipk Hold is used to set the delay time after the output (1ms ~ 60,000ms) to capture the Ipeak value and keep the maximum value. The update only functions when the measurement value is greater than the original value. The T, Ipk Hold delay time setting can be used to measure surge current at the power on process of the DUT.

Ipk Hold can be used to measure the transient surge current of the DUT at power on without using an oscilloscope and a current probe.

SLEW RATE MODE



Time Mode

The ASR-3000 Series can set the Slew Rate Mode to determine the rise time of the voltage according to the test requirements of the DUT. Slew Rate Mode provides "Time" and "Slope" modes. When setting "Time" mode, ASR-3000 Series can increase output to 10~90% of the set voltage within 100µs; and when selecting "Slope" mode, ASR-3000 Series increases output voltage by a fixed rising slope of 1.5V/ μ s until reaching the set voltage value.

Slope Mode

In addition, if users decide to self-define the rise time of the output voltage, users can flexibly set the rise time of the ASR-3000 Series voltage by editing the Sequence mode.

2000 Series

Compact Programmable A.C./D.C. Power Source



ASR-2050/2100 Series



ASR-2050R/2100R Series

		٠.,.			
(€	RS-232	GPIB	USB	LAN	Ext I/O

FFATURES

- " Output Rating: AC 0 ~ 350 Vrms, DC 0 ~ ± 500 V
- * Output Frequency up to 999.9 Hz
- * DC Output (100% of Rated Power)
- * Output Capacity: 500VA/1000VA
- * Measurement Items: Vrms, Vavg, Vpeak, Irms, IpkH, lavg, Ipeak, P, S, Q, PF, CF
- * Voltage and Current Harmonic Analysis (THDv, THDi)
- * Customized Phase Angle for Output On/Off
- * Remote Sensing Capability
- * OVP. OCP. OPP. OTP. AC Fail Detection and
- * Interface: USB.LAN.RS-232(std.); GPIB(opt.) * Built-in External Control I/O and External
- Signal Input
- * Built-in Output Relay Control
- * Memory Function (up to 10 sets)
- * Sequence and Simulation Function
- (up to 10 sets)
- * Support Arbitrary Waveform Function
- * Built-in Web Server
 - GET-003 Universal Extended Terminal Box

GET-004 Euro Extended Terminal Box



GET-006 Universal extension (AC signel phase 250V/13Amps)



The ASR-2000 series, an AC+DC power source aiming for system integration or desktop applications, provides both rated power output for AC output and rated power output for DC output. Ten ASR-2000 output mode (aC-INT Mode), 2) DC power output mode (AC-INT Mode), 2) DC power output mode (DC-INT Mode), 3) AC/DC power. output mode (AC+DC-INT Mode), 4) External AC signal source mode (AC-EXT Mode), 5) External AC/DC signal source mode (AC+DC-EXT Mode), 6) External AC signal superimposition mode (AC-ADD Mode), 7) External AC/DC signal superimposition mode (AC+DC-ADD Mode), 8) External AC signal synchronization mode (AC-SYNC Mode), 9) External AC/DC signal synchronization mode (AC+DC-SYNC Mode), 10) External DC voltage control of AC output mode(AC-

The ASR-2000 series provides users with waveform output capabilities to meet the test requirements of different

electronic component development, automotive electrical devices and home appliance, including 1) Sequence mode generates waveform fallings, surges, sags, changes and other abnormal power line conditions; 2) Arbitrary waveform function allows users to store/upload user-defined waveforms; and 3) Simulate mode simulates power outage, voltage rise, voltage fall, and frequency variations. When the ASR-2000 series power source outputs, it can also measure Vrms. Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 100th-order Voltage Harmonic and Current Harmonic. In addition, vavg, Vpeak, Irms, ravg, rpeak, rpkm, P, S, Q, Fr, Cr, roomboder romage rammone and control of the Remote sense function ensures accurate voltage output. The Customized Phase Angle for Output On/Off function the Kemote sense function ensures accurate voltage output. The customized Phase Angle for Output On/Off function can set the starting angle and ending angle of the voltage output according to the test requirements. V-Limit, Ipeak-OTP. OCP, and OPP protection, the ASR-2000 series also incorporates the Fan fail alarm function and AC fail alarm

The front panel of the ASR-2050/2100 provides a universal socket or a European socket, which allows users to plug and use so as to save wiring time. The ASR-2050R/2100R is 3U height and 1/2 Rack width design, which is compatib ATS assembly. The ASR-2000 series supports I/O interface and is equipped with USB, LAN, PS-232C External I/O and optional GPIB.

SPECIFICATIONS				
	ASR-2050/ASR-2050R	ASR-2100/ASR-2100R		
INPUT RATING (AC)				
NOMINAL INPUT VOLTAGE INPUT VOLTAGE RANGE PHASE INPUT FREQUENCY RANGE MAX. POWER CONSUMPTION POWER FACTOR' 200Vac MAX. INPUT CURRENT 100Vac	100 Vac to 240 Vac 90 Vac to 264 Vac 90 Vac to 264 Vac 1 lingle phase, Two-wire 47 lit to 63 lit 800 VA or less 0.95 (typ.) 0.90 (typ.) 8 A 4 A	100 Vac to 240 Vac 90 Vac to 264 Vac Single phase, Two-wire 47 Hz to 63 Hz 1500 VA or less 0.95 (typ.) 0.90 (typ.) 15 A		
200Vac *1. For an output voltage of 100 V/200 V (100V/200V ra		7.5 A or of 1.		

MAX. INPUT CURRENT	100Vac 200Vac	4 A	15 A 7.5 A
*1. For an output voltage of 100 V	/200 V (100V/200V rang	e), maximum current, and a l	oad power factor of 1.
AC MODE OUTPUT RATING	S (AC rms)		
VOLTAGE OUTPUT PHASE	Setting Range ¹ Setting Resolution Accuracy ²	0.0 V to 175.0 V / 0.0 V 0.1 V ±(0.5 % of set + 0.6 V / Single phase, Two-wire	
MAXIMUM CURRENT'	100 V 200 V	5 A 2.5 A	10 A 5 A
MAXIMUM PEAK CURRENT"	100 V 200 V	20 A 10 A	40 A 20 A
POWER CAPACITY		500 VA	1000 VA
REQUENCY Setting Range Setting Resolution Accuracy Stability* DUTPUT ON PHASE COFFSET*		AC Mode: 40.00 Hz to 999.9 Hz, 14.0C=0C Mode: 1.00 Hz to 999.9 Hz 1.03 Hz (1.00 to 999.9 Hz), 0.1 Hz (100 to 199.9 Hz) For 45 Hz to 65 Hz: 0.01% of set, For 40 Hz to 999.9 Hz: 0.02% of set 2.005% 0.0° to 339.9° variable (setting resolution 0.1°) Within a 20 mV (TFP)	

- 11 DOV 200 V raise; and 13.5 to 13.5 t
- OUTPUT RATING FOR DC MODE

VOITAGE -250 V to +250 V / -500 V to +500 V

MAXIMUM CURRENT'	100 V	5 A	10 A	
	200 V	2.5 A	5 A	
MAXIMUM PEAK CURRENT"	100 V	20 A	40 A	
	200 V	10 A	20 A	
POWER CAPACITY		500 W	1000 W	

PIPPLE NOISE

OUTPUT VOLTAGE RESPONSE TIME

DEAK Value

*1. 100 V J 200 V range.
*2. For an output voltage of -250 V to -25 V, +25 V to +250 V / -500 V to -50 V, +50 V to +500 V, no load, AC voltage setting 0V (AC+DC mode) and 23°C ± 5°C
*3. For an output voltage of 1.4 V to 100 V J 2.8 V to 200 V, Limited by the power capacity when the output voltage is 100 V to 350 V J 260 V to 500 V.

OUTPUT VOLTAGE STABILITY LINE REGULATION LOAD REGULATION ±0.15%@45-65Hz;±0.5%@DC,all other frequencies(0-100%, via output termin

0.7 Vrms / 1.4 Vrms (TYP)

OUTPUT VOLTAGE WAVEFORM DISTORTION RATIO, OUTPUT VOLTAGE RESPONSE TIME, EFFICIENCY TOTAL HARMONIC DISTORTION(THD) $\leq 0.2\% \otimes 50/60 Hz, \leq 0.3\% \otimes <500 Hz, \leq 0.5\% \otimes 500.1 Hz \sim 999.9 Hz$ 100 $\,\mu s$ (TYP)

Perclution

MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value U.1 V For 45 Hz to 65 Hz and DC: ±(0.5 % of reading + 0.3 V/0.6 V)For 40 Hz to Accuracy 999.9 Hz: ±(0.7 % of reading + 0.9 V/1.8 V)

Accuracy For 45 Hz to 65 Hz and DC: ±(|2 % of reading| + 1 V / 2 V) CURRENT PMS AVC Value 0.01 A For 45 Hz to 65 Hz and DC For 45 Hz to 65 Hz and DC: ±(0.5 % of reading+0.02 A/0.02 A); For 40 Hz to 999.9 Hz:

π(0.5 % of reading+0.04 A/0.02 A); For 40 Hz to 999.9 Hz: ±(0.7 % of reading + 0.04 A / 0.04 A) ±(0.7 % of reading + 0.08 A / 0.04 A)



ASR-2000 Series ASR-2050/ASR-2050R

	PEAK Value	Resolution Accuracy ^{**}	0.01 A For 45 Hz to 65 Hz and DC: ±(2 % of reading +0.2 A/0.1 A)	0.01 A For 45 Hz to 65 Hz and DC: ±(2 % of reading +0.2 A/0.1 A)
POWER	Active (W)	Resolution Accuracy ¹	0.1 / 1 W ±(2 % of reading + 0.5 W)	0.1 / 1 W s(2 % of reading + 1 W)
	Apparent (VA)	Resolution	0.1 / 1 VA	0.1 / 1 VA
	Reactive (VAR)	Accuracy *** Resolution	±(2 % of reading + 0.5 VA) 0.1 / 1 VAR	±(2 % of reading + 1 VA) 0.1 / 1 VAR
		Accuracy "	±(2 % of reading + 0.5 VAR)	n(2 % of reading + 1 VAR)
LOAD PO	WER FACTOR	Range Resolution	0.000 to 1.000 0.001	0.000 to 1.000 0.001
LOAD CR	EST FACTOR	Range Resolution	0.00 to 50.00 0.01	0.00 to 50.00 0.01
HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%)		Range Full Scale Resolution	Up to 100th order of the fundamental wave 175 V / 350 V, 10096 0.1 V, 0.196	Up to 100th order of the fundamental wave 175 V / 350 V, 10096 0.1 V, 0.196
(AC-INT and	1 50/60 Hz only)	Accuracy"	Up to 20th±(0.2% of reading + 0.5V/1V); 20th to 100th±(0.3% of reading + 0.5V/1V)	Up to 20th±(0.2% of reading + 0.5V/1V); 20th to 100th±(0.3% of reading + 0.5V/1V)
HARMON	IIC CURRENT	Range	Up to 100th order of the fundamental wave	Up to 100th order of the fundamental wave
EFFECTIV	E VALUE (RMS)	Full Scale	5 A / 2.5 A, 100%	10 A / 5 A, 100%
PERCENT (AC-INT and	(%) I 50/60 Hz only)	Resolution Accuracy ¹³	0.01 A, 0.1% Up to 20th±(1% of reading + 0.1A/0.05 A); 20th to 100th±(1.5% of reading + 0.1A/0.05A)	0.01 A, 0.1% Up to 20th±(1% of reading + 0.2A/0.1A); 20th to 100th±(1.5% of reading + 0.2A/0.1A)
*2. AC mode *3. An outpo *4. An outpo instantar *5. For an out *6. The appo	at current in the range of at current in the range of neous current in DC mo tput voltage of SOV or gro arent and reactive power	of 17.5V to 175V/35V 6 5 % to 100 % of the 6 5 % to 100 % of the de, and 23 "C ± 5 "C. 1 ter, an output current in are not displayed in	and AVG is DC mode. 10 350V and 23 °C.25 °C. DC mode-for an output volt and 23 °C.2.5 °C. DC mode-for an output volt and 23 °C.2.5 °C. as output current and 23 °C.2.5 °C. as output current he accuracy of the peak value is for a waveform of the accuracy of the peak value is for a waveform of the teamp of 10 °C is 100 °C of the reasonant current DC of the DC mode. 9.7. The reactive power is for the load in 350 V and 25 °C.2.5 °C.	t in the range of 5 % to 100 % of the maximum C or sine wave. r an output frequency of 45Hz to 65Hz, and 23 °C+5 °C.

stage in the range of 17.5 V to 175 V/35 V to 350 V and 23 Y OTHERS

PROTECTIONS DISPLAY MEMORY FUNCTION ARBITRARY WAVE Number of Memories Waveform Length in LISR

INTERFACE LAN RS-232C FXT Control

Optional GPIB INSULATION RESISTANCE WITHSTAND VOLTAGE

Operating Environment Operating Temperature Range Storage Temperature Range Operating Humidity Range Storage Humidity Range

DIMENSIONS & WEIGHT

OCP. OTP. OPP. FAN Fail TFT-LCD, 4.3 inch 10 sets for Store and Recall settings 16 (nonvolatile) 4096 words

Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC MAC Address, DNS IP Address, User Password, Gateway IP Address,

Instrument IP Address, Subnet Mask Complies with the EIA-RS-232 specifications External Signal Innut: External Control I/O SCPI-1993. IEEE 488.2 compliant interface 500 Vdc. 30 MO or more

1500 Vac, 1 minute EN 61326-1 (Class A):EN 61326-2-1/-2-2 (Class A):EN 61000-3-2 (Class A.

Group 1);EN 61000-3-3 (Class A, Group 1);EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/ -4-8/-4-11 (Class A, Group 1);EN 55011 (Class A, Group1);EN 61010-1 Indoor use, Overvoltage Category II 0 °C to 40 °C

-10 °C to 70 °C 20 % RH to 80 % RH (no condensation) 90 % RH or less (no condensation)

Up to 2000 m ASR-2000: 285(W)×124(H)×480(D) (not including protrusions); Approx. 11.5 kg ASR-2000R: 213(W)×124(H)×480(D) (not including protrusions); Approx. 10.5 kg

ASR-2050 500VA Programmable AC/DC Power Source

ASR-2100 1000VA Programmable AC/DC Power Source
ASR-2050R 500VA Programmable AC/DC Power Source for 3U 1/2 Rack Mount
ASR-2100R 1000VA Programmable AC/DC Power Source for 3U 1/2 Rack Mount

ACCESSORIES CD ROM(User Manu II). Safety Guide, Power Cord, Mains Terminal Cover Set, Remote Sense DROM(User Manual, Programming manual), Safety Guid rminal Cover Set, GTL-123 Test Lead, GTL-246 USB Cable OPTIONAL ACCESSORIES

ASR-GPIB-2K Optional GPIB Interface for ASR-2000 (Factory installed) ASR-EU-2K European Output Outlet only for ASR-2000 (Factory installed)
GET-003 Extended Universal Power Socket(ASR-2000R only)
GTL-232 RS-232C Cable. approx GET-004 Extended European Power Socket (ASR-2000R only)

ASR-001 Air inlet filter
ASR-002 External three phase control unit for IP2W, IP3W, 3P4W output
GET-006 FREE DOWNLOAD

GRA-439-E Rack Mount Kit (EIA) GTL-258

RS-232C Cable, approx. 2M GPIB Cable, approx. 2M, including 25 pins Micro-D connector Universal Extension

ASR-2050/2100 Rear Panel



ASR-2050R/2100R Rear Panel



GRA-439-I/E Rack Mount Kit(IIS/EIA)

For : ASR-2000 Series

ASR-2100/ASR-2100R



GTL-258 GPIB Cable, 2000mm



ASR-001 Air Inlet Filter



ASR-002 External three phase control unit

Basis Requirement of ASP 002 to ASP Series 1 Must be the three same models of ASP Seri

 Must be the three same modes of ASR-Series
 To ASR-2000 Series, the ASR-GPIB-2K: GPIB interface is required * Functions of ASR-Series are limited when conducts to ASR-002

1. No DC Output 2. Measurement Items: only current/A), power/Wland PF for each phase

No Voltage and Current Harmonic Analysis

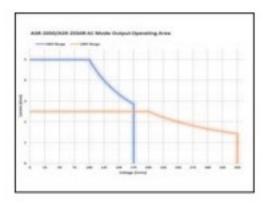
4. No Remote Sensing Canability

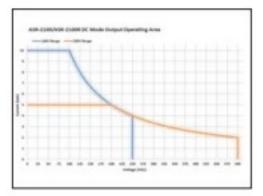
9. Only support USB, no LAN port for communication



Compact Programmable A.C./D.C. Power Source

OPERATING AREA FOR ASR-2000 SERIES





AC Output for ASR-2050/ASR-2050R

DC Output for ASR-2050/ASR-2050R

AC Output for ASR-2100/ASR-2100R

DC Output for ASR-2100/ASR-2100R

The ASR-2000 series is an AC+DC power source that provides rated power output not only at the AC output, but also at the DC output. The operation areas are shown in diagrams.

Model Name	Power Rating	Max. Output Current	Max. Output Voltage
ASR-2050	500 VA	5 / 2.5 A	350 Vrms / 500 Vdc
ASR-2100	1000 VA	10 / 5 A	350 Vrms / 500 Vdc
ASR-2050R	500 VA	5 / 2.5 A	350 Vrms / 500 Vdc
ASR-2100R	1000 VA	10 / 5 A	350 Vrms / 500 Vdc

MEASUREMENT ITEMS FOR ASR-2000 SERIES



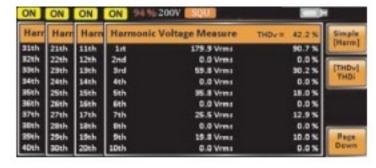


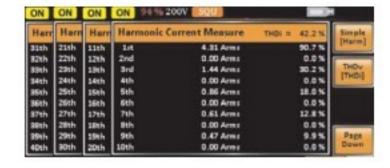


RMS Meas Display

AVG Meas Display

Peak Meas Display





Current Harmonic

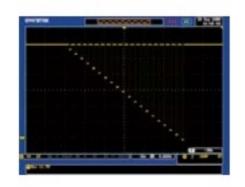
Voltage Harmonic

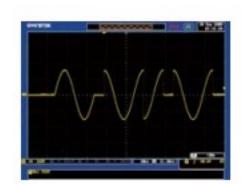
parameters including Vrms/Irms, Vavg/Iavg and Vmax/Vmin/ Imax/Imin can be switched by users at any time to display the instantaneous calculation reading.

The ASR-2000 series provides users with measurement capabilities including Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 40th-order Voltage Harmonic and Current Harmonic. During the power output, the measurement

SEQUENCE MODE AND APPLICATIONS







Momentary Drop in Supply Voltage

Reset Behavior at Voltage Drop

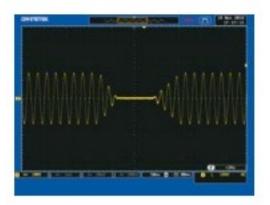
Starting Profile Waveform

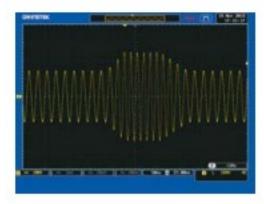
Instantaneous Power Failure

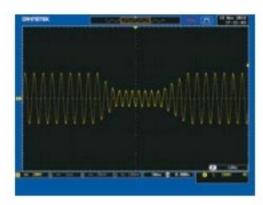
There are 10 sets of Sequence mode and each set has 0~999 steps. The time setting range of each step is 0.0001 ~ 999.9999 seconds. Users can combine multiple sets of steps to generate

the desired waveforms, including waveform fallings, surges, sags, changes and other abnormal power line conditions to meet the needs of the test application.

D. SIMULATE MODE







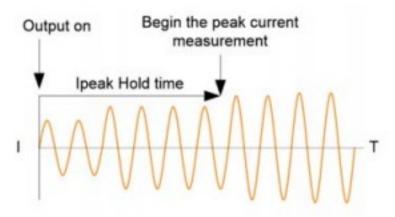
Power Outage

Voltage Rise

Voltage Fall

Simulate Mode can quickly simulate different transient waveforms, such as power outage, voltage rise, voltage fall, etc., for engineers to evaluate the impact of transient phenomena on the DUT. Ex: Capacitance durability test.

T, IPK HOLD & IPK, HOLD FUNCTIONS



T, Ipk Measurement

T, Ipk Hold is used to set the delay time after the output (1ms ~ 60,000ms) to capture the Ipeak value and keep the maximum value. The update only functions when the measurement value is greater than the original value. The T, Ipk Hold delay time setting can be used to measure surge current at the power on process of the DUT.

Ipk Hold can be used to measure the transient surge current of the DUT at power on without using an oscilloscope and a current probe.

F. SLEW RATE MODE 90% full scale voltage Rise time always≦100us Constant Slope: 1.5 V/us

Slope Mode

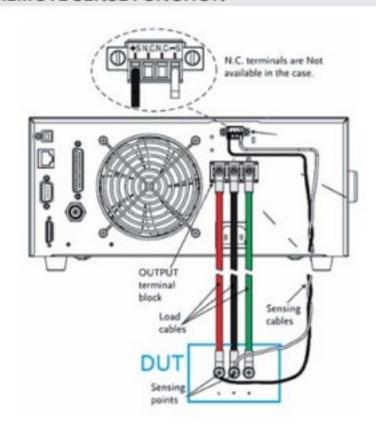
Time Mode

The ASR-2000 series can set the Slew Rate Mode to determine the rise time of the voltage according to the test requirements of the DUT. Slew Rate Mode provides "Time" and "Slope" modes. When setting "Time" mode, ASR-2000 can increase output to $10{\sim}90\%$ of the set voltage within $100\mu s$; and when selecting "Slope" mode, ASR-2000 increases output voltage by a fixed rising slope of

In addition, if users decide to self-define the rise time of the output voltage, users can flexibly set the rise time of the ASR-2000 series voltage by editing the Sequence mode.

1.5V/µs until reaching the set voltage value.

G. REMOTE SENSE FUNCTION



For high current output applications, the voltage drop caused by large current passing through the load cables will affect the measurement results. The ASR-2000 series provides the remote sense function that can sense the voltage drop of the DUT to the ASR-2000 series and the DUT will be compensated by the ASR-2000 series. The maximum voltage that the remote sense function can compensate is 5% of the output voltage.

500/1000/2000/3000 VA Programmable Linear AC Power Source



APS-7050



APS-7100



FEATURES

- * 4.3-inch TFT-LCD
- Output Capacity: APS-7050(500VA,310Vrms,4.2Arms); APS-7100(1000VA,310Vrms,8.4Arms); APS-7200(2000VA, 310Vrms, 16.8Arms); APS-7300(3000VA, 310Vrms, 25.2Arms) Output Augmentation by Options(0-600Vrms/45-999.9Hz)
- * Low Ripple & Noise
- * Measurement and Test Functions Include VOLT, CURR, PWR, SVA, IPK, IPKH, FREQ, PF, CF
- * Support a Small AC Current Measurement 2mA ~35A, Min. Rresolution 0.01mA(APS-7050&APS-7100)
- * Reverse Current Alarm Function
- * 10 sets of Sequence Function to Edit Output Waveforms/10 sets of Simulate Mode to Rapidly Simulate Transient Power Supply/10 sets of Program Mode to Define Measurement Sequence/10 sets of Panel Memory Function
- * Automatic Execution of Sequence, Simulate, Program mode and Output Function when the Power is on
- * Standard Interfaces: USB Host, USB Device, LAN
- * Optional Interfaces:GPIB(APS-001);RS-232/USB CDC(APS-002 for APS-7050&APS-7100 only) RS-232 (APS-007 for APS-7200& APS-7300 only)

APS-001/APS-002 Interface Card



APS-003

APS-004

Output Voltage Capacity

Output Frequency Capacity



APS-007 RS-232 Interface Card

For: APS-7200 Series, APS-7300 Series



GWInstek introduces APS-7000 series programmable AC power sources, which consists of 500VA of APS-7050, 1000VA of APS-7100, 2000VA of APS-7200 and 3000VA of APS-7300. APS-7000 series features power characteristics from its linear structure design including low noise, low THD, and highly stabilized power output that are ideal for the product development and verification of input power with low noise requirement or stereo, video and audio device applications, etc. The maximum rated voltage is 0- 310Vrms, 25.2Arms, 100.8A peak current and the output frequency range is 45-500.0Hz. Users can conveniently augment the output voltage from 0Vrms to 600Vrms and output frequency from 45Hz to 999.9Hz by purchasing options without sending equipment back to GW Instek.

One of the popular alternative energy solutions in the market is to utilize inverter to convert DC to AC and the converted AC is then sent to power grid or products require electricity. For instance, AC produced by PV inverter is sent to power grid or equipment requires electricity. While simulating power grid to verify inverter connecting with power grid, general AC power sources cannot withstand DUT's feedback energy, hence, additional power consumption resistors are needed to prevent AC power source from being damaged. On the contrary, APS-7000 series has the characteristic of absorbing reverse current so that additional power consumption resistors are not required. The input terminal of APS-7000 series is designed to isolate from the simulated AC power grid output terminal, therefore, users do not need an additional isolation device to protect DUT. APS-7000 series is suitable for simulating power grid and conducting inverter output characteristic tests, including synchronized phase and frequency. Reverse current and power detected by APS-7000 series will be displayed in red readings to facilitate user's test observation. APS-7000 series utilizes Simulate mode and Sequence mode to provide a single step or consecutive power changes; and to simulate power grid's Voltage Abnormality Test and Frequency Abnormality Test.

APS-7000 series comprises nine measurement and test functions (Vrms, Irms, F, Ipk, W, VA, PF, Ipk hold, CF), and provides user interface similar to that of AC Power Meter. APS-7000 series is ideal for the LED industry and standby mode power consumption test. Under the ARB mode, APS-7000 series provides waveforms in seven categories including Sine waveform, Triangle waveform, Staircase waveform (Square wave), Clipped Sinewave, Crest factor waveform, Surge waveform, and Fourier series and 20,000 waveform combinations so as to meet the requirements of simulating abnormal input power waveform test of various industries. Ten Preset settings allow users to store ten sets of data; Power ON Output setting allows Sequence, Simulate, and Program to automatically execute output after the equipment power is on.

To meet the test criteria of line voltage fluctuation often seen in consumer electronics, APS-7000 series features five methods to cope with special purpose or abnormal voltage, frequency, and phase; ten sets of the Simulate mode simulate power outage, voltage rise, and voltage fall; ten sets of the Sequence mode allow users to define parameters and produce sine wave by editing steps; ten sets of the Program mode can edit AC waveform output and define the ceiling and floor level of measurement items for different DUTs; Ramp Control allows users to set the variation speed for output voltage rise and fall; Surge/Dip Control simulates DUT's input power producing a Surge or Dip voltage overlapping with output voltage waveform at a specific time. For larger current output applications, voltage drop across the output cables should be avoided. APS-7200/7300 also provide the remote sense function, which senses DUT's voltage and sends the information back to APS-7200/7300 for program controlled voltage compensation. Therefore, APS-7200/7300 can avoid the voltage drop of the cable to affect output voltage.

Ethernet Port, on the rear panel, can be used for remote program control; Sync Output Socket provides external 10V sync output; Signal Output Connector provides monitor of Program execution results. APS-7000 series also provides users with Trigger In/Out and Output on/off remote control functions from J1 connector on the rear panel.

Model		APS-7050	APS-7100	APS-7200	APS-7300
AC OUTPUT					
Power Rating		500VA	1000VA	2000VA	3000VA
Output Voltage		0 – 155Vrms, 0 – 310Vrms	0 – 155Vrms, 0 – 310Vrms	0 – 155Vrms, 0 – 310Vrms	0 – 155Vrms, 0 – 310Vrms
Output Frequency Maximum	0.3551/	45.00 - 500.0 Hz	45.00 - 500.0 Hz	45.00 - 500.0 Hz	45.00 - 500.0 H
Current(r.m.s) *1	0~155Vrms 0~310Vrms	4.2A	8.4A	16.8A	25.2A
Maximum Current(peak) OPT. APS-003(rms) OPT. APS-003(peak)	0-155Vrms 0-310Vrms 0-600Vrms	2.1A 16.8A 8.4A 1.05A 4.2A	4.2A 33.6A 16.8A 2.1A 8.4A	8.4A 67.2A 33.6A 4.2A 16.8A	12.6A 100.8A 50.4A 6.3A 25.2A
Total Harmonic Distortion (THD)*2 Crest Factor Line Regulation Load Regulation Response Time Reverse Current		≤4	Hz (Resistive Load)		
Load Regulation Response Time		0.1% (% of full sca 0.3% (% of full sca <100μs 30% of Maximum Output RMS Curre		(Continue); 100% of	Maximum
Load Regulation Response Time		0.3% (% of full sca <100μs 30% of Maximum	ile) Output RMS Current	(Continue); 100% of	Maximum
Load Regulation Response Time Reverse Current	Range Resolution Accuracy	0.3% (% of full sca <100µs 30% of Maximum Output RMS Curre 0-155Vrms, 0-310	Output RMS Current nt (Within 3 minutes) Vrms, Auto 99Vrms; 0.1V at 100.)	Maximum
Load Regulation Response Time Reverse Current SETTING Voltage Frequency	Resolution Accuracy Range Resolution Accuracy	0.3% (% of full sca <100µs 30% of Maximum of Output RMS Curre 0-155Vrms, 0-310 0.01V at 0.00 - 99. ±(0.5% of setting+ 45 - 500Hz 0.01Hz at 45.00 - 9 ±0.02% of setting	Output RMS Current nt (Within 3 minutes) Vrms, Auto 99Vrms; 0.1V at 100.	0 – 310.0Vrms	Maximum
Load Regulation Response Time Reverse Current SETTING Voltage	Resolution Accuracy Range Resolution	0.3% (% of full sca <100µs 30% of Maximum of Output RMS Curre 0-155Vrms, 0-310 0.01V at 0.00 - 99. ±(0.5% of setting+ 45 - 500Hz 0.01Hz at 45.00 - 9 ±0.02% of setting 45-999.9Hz	Output RMS Current nt (Within 3 minutes) Vrms, Auto 99Vrms; 0.1V at 100.0 2 counts)	0 – 310.0Vrms 0.0 – 500.0Hz	Maximum

±(0.5% of reading+3 counts),3.000-17.50A

Voltage(RMS)	Range	0.20-38.75Vrms;38.76-77.50Vrms;
		77.51-155.0Vrms;155.1-310.0Vrms
	Resolution	0.01V at 0.00 - 99.99Vrms;
		0.1V at 100.0 - 310.0Vrms
Frequency	Accuracy#4	±(0.5% of reading + 2 counts)
	Range	45 ~ 500Hz
	Resolution	0.01 Hz at 45Hz-99.99Hz;
		0.1Hz at 100Hz-500.0Hz
	Accuracy	±0.1Hz
Current(RMS)	Range	2.00 - 70.00mA;60.0 - 350.0mA;
		0.300 - 3.500A;3.00 - 17.5A
	Resolution	0.01mA, 0.1mA, 0.001A, 0.01A
	Accuracy	±(0.6% of reading+5 counts),2.00-350.0mA;
		±(0.5% of reading+5 counts),0.300-3.500A;

0.20-38.75Vrms;38.76-77.50Vrms; 77.51-155.0Vrms;155.1-310.0Vrms 0.01V at 0.00 - 99.99Vrms; 0.1V at 100.0 - 310.0Vrms ±(0.5% of reading + 2 counts) 45 - 500Hz 0.01 Hz at 45Hz-99.99Hz; 0.1Hz at 100Hz-500.0Hz ±0.1Hz 0.200 - 3.500A; 3.00-35.00A

0.001A;0.01A

±(0.5% of reading+5 counts),0.200-3.500A ±(0.5% of reading+3 counts),3.00-35.00A





APS-7200

APS-7300

SPECIFICA	TIONS				1	
Model		APS-7050	APS-7100	APS-7200	APS-7300	
Current(Peak)	Range Resolution	0.0 70.0A 0.1A		0.0 140.0A 0.1A		
Power(W)	Accuracy Resolution Accuracy	±(1% of reading+1 0.01W, 0.1W, 1W ±(0.6% of reading+5	count) counts),0.20-99.99W;	± 1% of reading+1 of 0.1W, 1W ±(0.6% of reading+1	ount) 5counts),0.2-999.9W;	
Apparent(VA)	Resolution Accuracy	±(0.6% of reading+5 ±(0.6% of reading+2 0.01VA, 0.1VA, 1VA ±(1% of reading+7 co ±(1% of reading+7 co	counts),100.0-999.9W; counts),1000-9999W	±(0.6% of reading+2 0.1VA, 1VA ±(1% of reading+7 of ±(1% of reading+5 of	counts),1000-9999W counts),0.2-999.9VA; counts),1000-9999VA	
Power Factor	Resolution Accuracy	0.001 ±(2% of reading + 2		0.001 ±(2% of reading+2 of	ounts)	
GENERAL						
Remote output Sync output sig Number of Pres Protection Trigger Out Trigger In	nal	Output Signal 10 V, 10 (0–9 numeric ke OCP, OPP, OTP an Maximum low level source current = 8r	ys) d Alarm l output = 0.8V; Minir nA l input voltage = 0.8V;	num high level outpu	t = 2V ; Maximum	
SEQUENCE/	SIMULATION	FUNCTION				
Number of Memories Number of Steps Step Time Setting Range Operation Within Step Parameters		Jump Count (0 - 25	quence)	Branch 2, Trigger Ou	ase, Off Phase, Term tput	
AC INPUT						
Phase Input Voltage Input Frequency Max. Current Power Factor Power Consum		Single Phase 115/230Vac±15% 50/60Hz 16A/8A 0.7Typ. 1.8kVA or less	Single Phase 115/230Vac±15% 50/60Hz 32A/16A 0.7Typ. 3.6kVA or less	Single Phase 230Vac±15% 50/60Hz 32A 0.7Typ. 7.2kVA or less	Single Phase 230Vac±15% 50/60Hz 50A 0.7Typ. 10.8kVA or less	
ENVIRONME	•		3.0	7.2.77.0.1033	10.000	
Operating Temperature Range Storage Temperature Range Operating Humidity Range Storage Humidity Range						
INTERFACE				A)		
Standard Optional		USB Host, LAN GPIB (APS-001) RS232 / USB CDC	(APS-002)	USB Host, USB CD0 GPIB (APS-001) RS232 (APS-007)	C, LAN	
DIMENSION	S & WEICHT	1777				
		430(W) x 88(H) x 400(D) mm; Approx. 24kg	430(W) x 88(H) x 560(D) mm; Approx. 38kg	430(W) x 312(H) x 650(D) mm; Approx. 90kg	430(W) x 400(H) x 650(D) mm; Approx. 128kg	

ORDERING INFORMATION

APS-7050 500VA Programmable AC Power Source APS-7200 2000VA Programmable AC Power Source APS-7100 1000VA Programmable AC Power Source APS-7300 3000VA Programmable AC Power Source ACCESSORIES:

CD ROM (User Manual, Programming Manual for APS-7000) x 1, Power Cord (Region Dependent), GTL-123 Test Lead

OPTIONAL ASSESSORIES

APS-001 GPIB interface card APS-004 Output Frequency Capacity(45-999.9Hz) APS-002 RS-232/USB interface card (APS-7050, APS-7100) GRA-423 APS-7050, APS-7100 rack mount kit GRA-429 Rack mount kit (APS-7200) APS-007 RS-232 interface card (APS-7200, APS-7300) GRA-430 Rack mount kit (APS-7300) APS-003 Output Voltage Capacity (0-600 Vrms)

Note: 1. APS-7200/APS-7300 are not € approved.

2. The minimum time settings of sequence mode or simulate mode must be greater than 1 cycle of the waveform itself.

APS-7300 Rear Panel



APS-7200 Rear Panel



APS-7100 Rear Panel



APS-7050 Rear Panel



APS-7000 Series **Europe Type Output Outlet**



Note:

The Specifications are not suit for ARB mode.

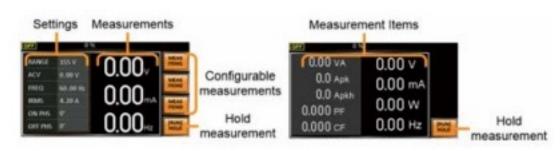
- *1. Maximum output current at working voltage 120Vrms, 240Vrms
- *2. 45-500Hz, 10% or higher of the rated output voltage, the maximum current or lower
- *3. All of measurement accuracy is at 23±5°C
- *4. In the case of 15-155V, 30-310V, sine wave, no load

Mains Terminal Cover Set



500/1000/2000/3000 VA Programmable Linear AC Power Source

A. CONTROL PANEL CHARACTERISTICS



Standard Mode

Simple Mode

There are two control panel modes: Standard mode and Simple mode. Both modes are shown on the above. Standard mode combines settings and AC Power Meter measurement window display. Users apply Function key (F1~F3) to select required measurement items. There are nine items for selection. Simple mode shows all measurement items on the display.

B REVERSE CURRENT DISPLAY





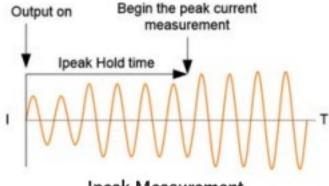
Standard Mode

Simple Mode

When output terminal detects 180 degree phase difference between voltage and current (reverse current), the front panel of APS-7000 Series will remind users the power and power factor measurement results in red numerical display. This feature can be applied to show the power and power factor measurement while testing inverter for feedback power grid. As shown on the above:

APS-7000 Series can withstand reverse current: 30% of the maximum effective current or maximum current output within three minutes.

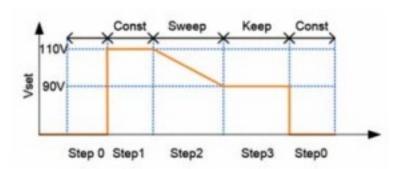
C T IPEAK, HOLD FUNCTION



Ipeak Measurement

T, Ipk Hold sets delay time (1ms~60 seconds) for measurement after the output of Ipeak value and the maximum value will be retrieved. Update will be proceeded only if measured value is greater than the original value. Ipk Hold is for measuring transient inrush current as soon as the equipment power is on that is usually done by oscilloscope and current probe. T, Ipk Hold delay time setting can be applied to measure inrush current of sequentially activated DUT.

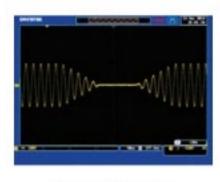
D SEQUENCE MODE

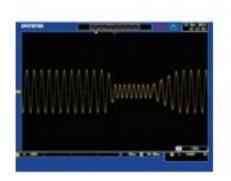


Sequence Mode

There are ten sets of Sequence mode and each set has 0~255 steps. The time setting range for each step is 0.01 ~ 999.99 seconds. Combining many sets of steps to edit required waveforms can satisfy users' requirement of highly complicated waveforms.

SIMULATE MODE



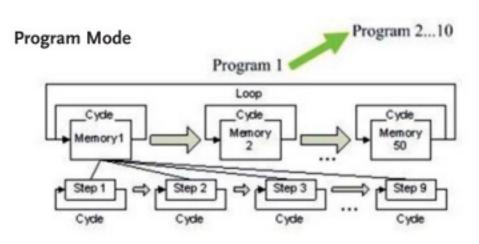


Voltage Fall

This mode can rapidly produce different simulated input transient waveforms such as power outage; voltage rise and voltage fall etc. for engineers to evaluate the impact on DUT posed by the transient phenomena. For instance, capacitor endurance test.

Power Outage Voltage Rise

F PROGRAM MODE

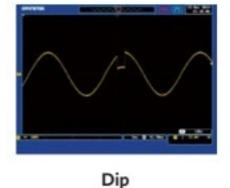


This mode allows users to set ceiling and floor specifications to produce PASS/FAIL result after the measurement is done. It can also show test results for each test procedure or only show the last result.

There are ten sets of Program mode and each set has 50 sets of memory. Each memory comprises 9 steps. Each Program will operate according to memory sequence, self-defined loops or designated steps to stop.

G SURGE/DIP CONTROL

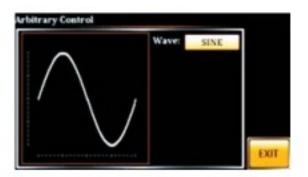




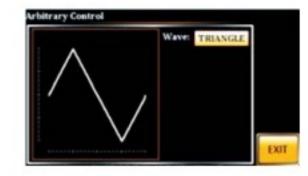
Overlapping a Surge/Dip voltage on a normal voltage as the input power for DUT allows users to simulate Surge/Dip situation and evaluate DUT characteristics.

H. FUNCTION WAVEFORM (ARB) MODE

Provide waveforms in seven categories and 20,000 waveform combinations so as to rapidly simulate distorted AC voltage waveforms.



Sine Waveform Standard AC Waveform



Triangle Waveform

Power Harmonic Output Simulation
Is Triangle Waveform



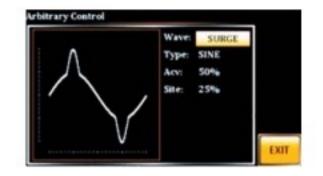
Staircase Waveform Simulate Square Waveform And Staircase Waveform For Commercial Ups



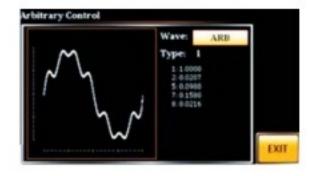
Clipped Sinewave Simulate Grid Power Supply Heavy Load Waveform



Crest Factor Waveform Simulate Rectified Filter Current Waveform By Capacitor Input



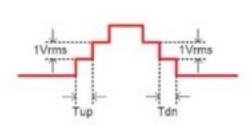
Surge Waveform Simulate Grid Power Supply's Peak Over-voltage

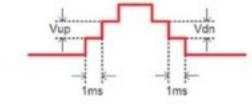


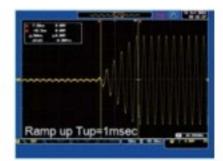
Fourier Series Synthesized Waveform

Simulate real output power waveform. Distorted power waveform is produced due to output impedance and non-linear effect such as inductance, capacitance, and parasitic capacitance effect. For example: motors.

RAMP CONTROL







Ramp down Vdn = 2Vrms

Tup \rightarrow 0.1 ~ 999.9ms Tdn \rightarrow 0.1 ~ 999.9ms

 $Vup \rightarrow 0.01 \sim 99.99 \text{ Vrms}$ $Vdn \rightarrow 0.01 \sim 99.99 \text{ Vrms}$

Mode=Time, Tup=1msec, VAC=100V, Freq=50Hz, Ramp output=on.

Mode=Voltage, Vdn=2Vrms, VAC=100V, Freq=50Hz, Ramp output=off.

Ramp control allows users to set output voltage rise or fall speed which is based on time (1ms) or voltage (1Vrms) unit.



APS-7050E



APS-7100E



FEATURES

- # 4.3" large LCD Display
- * Output Capacity: APS-7050E (500VA, 310Vrms, 4.2/2.1Arms) APS-7100E (1000VA, 310Vrms, 8.4/4.2Arms)
- * Measurement Function : Voltage, Current, Power, Frequency, Power Factor, Ipeak
- * Reverse Current Alarm Function
- * 10 Sets of The Test Mode Simulate Power Transient Output
- * 10 Sets of Preset Allow Users to Store Ten Settings
- * OCP/OPP/OTP Protection
- * Variable Voltage, Frequency and Current Limiter
- # Universal Power Inlet

GW Instek launches the APS-7000E series the economy version of the APS-7000 programmable AC power source. With the height of 2U, the maximum rated output for APS-7050E is 500VA, 310Vrms, 4.2Arms and APS-7100E is 1000VA, 310Vrms, 8.4Arms. The output frequency range of the series is 45~500Hz. The series is ideal for the test and development of DC power supply devices, consumer electronics, automotive electronics and electronic components.

The APS-7000E series comprises six measurement and test functions (Vrms, Irms, F, Ipk, W, PF), and provides user interface similar to that of AC Power Meter. The APS-7000E series, via switching many sets of current levels to increase small current measurement resolution, is ideal for the LED industry and standby mode power consumption test. Ten sets of Preset allow users to store ten settings.

To meet the test criteria of line voltage fluctuation often seen in consumer electronics, the APS-7000E series not only provides a stable AC power source but also features the Test mode to satisfy special or abnormal voltage and frequency variation demands. Ten sets of the Test mode simulate power outage, voltage rise, and voltage fall. The APS-7000E series that simulates waveforms of city power grid's transient changes is suitable for verifying electronics products operated under abnormal power source.

The APS-7000E series is the economy version of the APS-7000 series. If communications interface and larger voltage/frequency are required, please refer to the APS-7000 series.

ADC 705	A DC 7100F						
Model APS-7050	0E APS-7100E						
Power Rating 500VA	1000VA						
Output Voltage 0 - 155Vrms/0 - 3							
Output Frequency 45.00 – 500.0	0 Hz 45.00 – 500.0 Hz						
Maximum Current 0~155Vrms 4.2A	8.4A						
(r.m.s) 0~310Vrms 2.1A	4.2A						
Maximum Current 0~155Vrms 16.8A (peak)	33.6A						
(Peak) 0~310Vrms 8.4A	16.8A						
Total Harmonic Distoration (THD) ≤ 0.5% at 45 - 500Hz (F	Resistive Load)						
Crest Factor ≤4	3508044 20000000						
Line Regulation 0.1% (% of full scale)							
Load Regulation 0.3% (% of full scale)							
Response Time <100μs							
	ut RMS Current (Continue); 100% of Maximum						
Output RMS Current (W	(ithin 3 minutes)						
SETTING							
Voltage Range 0 – 155Vrms/0 – 310Vrn	NOTE TO SELECT A SECURITION OF THE SECURITION OF THE SECURITIES AND ASSESSMENT OF THE SECURITIES AND ASSESSMENT OF THE SECURITION OF THE SECURITIES AND ASSESSMENT OF THE SECURITIES ASSESSMENT OF THE SECURITIES AND ASSESSMENT OF THE						
	ms; 0.1V at 100.0 – 310.0Vrms						
Accuracy ±(0.5% of setting+2 cou	unts)						
Frequency Range 45 – 500Hz	45 – 500Hz 0.01Hz at 45.00 – 99.99Hz/0.1Hz at 100.0 – 500.0Hz						
	Hz/0.1Hz at 100.0 – 500.0Hz						
Accuracy ±0.02% of setting							
MEASUREMENT							
	-77.50 Vrms/77.51–155.0Vrms/155.1–310.0Vrms						
	ms; 0.1V at 100.0 – 310.0Vrms						
Accuracy ±(0.5% of reading + 2 co	ounts)						
Frequency Range 45 – 500Hz	HS.						
	Hz)/0.1Hz (at 100Hz-500.0Hz)						
Accuracy ±0.1Hz							
	350.0mA/0.300 - 3.500A/3.00 - 17.5A						
Resolution 0.01mA, 0.1mA, 0.001A							
	unts); 2.00-350.0mA/±(0.5% of reading+5 counts);						
	freading+3 counts);3.500–17.50A						
Current(Peak) Range 0.0 ~ 70.0A							
Resolution 0.1A							
Accuracy ±(1% of reading+1 cour	nt)						
Power(W) Resolution 0.01W, 0.1W, 1W							
	unts); 0.20-99.99W; ±(0.6% of reading+5 counts);						
	of reading+2 counts); 1000–9999W						
Power Factor Resolution 0.001							
Accuracy ±(2% of reading + 2 cou	ints)						
GENERAL							
Number of Preset 10 (0–9 Numeric keys)	2392						
Protection OCP, OPP, OTP and Ala	arm						



APS-7050E

310.0

2.100 500.0



APS-7100E Rear Panel

APS-7050E Rear Panel



APS-7100E

Model	APS-7050E APS-7100E						
ENVIRONMENT CONDIT	IONS						
Operation Temperature Storage Temperature Operating Temperature Storage Humidity	0 - +40°C -10 - +70°C 20 - 80% RH (No Condensation) 80% RH or less(No Condensation)						
AC INPUT							
Input Power Source DIMENSIONS & WEICHT	1φ AC 115/230Vac ±15%						
	430(W) x 88(H) x 400(D) mm; Approx. 24kg	430(W) x 88(H) x 560(D) mm; Approx. 38kg					

ORDERING INFORMATION

APS-7050E 500VA AC Power Source APS-7100E 1000VA AC Power Source

ACCESSORIES :

CD ROM (User Manual) x 1, Power Cord (Region Dependent), Mains Terminal Cover Set,

GTL-123 Test Lead

OPTIONAL ASSESSORIES

GRA-423 Rack Mount Kit (APS-7000E Series)



Mains Terminal Cover Set

APS-7000E Series Europe Type Output Outlet





ELECTRONIC LOADS

GW Instek provides DC electronic loads, AC/DC electronic loads, which allow users to flexibly test various batteries, energy storage systems, and power supply devices. DC electronic load can simulate load characteristics, including static, dynamic, constant current, constant resistance, constant voltage, constant power and short circuit. AC/DC electronic load can simulate sine wave current load in the CC mode, non-sine wave current load in the linear CC mode, and AC rectified load in the rectifier mode.

Electronic loads can be simply divided into multi-channel electronic loads and single-channel electronic loads according to application requirements. The multi-channel electronic load can test and measure multiple sets of low-power and different specifications of power output devices at the same time; and the single-channel electronic load can, based on the characteristics of a single load, choose high power, high voltage, high precision, high resolution or fast dynamic response to conduct test and measurement.

Electric vehicles, solar energy, energy storage systems, server power supplies, and power electronics, etc., can use the built-in dedicated test modes of GW Instek electronic loads to simplify user's operating procedures and shorten the test time. For example: using the CC+CV, CP+CV, CC+UVP, CP+UVP battery discharge modes to discharge electric vehicle battery can avoid over-discharge and protect the battery at the same time. The MPPT mode can quickly obtain the maximum power point of the solar panel.

PRODUCTS

- Multi-channel Electronic Loads
- High Power DC Electronic Load
- DC Electronic Load
- AC & DC Electronic Load

DC ELECTRONIC LOADS

MULTI-CHANNEL DC ELECTRONIC LOAD MODULES

Model	Operation Voltage	Operation Current	Power	Channel	Weight(kg)	Page
PEL-2020A(B)	0 ~ 80V	20A	100/100W	2	3.8	
PEL-2030A(B)	0 ~ 80V	5/40A	30/250W	2	3.8	D105-108
PEL-2040A(B)	0 ~ 80V	70A	350W	1	3.8	D103-108
PEL-2041A(B)	0 ~ 500V	10A	350W	1	3.8	

DC ELECTRONIC LOADS

Model	Operation Voltage	Operation Current	Power	Channel	Weight(kg)	Page
PEL-503-80-50	0 ~ 80V	50A	250W	1	5.3	
PEL-504-80-70	0 ~ 80V	70A	350W	1	5.3	D117-118
PEL-507-80-140	0 ~ 80V	140A	700W	1	10.3	1
PEL-3021	0 ~ 150V	35A	175W	1	6	D93-98
PEL-3031E	0 ~ 150V	60A	300W	1	7.5	D99-104
PEL-3041	0 ~ 150V	70A	350W	1	7	
PEL-3111	0 ~ 150V	210A	1050W	1	17	1
PEL-3211	0 ~ 150V	420A	2100W	1	23	1
PEL-3212	0 ~ 150V	420A	2100W	1	67.5	1
PEL-3322	0 ~ 150V	630A	3150W	1	73	1
PEL-3323	0 ~ 150V	630A	3150W	1	85.5	D93-98
PEL-3424	0 ~ 150V	840A	4200W	1	110	1
PEL-3533	0 ~ 150V	1050A	5250W	1	96.5	1
PEL-3535	0 ~ 150V	1050A	5250W	1	127.5	1
PEL-3744	0 ~ 150V	1470A	7350W	1	125	1
PEL-3955	0 ~ 150V	1890A	9450W	1	149	1
PEL-3032E	0 ~ 500V	15A	300W	1	7.5	D99-104
PEL-504-500-15	0 ~ 500V	15A	350W	1	5.3	D117.11
PEL-507-500-30	0 ~ 500V	30A	700W	1	10.3	D117-118
PEL-3021H	0 ~ 800V	8.75A	175W	1	6	
PEL-3041H	0 ~ 800V	17.5A	350W	1	7	1
PEL-3111H	0 ~ 800V	52.5A	1050W	1	17	1
PEL-3211H	0 ~ 800V	105A	2100W	1	23	1
PEL-3212H	0 ~ 800V	105A	2100W	1	67.5	
PEL-3322H	0 ~ 800V	157.5A	3150W	1	73	D93-98
PEL-3323H	0 ~ 800V	157.5A	3150W	1	85.5	
PEL3424H	0 ~ 800V	210A	4200W	1	110	1
PEL-3533H	0 ~ 800V	262.5A	5250W	1	96.5]
PEL-3535H	0 ~ 800V	262.5A	5250W	1	127.5	
PEL-3744H	0 ~ 800V	367.5A	7350W	1	125	
PEL-3955H	0 ~ 800V	472.5A	9450W	1	149	1

DC ELECTRONIC LOADS

HIGH POWER DC ELECTRONIC LOADS

Model	Operation Voltage	Operation Current	Power	Channel	Weight(kg)	Page
PEL-5006C-150-600	150V	600A	6kW	1	62	
PEL-5008C-150-800	150V	800A	8kW	1	77.5	
PEL-5010C-150-1000	150V	1000A	10kW	1	84.8	
PEL-5012C-150-1200	150V	1200A	12kW	1	92	
PEL-5015C-150-1500	150V	1500A	15kW	1	116.5	
PEL-5018C-150-1800	150V	1800A	18kW	1	124	
PEL-5020C-150-2000	150V	2000A	20kW	1	140.5	
PEL-5024C-150-2000	150V	2000A	24kW	1	155	
PEL-5006C-600-420	600V	420A	6kW	1	62	
PEL-5008C-600-560	600V	560A	8kW	1	77.5	
PEL-5010C-600-700	600V	700A	10kW	1	84.8	
PEL-5012C-600-840	600V	840A	12kW	1	92	D109-116
PEL-5015C-600-1050	600V	1050A	15kW	1	116.5	D109-116
PEL-5018C-600-1260	600V	1260A	18kW	1	124	
PEL-5020C-600-1400	600V	1400A	20kW	1	140.5	
PEL-5024C-600-1680	600V	1680A	24kW	1	155	
PEL-5006C-1200-240	1200V	240A	6kW	1	62	
PEL-5008C-1200-320	1200V	320A	8kW	1	77.5	
PEL-5010C-1200-400	1200V	400A	10kW	1	84.8	
PEL-5012C-1200-480	1200V	480A	12kW	1	92	
PEL-5015C-1200-600	1200V	600A	15kW	1	116.5	
PEL-5018C-1200-720	1200V	720A	18kW	1	124	
PEL-5020C-1200-800	1200V	800A	20kW	1	140.5	
PEL-5024C-1200-960	1200V	960A	24kW	1	155	
PEL-5004G-150-400	150V	400A	4kW	1	28	
PEL-5005G-150-500	150V	500A	5kW	1	28	
PEL-5006G-150-600	150V	600A	6kW	1	28	
PEL-5004G-600-280	600V	280A	4kW	1	29	
PEL-5005G-600-350	600V	350A	5kW	1	29	D125-128
PEL-5006G-600-420	600V	420A	6kW	1	29	
PEL-5004G-1200-160	1200V	160A	4kW	1	29	
PEL-5005G-1200-200	1200V	200A	5kW	1	29	
PEL-5006G-1200-240	1200V	240A	6kW	1	29	

DC ELECTRONIC LOADS

AC/DC ELECTRONIC LOADS

Model	Operation Voltage	Operation Current	Power	Channel	Weight(kg)	Page
AEL-5002-350-18.75	350V	18.75A	1875W	1	21.5	
AEL-5003-350-28	350V	28A	2800W	1	27.5	1
AEL-5004-350-37.5	350V	37.5A	3750W	1	33.5	1
AEL-5006-350-56	350V	56A	5600W	1	58	1
AEL-5008-350-75	350V	75A	7500W	1	70	1
AEL-5012-350-112.5	350V	112.5A	11250W	1	105	1
AEL-5015-350-112.5	350V	112.5A	15000W	1	140	1
AEL-5019-350-112.5	350V	112.5A	18750W	1	260	1
AEL-5023-350-112.5	350V	112.5A	22500W	1	295	1
AEL-5002-425-18.75	425V	18.75A	1875W	1	21.5	D119-124
AEL-5003-425-28	425V	28A	2800W	1	27.5	
AEL-5004-425-37.5	425V	37.5A	3750W	1	33.5	1
AEL-5006-425-56	425V	56A	5600W	1	58	1
AEL-5008-425-75	425V	75A	7500W	1	70	1
AEL-5012-425-112.5	425V	112.5A	11250W	1	105	1
AEL-5015-425-112.5	425V	112.5A	15000W	1	140	1
AEL-5019-425-112.5	425V	112.5A	18750W	1	260	1
AEL-5023-425-112.5	425V	112.5A	22500W	1	295	1
AEL-5003-480-18.75	480V	18.75A	2800W	1	27.5	1
AEL-5004-480-28	480V	28A	3750W	1	33.5	1



PEL-3111/3111H



PEL-3041/3041H/3021/3021H



FEATURES

- * Operating Voltage (DC): 0~150V(PEL-3000)/ 0~800V(PEL-3000H)
- * Operating Mode : C.C/C.V/C.R/C.P/C.C+C.V/C.R+C.V/C.P+C.V
- * Parallel Connection of Inputs for Higher Capacity (Max: 9,450W)
- * Support of High Slew Rate : Max 16A/µs (PEL-3000)/0.84A/µs (PEL-3000H)
- * Run Program Function (Go/NoGo Test)
- * Sequence Function for High Efficient Load Simulations
- * Dynamic (Switching) Function: 0.0166Hz~ 20kHz
- * Soft Start Function : Off/On (1~200ms,
- Res. 1ms)
- * Adjustable OCP/OVP/OPP/UVP Setting * Short Circuit Function
- * Timer Function: Elapsed Time of Load on
- * Cut Off Time (Auto Load Off Timer): 1s to 999h 59min 59s or Off
- * External Channel Control/Monitoring Via Analog Control Connector
- * Setup Memories: 100 sets
- * 3.5 Inch TFT LCD Display
- * Multi Interface : USB, RS-232 (Std.)/ GPIB, LAN (Opt.)

Rear Panel





The PEL-3000 Series, a single-channel, programmable D.C. electronic load with 0.01mA current resolution and 16A/ μ s current Slew Rate, is very ideal for testing server power supply and SPS(Switching Power Supply) for commercial and industrial computers. For a heavy-duty device like cloud ecosystem running 24-hour nonstop operations, a stable and high-power power supply, ranging from 350W to 1500W, is required to maintain the normal operation of server, Hub, and the equipment of data storage and internet communications. Owing to the increasing demand of data transmission and large scale data storage of telecommunications systems, the infrastructure of internet communications is in the pace of rapid expansion. This has greatly boosted the market demand of telecommunications equipment powered by power supply of 2000W and above. The flexible power combination of PEL-3000 Series meets the test requirements of present high-power power supply. The PEL-3000H Series programmable DC Electronic load, which not only inherited functions and features from the PEL-3000 Series but providing three current ranges for all PEL-3000H Series and adding voltage monitor BNC terminals on the front panel. The PEL-3000H Series, a single-channel, programmable D.C. electronic load with 800V and 0.84A/ μ s current Slew Rate, is ideal for the test of the high voltage devices such as the EV & HEV in-vehicle chargers, DC/DC converters or high-voltage batteries. With respect to battery testing applications such as rechargeable battery for electrical tools, battery module and automobile battery, PEL-3000(H) Series has three stand-alone models to offer including 175W, 350W, 1050W and Booster. By connecting Booster 2100W units with master units, the maximum load capacity of the whole system can reach 9,450W. Hence, the PEL-3000(H) Series fulfills various power testing requirements including medium to low power or high-power power supply.

The PEL-3000(H) Series has seven operating modes and three operating functions. Among the seven operating modes, four of them are basic operating modes, including constant current, constant voltage, constant resistance, and constant power, and the other three are advanced operating modes including constant current + constant voltage, constant resistance + constant voltage, and constant power + constant voltage. Users must first select operating mode and then operating function based upon the test requirements. Static, Dynamic and Sequence operating functions can be applied to different testing conditions including a fixed load level, switching between two levels or switching among more than two levels. Sequence function is divided into Fast Sequence and Normal Sequence according to the test time of each step. Both Dynamic and Sequence are to assist users to simulate the genuine load change. For instance, PEL-3000(H) Series can simulate HEV current consumption to make sure that automobile battery can supply HEV with sufficient power need on the road. By so doing, manufacturers can elevate product quality and reliability.

The Soft Start function of the PEL-3000(H) Series can set current rise time for the moment PEL-3000(H) Series is turned on to reduce the abnormal situation of the voltage drop of power supply under test. The adjustable Under Voltage Protection(UVP), GO/NO GO voltage input monitoring function, current monitoring function and Timer Function to control load activation time can be jointly applied to the characteristic tests of battery bleeding to avoid battery damage during bleeding operation. Based upon the functionalities described above, the PEL-3000(H) Series can test a vast variety of power supply ranging from the fundamental static sink current to complex dynamic load simulations so as to enhance product quality and reliability.

The single unit D.C Electronic Load of PEL-3000(H) Series

The PEL-3000(H) Series is a high speed, single channel and programmable D.C. electronic load and its power, functionality, parallel combination and size are listed on the following chart:

MODEL	PEL-3021/3021H	PEL-3041/3041H	PEL-3111/3111H	PEL-3211/3211H
Power	175W	350W	1,050W	2,100W Booster
Function	Full-function Single Unit	Full-function Single Unit	Full-function Single Unit	No control panel, can not be operated alone
Parallel	Parallel with same	Parallel with same	Parallel with same model, 5 units the maximum	Parallel with
Combination	model, 5 units the maximum	model, 5 units the maximum	Parallel with the maximum of four PEL-3211 (H)s	PEL-3111(H)
Size	Half Rack	Half Rack	Full Rack	Full Rack

Note:

- *1, Full scale of H range
- *2, Vin: input terminal voltage of electronic load
- *3, M range applies to the full scale of H range
- *4, Siemens[S] = Input current[A] / Input voltage[V] = $1/\text{resistance}[\Omega]$
- *5, Converted value at the input current. At the input current. It is not applied for the condition of the parallel operation.
- *6, set = Vin/Rset
- *7. At the sensing point during remote sensing under the operating range of the input voltage. It is also applied for the condition of the parallel operation.
- *8. It is not applied for the condition of the parallel operation.
- *9, Time to reach from 10 % to 90 % when the current is varied from 2 % to 100 % (20 % to 100 % in M range) of the rated current.
- *10. N = Number of units in parallel (same model)
- *11. N = Number of units in parallel (same model) or N = 1 + 2 x (Number of units in parallel [PEL-3211])

SPECIFICATIONS						
Model			PEL-3021	PEL-3041	PEL-3111	PEL-3211
Voltage Current Power Input Resistance Min. Operating			0V-150V 35A 175W 500 kΩ 0.75V@17.5A	0V-150V 70A 350W 500 kΩ 0.75V@35A	0V-150V 210A 1050W 500 kΩ 0.75V@105A	0V-150V 420A 2100W 500 kΩ 0.75V@210A
Voltage(DC)(Typ.) CONSTANT CURRENT MOD	\r		1.5V@35A	1.5V@70A	1.5V@210A	1.5V@420A
Operating Range	H,M,	L	0-35A 0-3.5A 0-0.35A	0-210A 0-21A 0-2.1A	420A	
Accuracy of Setting	н,м		±(0.2 % of set + 0.1 % of f.s"		±(1.2% of set+1.1% of f.s)	
Accuracy of Setting	L		±(0.2 % of set + 0.1 % of f.s*)	N/A		
Accuracy of Setting(Parallel)			±(1.2% of set +1.1% of f.s.")			±(1.2% of set+1.1% of f.s)
Resolution	Н,М,	L	1mA 0.1mA 0.01mA	2mA 0.2mA 0.02mA	10mA 1mA 0.1mA	N/A
CR MODE			23.3336S-400µS	46.6672S800μS	140.0016S-2.4mS	280.003254.8mS
Operating Range		н	(42.857mΩ-2.5kΩ)	(21.428mΩ-1.25kΩ)	(7.1427mΩ-416.6667Ω)	(3.5714mΩ-208.3334Ω)
	Range	м	2.33336S-40µS	4.6667S-80μS	14.0001S-242.4µS	28.0032S-484.8µS
	Kange	IVI	(428.566mΩ-25kΩ)	(214.28mΩ-12.5kΩ)	(71.427mΩ-4.16667kΩ)	(35.7135mΩ-2.083334Ω)
		L	0.233336S-4μS (4.28566Ω~250kΩ)	0.46667S8μS (2.1428Ω125kΩ)	1.40001S-24.24μS (714.27mΩ-41.6667kΩ)	N/A
Accuracy of Setting	H,M		4.2836612~230812) ±0.5 % of set* + 0.5 % of f.s	1	(714.271152~41.0007K52)	±(1.2% of set" +1.1% of f.s"
Accuracy of Setting	L L		±0.5 % of set + 0.5 % of f.s	1.1% of Set +1.1% of 1.5		
Parallel			±(1.2 % of set + 1.1 % of f.s')	1) + Vin ² /500kΩ	190 Vol	±(1.2% of set +1.1% of f.s*)
Resolution	Н,М,	L	400μS 40μS 4μS	800μS 80μS 8μS	2.4mS 240μS 24μS	N/A
CONSTANT VOLTAGE MOD	E					
Operating Range	Range	н	1.5V-150V			1.5V-150V
		L	1.5V-15V			1.5V-15V
Accuracy of Setting	H,L	-	±(0.1 % of set + 0.1 % of f.s)			N/A
Resolution CONSTANT POWER MODE	H,L	1	10mV/1mV			
Operating Range		н	17.5W~175W	35W-350W	105W-1050W	210W-2100W
operating Range	Range	м	1.75W-17.5W	3.5W-35W	10.5W-105W	21W-210W
		L	0.175W-1.75W	0.35W-3.5W	1.05W-10.5W	N/A
Accuracy of Setting	Н,М,	L	±(0.6 % of set " + 1.4 % of f.s	°¹) + Vin°³/500kΩ		N/A
Resolution	Н,М,	L	10mW 1mW 0.1mW	10mW 1mW 0.1mW	100mW 10mW 1mW	N/A
PARALLEL Mode	I		975\Y/	175000		DEL 2222 - 21 4 1 4
Capacity			875W	1750W	5250W	PEL-3111 with 4 booster units: Max 9.45kW
SLEW RATE						
Operation Mode			CC, CR	CC, CR	CC, CR	N/A
Setting Range (CC mode)	Range	M L	2.5 x N ^{*10} mA/μs-2.5A/μs 250 x N ^{*10} μA/μs-250mA/μs 25 x N ^{*10} μA/μs-25mA/μs	5 x N ^{*10} mA/μs-5A/μs 500 x N ^{*10} μA/μs-500mA/μs 50 x N ^{*10} μA/μs-50mA/μs	16 x N ⁺¹¹ mA/μs-16A/μs 1.6 x N ⁺¹¹ mA/μs-1.6A/μs 160 x N ⁺¹¹ μA/μs-160mA/μs	N/A
Setting Range		Н	250 x N ⁺¹⁰ μA/μs-250mA/μs	500 x N ⁺¹⁰ μA/μs-500mA/μs	1.6 x N ⁺¹¹ mA/μs-1.6A/μs	5 - 1770 V
(CR Mode)	Range	М	25 x N ^{*10} μΑ/μς–25mΑ/μς 2.5 x N ^{*10} μΑ/μς–2.5mΑ/μς	50 x N ^{*10} μA/μs-50mA/μs	160 x N ^{*11} μΑ/μs~160mA/μs 16 x N ^{*11} μΑ/μs—16mA/μs	N/A
Accuracy of Setting	Н,М,	L	±(10 % of set* + 5μs)	5 x N ^{*10} μA/μs5mA/μs	16 X N µА/µѕ-16МА/µѕ	N/A
Resolution			1 x N ^{*10} mA 250 x N ^{*10} mA/μs~2.5A/μs 100 x N ^{*10} μA	2 x N ⁻¹⁰ mA 500 x N ⁻¹⁰ mA/μs~5A/μs 200 x N ⁻¹⁰ μA	6 x N ^{*1} mA 1.6 x N ^{*1} A/μs~16A/μs	
(Setting Range)			25 x N ⁻¹⁰ mA/μs~250 x N ⁻¹⁰ mA/μs 10 x N ⁻¹⁰ μA 2.5 x N ⁻¹⁰ mA/μs~25 x N ⁻¹⁰ mA/μs 1 x N ⁻¹⁰ μA 250 x N ⁻¹⁰ μA/μs~2.5 x N ⁻¹⁰ mA/μs 100 x N ⁻¹⁰ nA 25 x N ⁻¹⁰ μA/μs~250 x N ⁻¹⁰ μA/μs 10 x N ⁻¹⁰ nA 2.5 x N ⁻¹⁰ μA/μs~25 x N ⁻¹⁰ μA/μs	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ mA/μs 2 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ nA 50 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ nA 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs	600 x N ⁻¹ μA 160 x N ⁻¹ mA/μs~1.6 x N ⁻¹ A/μs 60 x N ⁻¹ μA 16 x N ⁻¹ mA/μs~160 x N ⁻¹ mA/μs 6 x N ⁻¹ μA 1.6 x N ⁻¹ mA/μs~16 x N ⁻¹ mA/μs 600 x N ⁻¹ nA 160 x N ⁻¹ μA/μs~1.6 x N ⁻¹ μA/μs 60 x N ⁻¹ nA 16 x N ⁻¹ μA/μs~160 x N ⁻¹ μA/μs	N/A
METER			25 x N ^{*10} mA/μs~250 x N ^{*10} mA/μs 10 x N ^{*10} μA 2.5 x N ^{*10} mA/μs~25 x N ^{*10} mA/μs 1 x N ^{*10} μA 250 x N ^{*10} μA/μs~2.5 x N ^{*10} mA/μs 100 x N ^{*10} μA/μs~250 x N ^{*10} μA/μs 10 x N ^{*10} μA/μs~250 x N ^{*10} μA/μs 2.5 x N ^{*10} μA/μs~25 x N ^{*10} μA/μs	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ mA/μs~50 x N ⁻¹⁰ mA/μs 2 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ nA 50 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ nA	160 x N ⁻¹¹ mA/μs~1.6 x N ⁻¹¹ A/μs 60 x N ⁻¹¹ μA 16 x N ⁻¹¹ mA/μs~160 x N ⁻¹¹ mA/μs 6 x N ⁻¹¹ μA 1.6 x N ⁻¹¹ mA/μs~16 x N ⁻¹¹ mA/μs 600 x N ⁻¹¹ nA 160 x N ⁻¹¹ μA/μs~1.6 x N ⁻¹¹ μA/μs 60 x N ⁻¹¹ nA	N/A
	Accuracy Accuracy Accuracy		25 x N ^{*10} mA/μs~250 x N ^{*10} mA/μs 10 x N ^{*10} μA 2.5 x N ^{*18} mA/μs~25 x N ^{*10} mA/μs 1 x N ^{*10} μA 250 x N ^{*10} μA/μs~2.5 x N ^{*10} mA/μs 100 x N ^{*10} nA 25 x N ^{*10} μA/μs~250 x N ^{*10} μA/μs 10 x N ^{*10} nA	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ mA/μs~50 x N ⁻¹⁰ mA/μs 2 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ nA 50 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ nA	160 x N ⁻¹¹ mA/μs~1.6 x N ⁻¹¹ A/μs 60 x N ⁻¹¹ μA 16 x N ⁻¹¹ mA/μs~160 x N ⁻¹¹ mA/μs 6 x N ⁻¹¹ μA 1.6 x N ⁻¹¹ mA/μs~16 x N ⁻¹¹ mA/μs 600 x N ⁻¹¹ nA 160 x N ⁻¹¹ μA/μs~1.6 x N ⁻¹¹ μA/μs 60 x N ⁻¹¹ nA	N/A
METER Voltmeter Ammeter Ammeter(Parallel Operation)	Accuracy		25 x N ^{*10} mA/μs~250 x N ^{*10} mA/μs 10 x N ^{*10} μA 2.5 x N ^{*18} mA/μs~25 x N ^{*10} mA/μs 1 x N ^{*10} μA 250 x N ^{*10} μA/μs~2.5 x N ^{*10} mA/μs 100 x N ^{*10} nA 25 x N ^{*10} μA/μs~250 x N ^{*10} μA/μs 10 x N ^{*10} nA 2.5 x N ^{*10} μA/μs~25 x N ^{*10} uA/μs ±(0.1 % of rdg + 0.1 % of f.s) ±(0.2 % of rdg + 0.3 % of f.s)	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ mA/μs 2 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ nA 5 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs	160 x N ⁻¹¹ mA/μs~1.6 x N ⁻¹¹ A/μs 60 x N ⁻¹¹ μA 16 x N ⁻¹¹ mA/μs~160 x N ⁻¹¹ mA/μs 6 x N ⁻¹¹ μA 1.6 x N ⁻¹¹ mA/μs~16 x N ⁻¹¹ mA/μs 600 x N ⁻¹¹ nA 160 x N ⁻¹¹ μA/μs~1.6 x N ⁻¹¹ μA/μs 60 x N ⁻¹¹ nA	
METER Voltmeter Ammeter Ammeter(Parallel Operation) DYNAMIC MODE Operation Mode T1 & T2	Accuracy	H	25 x N ^{*10} mA/μs~250 x N ^{*10} mA/μs 10 x N ^{*10} μA 2.5 x N ^{*10} mA/μs~25 x N ^{*10} mA/μs 1 x N ^{*10} μA 250 x N ^{*10} μA/μs~2.5 x N ^{*10} mA/μs 100 x N ^{*10} μA/μs~2.5 x N ^{*10} mA/μs 10 x N ^{*10} μA/μs~250 x N ^{*10} μA/μs 2.5 x N ^{*10} μA/μs~250 x N ^{*10} μA/μs 2.5 x N ^{*10} μA/μs~25 x N ^{*10} μA/μs ±(0.1 % of rdg + 0.1 % of f.s) ±(0.2 % of rdg + 0.3 % of f.s) ±(0.2 % of rdg + 1.1% of f.s.) CC , CR and CP 0.025ms~10ms/Res : 1μs ; 1r ±100ppm of setting 2.5mA/μs~2.5A/μs 250μA/μs~250mA/μs	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ mA/μs~50 x N ⁻¹⁰ mA/μs 2 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs	160 x N ^{**} μA 16 x N ^{**} μA 16 x N ^{**} μA 1.6 x N ^{**} μA 1.6 x N ^{**} μA 1.6 x N ^{**} μA/μs~16 x N ^{**} μA/μs 600 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 60 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs	
METER Voltmeter Ammeter Ammeter(Parallel Operation) DYNAMIC MODE Operation Mode T1 & T2 Accuracy Slew Rate	Accuracy Accuracy	н	25 x N ^{**0} mA/μs~250 x N ^{**0} mA/μs 10 x N ^{**0} μA 2.5 x N ^{**0} mA/μs~25 x N ^{**0} mA/μs 1 x N ^{**0} μA 250 x N ^{**0} μA/μs~2.5 x N ^{**0} mA/μs 100 x N ^{**0} μA/μs~2.5 x N ^{**0} μA/μs 10 x N ^{**0} μA/μs~250 x N ^{**0} μA/μs 2.5 x N ^{**0} μA/μs~250 x N ^{**0} μA/μs 2.5 x N ^{**0} μA/μs~25 x N ^{**0} μA/μs ±(0.1 % of rdg + 0.1 % of f.s) ±(0.2 % of rdg + 0.3 % of f.s) ±(1.2% of rdg + 1.1% of f.s.) CC , CR and CP 0.025ms~10ms/Res: 1μs; 1r ±100ppm of setting 2.5mA/μs~2.5A/μs	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ mA/μs~50 x N ⁻¹⁰ mA/μs 2 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs	160 x N ^{**} μA 16 x N ^{**} μA 16 x N ^{**} μA 1.6 x N ^{**} μA 1.6 x N ^{**} μA 1.6 x N ^{**} μA/μs~16 x N ^{**} μA/μs 600 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 60 x N ^{**} μA/μs~1.60 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs	N/A
METER Voltmeter Ammeter Ammeter(Parallel Operation) DYNAMIC MODE Operation Mode T1 & T2 Accuracy Slew Rate (CC Mode)	Accuracy	H M L H	25 x N ^{***} mA/μs~250 x N ^{***} mA/μs 10 x N ^{***} μA 2.5 x N ^{***} mA/μs~25 x N ^{***} mA/μs 1 x N ^{***} μA 250 x N ^{***} μA/μs~2.5 x N ^{***} mA/μs 100 x N ^{***} μA/μs~2.5 x N ^{***} μA/μs 10 x N ^{***} μA/μs~250 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~250 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs ±(0.1 % of rdg + 0.1 % of f.s) ±(0.2 % of rdg + 0.3 % of f.s) ±(0.2 % of rdg + 1.1% of f.s.) CC , CR and CP 0.025ms~10ms/Res: 1μs; 1r ±100ppm of setting 2.5mA/μs~2.5A/μs 250μA/μs~250mA/μs 25μA/μs~25mA/μs 250μA/μs~25mA/μs	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 50 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 500μA/μs~50mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs	160 x N ⁻¹ μA 16 x N ⁻¹ μA 16 x N ⁻¹ μA 1.6 x N ⁻¹ μA 1.6 x N ⁻¹ μA 1.6 x N ⁻¹ μA/μs~16 x N ⁻¹ μA/μs 600 x N ⁻¹ μA/μs~1.6 x N ⁻¹ μA/μs 60 x N ⁻¹ μA/μs~1.60 x N ⁻¹ μA/μs 16 x N ⁻¹ μA/μs~160 x N ⁻¹ μA/μs 1.6 mA/μs~1.6A/μs 1.6 mA/μs~1.6A/μs 1.6 mA/μs~1.6A/μs 1.6 mA/μs~1.6A/μs 1.6 mA/μs~1.6A/μs	N/A
METER Voltmeter Ammeter Ammeter(Parallel Operation) DYNAMIC MODE Operation Mode T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUNCTION Functions	Accuracy	H M L H	25 x N ^{***} mA/μs~250 x N ^{***} mA/μs 10 x N ^{***} μA 2.5 x N ^{***} mA/μs~25 x N ^{***} mA/μs 1 x N ^{***} μA 250 x N ^{***} μA/μs~2.5 x N ^{***} mA/μs 100 x N ^{***} μA/μs~2.5 x N ^{***} μA/μs 25 x N ^{***} μA/μs~250 x N ^{***} μA/μs 10 x N ^{***} μA/μs~250 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 μA/μs~2.5 x N ^{***} μA/μs	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs 5μA/μs~5mA/μs ±0.4%F.S.	160 x N ^{**} μA 16 x N ^{**} μA 16 x N ^{**} μA 16 x N ^{**} μA 1.6 x N ^{**} μA/μs~16 x N ^{**} μA/μs 600 x N ^{**} μA 160 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 60 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs 1.6 mA/μs~1.6 A/μs 1.6 mA/μs~1.6 A/μs 1.6 mA/μs~1.6 A/μs 1.6 μA/μs~16 0 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs	N/A N/A N/A ±(1.2%of set+1.1% of F.S.)
METER Voltmeter Ammeter Ammeter(Parallel Operation) DYNAMIC MODE Operation Mode T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUNCTION Functions GENERAL	Accuracy	H M L H	25 x N ^{***} mA/μs~250 x N ^{***} mA/μs 10 x N ^{***} μA 2.5 x N ^{***} mA/μs~25 x N ^{***} mA/μs 1 x N ^{***} μA 250 x N ^{***} μA/μs~2.5 x N ^{***} mA/μs 100 x N ^{***} μA/μs~2.5 x N ^{***} μA/μs 10 x N ^{***} μA/μs~250 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~250 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs ±(0.1 % of rdg + 0.1 % of f.s) ±(0.2 % of rdg + 0.3 % of f.s) ±(0.2 % of rdg + 1.1% of f.s.) CC , CR and CP 0.025ms~10ms/Res : 1μs ; 1r ±100ppm of setting 2.5mA/μs~2.5A/μs 250μA/μs~25mA/μs 250μA/μs~25mA/μs 25μA/μs~25mA/μs 25μA/μs~25mA/μs 25μA/μs~25mA/μs 25μA/μs~25mA/μs 25μA/μs~2.5mA/μs 25μA/μs~2.5mA/μs 25μA/μs~2.5mA/μs 25μA/μs~2.5mA/μs 20.4%F.S.	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 mA/μs 500μA/μs~50mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs 5μA/μs~5mA/μs ±0.4%F.S. Overcurrent protection(OCP), Column (OCP), Column (OCP	160 x N ^{**} μA 16 x N ^{**} μA 16 x N ^{**} μA 16 x N ^{**} μA 1.6 x N ^{**} μA/μs~16 x N ^{**} μA/μs 600 x N ^{**} μA 160 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 60 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs 1.6 mA/μs~1.6 A/μs 1.6 mA/μs~1.6 A/μs 1.6 mA/μs~1.6 A/μs 1.6 μA/μs~16 0 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs	N/A N/A N/A ±(1.2%of set+1.1% of F.S.)
METER Voltmeter Ammeter Ammeter(Parallel Operation) DYNAMIC MODE Operation Mode T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUNCTION Functions GENERAL Input Range	Accuracy	H M L H	25 x N ^{***} mA/μs~250 x N ^{***} mA/μs 10 x N ^{***} μA 2.5 x N ^{***} mA/μs~25 x N ^{***} mA/μs 1 x N ^{***} μA 250 x N ^{***} μA/μs~2.5 x N ^{***} mA/μs 100 x N ^{***} μA/μs~2.5 x N ^{***} μA/μs 25 x N ^{***} μA/μs~250 x N ^{***} μA/μs 10 x N ^{***} μA/μs~250 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs 2.5 μA/μs~2.5 x N ^{***} μA/μs	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 500 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 mA/μs 500μA/μs~50mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs 5μA/μs~5mA/μs ±0.4%F.S. Overcurrent protection(OCP), Column (OCP), Column (OCP	160 x N ^{**} μA 16 x N ^{**} μA 16 x N ^{**} μA 16 x N ^{**} μA 1.6 x N ^{**} μA/μs~16 x N ^{**} μA/μs 600 x N ^{**} μA 160 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 60 x N ^{**} μA/μs~1.6 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs 16 x N ^{**} μA/μs~160 x N ^{**} μA/μs 1.6 mA/μs~1.6 A/μs 1.6 mA/μs~1.6 A/μs 1.6 mA/μs~1.6 A/μs 1.6 μA/μs~16 0 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs 1.6 μA/μs~16 mA/μs	N/A N/A N/A ±(1.2%of set+1.1% of F.S.)
METER Voltmeter Ammeter Ammeter(Parallel Operation) DYNAMIC MODE Operation Mode T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUNCTION Functions GENERAL	Accuracy	H M L H	25 x N ^{***} mA/μs~250 x N ^{***} mA/μs 10 x N ^{***} μA 2.5 x N ^{***} mA/μs~25 x N ^{***} mA/μs 1 x N ^{***} μA 250 x N ^{***} μA/μs~2.5 x N ^{***} mA/μs 100 x N ^{***} nA 25 x N ^{***} μA/μs~250 x N ^{***} μA/μs 10 x N ^{***} nA 2.5 x N ^{***} μA/μs~250 x N ^{***} μA/μs 2.5 x N ^{***} μA/μs~25 x N ^{***} μA/μs ±(0.1 % of rdg + 0.1 % of f.s) ±(0.2 % of rdg + 0.3 % of f.s) ±(0.2 % of rdg + 1.1% of f.s.) CC , CR and CP 0.025ms~10ms/Res : 1μs ; 1π ±100ppm of setting 2.5mA/μs~2.5A/μs 250μA/μs~250mA/μs 25μA/μs~25mA/μs 20.4%F.S.	50 x N ⁻¹⁰ mA/μs~500 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ mA/μs 20 x N ⁻¹⁰ μA/μs~5 x N ⁻¹⁰ mA/μs 200 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 20 x N ⁻¹⁰ μA/μs~500 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 x N ⁻¹⁰ μA/μs 5 x N ⁻¹⁰ μA/μs~50 mA/μs 500μA/μs~50mA/μs 500μA/μs~50mA/μs 50μA/μs~50mA/μs 50μA/μs~50mA/μs 5μA/μs~5mA/μs ±0.4%F.S. Overcurrent protection(OCP), C), Reverse connection protection C Single-phase; 47Hz~63Hz 110VA	160 x N" μA 16 x N" μA 16 x N" μA 16 x N" μA 1.6 x N" μA/μs~16 x N" μA/μs 600 x N" μA/μs~16 x N" μA/μs 60 x N" μA/μs~1.6 x N" μA/μs 60 x N" μA/μs~1.6 x N" μA/μs 16 x N" μA/μs~160 x N" μA/μs 16 x N" μA/μs~160 x N" μA/μs 16 μA/μs—160mA/μs 1.6mA/μs—160mA/μs 1.6mA/μs—160mA/μs 1.6μA/μs—160mA/μs 16μA/μs—16mA/μs 16μA/μs—16mA/μs 10μA/μs—16mA/μs 10μA/μs—16mA/μs 10μA/μs—16mA/μs	N/A N/A 1.2%of set+1.1% of F.S.) Theat protection (OHP),

SPECIFICATION	2142		DEL COTO	DEL COCC	DE1 2454	DEL SES	DEL 2222	DEL SESS	DEL 2711	DEL SOSS
Model		_	PEL-3212	PEL-3323	PEL-3424	PEL-3535	PEL-3322	PEL-3533	PEL-3744	PEL-3955
Voltage			0V-150V	0V-150V	0V-150V	0V-150V	0V-150V	0V-150V	0V-150V	0V-150V
Current Power			0-420A 2100W	0-630A 3150W	0-840A 4200W	0-1050A 5250W	0-630A 3150W	0-1050A 5250W	0-1470A 7350W	0-1890A 9450W
Input Resistance			250 kΩ	166.7 kΩ	125 kΩ	100 kΩ	500 kΩ	500 kΩ	500 kΩ	500 kΩ
Min. Operating			0.75V@210A	0.75V@315A	0.75V@420A	0.75V@525A	0.75V@315A	0.75V@525A	0.75V@735A	0.75V@945A
Voltage(DC)(Typ.)			1.5V@420A	1.5V@630A	1.5V@840A	1.5V@1050A	1.5V@630A	1.5V@1050A	1.5V@1470A	1.5V@1890A
CONSTANT CURRE		_								
Operating Range	H,M	_	0-420A 0-42A 0-4.2A			0-1050A 0-105A 0-10.5A	0-630A 0-63A N/A	0-1050A 0-105A N/A	0-1470A 0-147A N/A	0-1890A 0-189A N
Accuracy of Setting	H,M	,L	±(0.2 % of set + 0.1 %	6 of f.s") + Vin"/(500	/N ⁻¹⁰ kΩ)					
Resolution	H,M	,L	20mA 2mA 0.2mA	30mA 3mA 0.3mA	40mA 4mA 0.4mA	50mA 5mA 0.5mA	30mA 3mA N/A	50mA 5mA N/A	70mA 7mA N/A	90mA 9mA N
CR MODE			100				.,,			
Operating Range		22	280.0032S4.8mS	420.0048S-7.2mS	560.0064S-9.6mS	700.008S-12mS	420.00485-7.2mS	700.008S-12mS	980.0112S-16.8mS	1260.01445-21.6
		Н	(3.57138mΩ-	(2.38092mΩ-	(1.78569mΩ-	(1.42855mΩ-	(2.38092mΩ-	(1.42855mΩ~	(1.02039mΩ-	(793.641uΩ-
			208.333Ω) 28.00032S-480μS	138.888Ω) 42.00048S-720μS	104.166Ω) 56.00064S-960μS	83.3333Ω)	138.888Ω)	83.3333Ω)	59.5238Ω)	46.2963Ω)
	Range	м	(35.7138mΩ~	(23.8092mΩ-	(17.8569mΩ-	70.0008S-1.2mS (14.2855mΩ-	42.00048S-720μS (23.8092mΩ-	70.0008S–1.2mS (14.2855mΩ–	98.00112S–1.68mS (10.2039mΩ–	126.00144S-2.16 (7.93641mΩ-
			2083.33Ω)	1388.88Ω)	1041.66Ω)	833.333Ω)	1388.88Ω)	833.333Ω)	595.238Ω)	462.963Ω)
		275	2.800032S-48µS	4.200048S-72µS	5.600064S-96µS	7.00008S-120µS	20000	62000000	21000.001	
		L	(357.138mΩ-	(238.092mΩ-	(178.569mΩ-	(142.855mΩ-	N/A	N/A	N/A	N/A
63.56 325		9	20.8333kΩ)	13.8888kΩ)	10.4166kΩ)	8.33333kΩ)	201	. 3	- 93	
Accuracy of Setting	H,M	-	±(0.5 % of set" + 0.5			1900-1900	33. 335963134	<u> </u>		
Resolution	H,M	,L	4.8mS 480μS 48μS	7.2mS 720µS 72µS	9.6mS 960µS 96µS	12mS 1.2mS 120μS	7.2mS 720µS -	12mS 1.2mS -	16.8mS 1.68mS -	21.6mS 2.16mS -
CONSTANT VOLTA	GE MOI							W 20070 W 1	W 300 ME 30	3/2 ///2
Operating Range	Range	Н	1.5V-150V							
5	- 5-	L	1.5V-15V							
Accuracy of Setting	H,l		±(0.1 % of set + 0.1 %	6 of f.s)						
Resolution	H,l		10mV/1mV							
CONSTANT POWER	MODE					- 1				
Operating Range		Н	210W-2100W	315W-3150W	420W-4200W	525W-5250W	315W-3150W	525W-5250W	735W-7350W	945W-9450W
	Range	М	21W-210W	31.5W-315W	42W-420W	52.5W-525W	31.5W-315W	52.5W-525W	93.5W-735W	94.5W-945W
		L	2.1W-21W	3.15W-31.5W	4.2W-42W	5.25W-52.5W	N/A	N/A	N/A	N/A
Accuracy of Setting	H,M	,L	±(0.6 % of set + 1.4 9	6 of f.s) + Vin x Vin	(500/N ⁺¹⁰ MΩ): alon	e operation specifica	tions	100		
Resolution	H,M		200mW 20mW 2mW					500mW 50mW -	700mW 70mW -	900mW 90mW -
PARALLEL Mode										
Capacity			- 1	-	-	-	-	-:	-:	(50)
SLEW RATE										
Operation Mode			CC, CR	CC, CR	CC, CR	CC, CR	CC, CR	CC, CR	CC, CR	CC, CR
Setting Range		Н	32mA/μs-16A/μs	48mA/μs-16A/μs	64mA/μs~16A/μs	80mA/μs-16A/μs	48mA/μs-16A/μs	80mA/μs-16A/μs	112mA/μs~16A/μs	144mA/μs~16A/
(CC mode)	Range	$\overline{}$	3.2mA/µs-1.6A/µs	4.8mA/μs-1.6A/μs	6.4mA/μs-1.6A/μs		4.8mA/μs-1.6A/μs	8mA/μs-1.6A/μs	11.2mA/µs~1.6A/µs	
(cc mode)		L	320μA/μs-160mA/μs	480μA/μs-160mA/μs		800μA/μs-160mA/μs		N/A	N/A	N/A
C-11: D		н	3.2mA/μs-1.6A/μs	4.8mA/μs-1.6A/μs	6.4mA/μs-1.6A/μs		4.8mA/μs-1.6A/μs	8mA/us-1.6A/us	11.2mA/µs-1.6A/µs	14.4mA/us-1.6A/
Setting Range	Range	$\overline{}$								
(CR Mode)	Kunge	L	32μA/μs–16mA/μs	48μA/μs-16mA/μs				N/A	N/A	N/A
Accuracy of Setting	H,M		±(10 % of set" + 5μs)		- 1- 11-		.,,.,	14.1	,	
Resolution	,	,-	12mA	18mA	24mA	30mA	18mA	30mA	42mA	54mA
(Setting Range)			1.6A/μs~16A/μs	1.6A/μs~16A/μs	1.6A/μs~16A/μs	1.6A/μs~16A/μs	1.6A/µs~16A/µs	1.6A/μs~16A/μs	1.6A/μs~16A/μs	1.6A/μs~16A/μs
(1.2mA 160mA/μs~1.6A/μs	1.8mA 160mA/μs~1.6A/μs	2.4mA 160mA/μs~1.6A/μs	3mA 160mA/μs~1.6A/μs	1.8mA 160mA/μs~1.6A/μs	3mA 160mA/μs~1.6A/μs	4.2mA 160mA/μs~1.6A/μs	5.4mA 160mA/μs~1.6A/μ
			120μA	180uA	240uA	300нА	180иА	300uA	420µA	540uA
			16mA/μs~160mA/μs	16mA/μs~160mA/μs		16mA/μs~160mA/μs	16mA/μs~160mA/μs	16mA/μs~160mA/μs	16mA/μs~160mA/μs	16mA/μs~160mA/
			12μA 1.6mA/μs~16mA/μs	18μA 1.6mA/μs~16mA/μs	24μA 1.6mA/μs~16mA/μs	30μA 1.6mA/μs~16mA/μs	18μA 1.6mA/μs~16mA/μs	30μA 1.6mA/μs~16mA/μs	42μA 1.6mA/μs~16mA/μs	54μA 1.6mA/μs~16mA/ι
			1.2μΑ	1.8μΑ	2.4μΑ	3μΑ	1.8µA	3μΑ	4.2μΑ	5.4µA
			160μA/μs~1.6mA/μs	160μA/μs~1.6mA/μs	160μA/μs~1.6mA/μs	160μA/μs~1.6mA/μs 300nA	160μA/μs~1.6mA/μs	160μA/μs~1.6mA/μs	160μA/μs~1.6mA/μs	160μA/μs~1.6mA/
			120nA 16μA/μs~160μA/μs	180nA 16μA/μs~160μA/μs	240nA 16μA/μs~160μA/μs	300nA 16μA/μs~160μA/μs	N/A	N/A	N/A	N/A
METER										
Voltmeter	Accura	cv	±(0.1 % of rdg + 0.1 9	% offs)						
Ammeter	Accura		±(0.2 % of rdg + 0.3 9							
DYNAMIC MODE		-/	-(-12 /0 or lug + 0.3 /							
			CC and CR							
Operation Made			0.025ms-10ms/Res :	1us : 1ms-30s/Rec ·	1ms					
	I		1μs/1ms ± 100ppm	, sespines.	90,000 E9					
T1 & T2			32mA/μs-16A/μs	48mA/μs-16A/μs	64mA/μs-16A/μs	80mA/μs-16A/μs	48mA/μs-16A/μs	80mA/μs16A/μs	112mA/μs-16A/μs	144mA/us_16A/
T1 & T2 Accuracy		P .	251110/ µ3-10M/ µ3		**			**		
T1 & T2 Accuracy Slew Rate		н	2.2mA/ 2.5-44	A Roch Long T CAL	o.ema/us~1.bA/us	omA/μS-1.bA/μS	4.omA/µs-1.6A/µs		11.2mA/μs–1.6A/μs	
T1 & T2 Accuracy Slew Rate	Range	-	3.2mA/μs–1.6mA/μs			***			N/A	N/A
T1 & T2 Accuracy Slew Rate	Range	-	3.2mA/μs-1.6mA/μs 320μA/μs-160mA/μs		640μA/μs-160mA/μs	800μA/μs-160mA/μs	N/A	N/A	IN/A	0.000
T1 & T2 Accuracy Slew Rate (CC Mode)	Range	-		480μA/μs-160mA/μs			N/A 4.8mA/μs–1.6A/μs		11.2mA/µs-1.6A/µs	14.4mA/μs-1.6A
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate		M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs	8mA/μs-1.6A/μs	4.8mA/μs-1.6A/μs	8mA/μs-1.6A/μs	11.2mA/μs-1.6A/μs	
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs	8mA/μs-1.6A/μs 800μA/μs-160mA/μs	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs	8mA/μs-1.6A/μs 800μA/μs-160mA/μs	11.2mA/µs—1.6A/µs 1.12mA/µs—160mA/µs	1.44mA/µs-160mA
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode)		M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A	11.2mA/µs—1.6A/µs 1.12mA/µs—160mA/µs N/A	1.44mA/μs-160mA N/A
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode)	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs	8mA/μs-1.6A/μs 800μA/μs-160mA/μs	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs	8mA/μs-1.6A/μs 800μA/μs-160mA/μs	11.2mA/µs—1.6A/µs 1.12mA/µs—160mA/µs	1.44mA/µs-160mA
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S.	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S.	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S.	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S.	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S.	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S.	11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S.	1.44mA/μs~160mA N/A
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S. Overvoltage protect	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S.	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S.	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S.	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S.	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S.	11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S.	1.44mA/μs~160m/ N/A
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S.	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S.	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S.	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S.	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S.	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S.	11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S.	1.44mA/μs~160m/ N/A
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S. Overvoltage protect	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S. tion(OVP), Overcus	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S. rrent protection (Odder connection protection protection protection protection protection protection protection protection protection prote	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S.	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S.	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S.	11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S.	1.44mA/μs-160mA N/A
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN Functions GENERAL	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S. Overvoltage protect Undervoltage protect	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S. tion(OVP), Overcus ection(UVP), Revers	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S. rrent protection (Octoor connection protection prot	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S. CP), Overpower procection (REV)	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S. otection(OPP), Ov	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S. erheat protection (11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S.	1.44mA/μs-160mA N/A ±0.4%F.S.
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN Functions GENERAL Input Range Power(Max.)	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S. Overvoltage protect Undervoltage protect 90VAC-132VAC/180V 380VA	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S. tion (OVP), Overcus ction (UVP), Revers (AC-250VAC Single-p	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S. rrent protection (Octoor connection protection prot	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S.	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S.	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S.	11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S.	1.44mA/μs-160mA N/A
Operation Mode T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN Functions GENERAL Input Range Power(Max.) Interface	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S. Overvoltage protect Undervoltage protect Undervoltage protect Undervoltage protect Undervoltage protect	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S. tion(OVP), Overcustion(UVP), Revers (AC-250VAC Single-p 570VA control (Standard); G	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S. rrent protection (Outline connection protection pro	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S. CP), Overpower procection (REV)	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S. otection(OPP), Ov	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S. erheat protection (11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S. OHP),	1.44mA/μs-160mA N/A ±0.4%F.S.
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN Functions GENERAL Input Range Power(Max.)	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S. Overvoltage protect Undervoltage protect Undervoltage protect Undervoltage protect Undervoltage protect Undervoltage protect 90VAC-132VAC/180V 380VA USB/RS232/Analog C 598(W)x877(H)x	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S. tion(OVP), Overcus ction(UVP), Revers AC-250VAC Single-p 570VA control (Standard); G 598(W)x877(H)x	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S. rrent protection (Ode connection protection protect	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S. CP), Overpower procection (REV) 950VA	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S. otection(OPP), Ov	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S. erheat protection (650VA	11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S. OHP), 880VA	1.44mA/μs-160mA N/A ±0.4%F.S.
T1 & T2 Accuracy Slew Rate (CC Mode) Slew Rate (CR Mode) Current Accuracy PROTECTION FUN Functions GENERAL Input Range Power(Max.) Interface	Range	M L H	320μA/μs-160mA/μs 3.2mA/μs-1.6A/μs 320μA/μs-160mA/μs 32μA/μs-16mA/μs ±0.4%F.S. Overvoltage protect Undervoltage protect Undervoltage protect Undervoltage protect Undervoltage protect	480μA/μs-160mA/μs 4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs 48μA/μs-16mA/μs ±0.4%F.S. tion(OVP), Overcustion(UVP), Revers (AC-250VAC Single-p 570VA control (Standard); G	640μA/μs-160mA/μs 6.4mA/μs-1.6A/μs 640μA/μs-160mA/μs 64μA/μs-16mA/μs ±0.4%F.S. rrent protection (Outline connection protection pro	8mA/μs-1.6A/μs 800μA/μs-160mA/μs 80μA/μs-16mA/μs ±0.4%F.S. CP), Overpower procection (REV)	4.8mA/μs-1.6A/μs 480μA/μs-160mA/μs N/A ±0.4%F.S. otection(OPP), Ov	8mA/μs-1.6A/μs 800μA/μs-160mA/μs N/A ±0.4%F.S. erheat protection (11.2mA/µs-1.6A/µs 1.12mA/µs-160mA/µs N/A ±0.4%F.S. OHP),	1.44mA/µs-160mA N/A ±0.4%F.S.

SPECIFICATIONS						
Model			PEL-3021H	PEL-3041H	PEL-3111H	PEL-3211H
Voltage Current Power Input Resistance Min. Operating Voltage(DC)(Typ.)			PEL-3021H 0V-800V 8,75A 175W 3.24MΩ 5V@8,75A 2.5V@4,375A	0V-800V 17,5A 350W 3.24MΩ 5V@17,5A 2.5V@8,75A	0V-800V 52,5A 1050W 3.24MΩ 5V@52,5A 2.5V@26,25A	0V-800V 105A 2100W 3.24MΩ 5V@105A 2.5V@52,5A
CONSTANT CURRENT MOD			0 0 75 10 0 75 10 0 7 5 1	0 17 5	0 52 54 0 5 254 0 5254	0 1054 0 1054 0 1054
Operating Range Accuracy of Setting	H,M,	L	±(0.2 % of set + 0.1 % of f.s*)		0-52.5A 0-5.25A 0-525mA	±(1.2% of set+1.1% of f.s)
Accuracy of Setting	L		±(0.2 % of set + 0.1 % of f.s")			N/A
Accuracy of Setting(Parallel)			±(1.2% of set +1.1% of f.s.")	,		N/A
Resolution	Н,М,	L	300μΑ 30μΑ 3μΑ	0.6mA 60µA 6µA	2mA 200µA 20µA	4mA 400μA 40μA
CR MODE	I		1 755 10 5	3.55.50.5	1055 100 5	216 260 6
Operating Range		н	1.75S-30μS (571mΩ-33.3kΩ)	3.5S-60μS (285mΩ-16.6kΩ)	10.5S-180μS (95.2mΩ-5.55kΩ)	21S-360μS (47.6mΩ-2.777kΩ)
	Range	<u> </u>	175mS-3μS	350mS-6μS	1.05S-18μS	2.1S-36µS
	Range	М	(5.71Ω-333kΩ)	(2.85Ω–166kΩ)	(952mΩ-55.5kΩ)	(476mΩ–27.77kΩ)
		L	17.5mS-0.3μS	35mS-0.6μS	105mS-1.8μS	210mS-3.6µS
Accuracy of Setting	н,м		(57.1Ω~3.33MΩ) ±(0.5% set + 0.5% f.S") + Vin	(28.5Ω~1.66MΩ)	(9.52Ω–555kΩ)	(4.762Ω - 277.7kΩ) ± $(1.2\% \text{ of set } +1.1\% \text{ of f.s})TYP$
Accuracy of Setting Accuracy of Setting	H,M		±(0.5% set + 0.5% f.S') + Vin			±(1.2% of set +1.1% of f.s)11P
Parallel		-	±(1.2 % of set + 1.1 % of f.s')	12.241122		N/A
Resolution	Н,М,	,L	30μS 3μS 0.3μS	60μS 6μS 0.6μS	180μS 18μS 1.8μS	N/A
CONSTANT VOLTAGE MOD	E				att the Manager of Alice of	
Operating Range	Range	Н	5V-800V			5V-800V
		L	5V-80V			5V-80V
Accuracy of Setting	Range Parallel	H,L TYP	±(0.2% of set + 0.2% of f.s) ±(0.2% of set + 0.2% of f.s)			±(0.2% of set + 0.2% of f.s) ±(0.2% of set + 0.2% of f.s)
Resolution	Range	H,L				1(0.2% of set + 0.2% of f.s) N/A
CONSTANT POWER MODE		,				
Operating Range	Range	M L	17.5W-175W 1.75W-17.5W 0.175W-1.75W	35W-350W 3.5W-35W 0.35W-3.5W	105W-1050W 10.5W-105W 1.05W-10.5W	210W-2100W 21W-210W 2.1W-21W
Accuracy of Setting	н,м		±(0.6 % of set + 1.4 % of f.s)+	+Vin/3.24MΩ	563 595 596 599 599 699	±(5 % of f.s)TYP
Resolution	Н,М,	,L	10mW 1mW 0.1mW	10mW 1mW 0.1mW	100mW 10mW 1mW	N/A
PARALLEL Mode	1	-	L AZEW			
Capacity			875W	1750W	5250W	PEL-3111H with 4 booster units : Max 9.45kW
SLEW RATE		3				
Operation Mode		T	CC, CR	CC, CR	CC, CR	N/A
Setting Range (CC mode)	Range	M L	0.14 x N ^{*10} mA/μs~140mA/μs 0.014 x N ^{*10} mA/μs~14mA/μs 1.4 x N ^{*10} μA/μs~1400μA/μs	0.280 x N [™] mA/μs~280.0mA/μs 0.0280 x N [™] mA/μs~28.00mA/μs 2.80 x N [™] μA/μs~2800μA/μs	0.840 x N ^{*1} mA/μs~840mA/μs 0.0840 x N ^{*1} mA/μs~84.00mA/μs 0.00840 x N ^{*1} mA/μs~8.400mA/μs	N/A
Setting Range (CR Mode)	Range	H M L	0.014 x N ^{***} mA/μs~14mA/μs 0.0014 x N ^{***} mA/μs~1.4mA/μs 0.14 x N ^{***} μA/μs~140μA/μs	0.0280 x N mA/μs~28.00mA/μs 0.00280 x N mA/μs~2.800mA/μs 0.280 x N μA/μs~280.0μA/μs	0.0840 x N ^{***} mA/μs~84.00mA/μs 0.00840 x N ^{***} mA/μs~8.400mA/μs 0.000840 x N ^{***} mA/μs~0.8400mA/μs	N/A
Accuracy of Setting	Н,М,І		±(10 % of set + 25μs)	0.280 x N μΑ/μς~200.0μΑ/μς	0.000640 X N	N/A
Resolution (Setting Range)			50 x N ^{*10} μA 14 x N ^{*10} mA/μs~140mA/μs 5 x N ^{*10} μA 1.4 x N ^{*10} mA/μs~14 x N ^{*10} mA/μs 0.5 x N ^{*10} μA 140 x N ^{*10} μA/μs~1.4 x N ^{*10} mA/μs 50 x N ^{*10} nA 14 x N ^{*10} μA/μs~140 x N ^{*10} μA/μs 5 x N ^{*10} nA 1.4 x N ^{*10} μA/μs~14 x N ^{*10} μA/μs 0.5 x N ^{*10} nA 0.14 x N ^{*10} μA/μs~1.4 x N ^{*10} μA/μs	0.1 x N ⁻¹¹ μA 28 x N ⁻¹⁰ μA/μs~280 x N ⁻¹⁰ μA/μs 10 x N ⁻¹⁰ nA 2.8 x N ⁻¹¹ μA/μs~28 x N ⁻¹⁰ μA/μs 1 x N ⁻¹⁰ nA	300 x N ⁻¹¹ µA 84 x N ⁻¹¹ mA/µs~840mA/µs 30 x N ⁻¹¹ µA 8.4 x N ⁻¹¹ mA/µs~84 x N ⁻¹¹ mA/µs 3 x N ⁻¹¹ µA 840 x N ⁻¹¹ µA/µs~8.4 x N ⁻¹¹ mA/µs 0.3 x N ⁻¹¹ µA 84 x N ⁻¹¹ µA/µs~840 x N ⁻¹¹ µA/µs 30 x N ⁻¹¹ µA 8.4 x N ⁻¹¹ µA/µs~84 x N ⁻¹¹ µA/µs 3 x N ⁻¹¹ nA 0.84 x N ⁻¹¹ µA/µs~8.4 x N ⁻¹¹ µA/µs	N/A
METER						
Voltmeter Ammeter Ammeter(Parallel Operation)	Accuracy Accuracy Accuracy	,	±(0.1 % of rdg + 0.1 % of f.s) ±(0.2 % of rdg + 0.3 % of f.s) ±(1.2% of rdg +1.1% of f.s.)			±(0.1 % of rdg + 0.1 % of f.s)TYP N/A ±(1.2% of rdg +1.1% of f.s.)TYP
DYNAMIC MODE			CC CD CD			NI/A
Operation Mode T1 & T2 Accuracy			CC, CR, CP 0.025ms–10ms/Res : 1μs ; 10 ± 100ppm of setting	Oms-30s/Res : 1ms		N/A N/A ± 100ppm of setting
Slew Rate (CC Mode)	Range	M	0.140mA/μs-140.0mA/μs 0.014mA/μs-14.00mA/μs 1.400μA/μs-1400.0μA/μs	0.280mA/μs-280.0mA/μs 0.028mA/μs-28.00mA/μs 2.800μA/μs-2800μA/μs	0.840mA/μs-840.0mA/μs 0.084mA/μs-84.00mA/μs 0.0084mA/μs-8.400mA/μs	N/A
Slew Rate (CR Mode)	Range	H M L	0.014mA/μs-14.000mA/μs 0.0014mA/μs-1.4000mA/μs 0.1400μA/μs-140.00μA/μs	0.028mA/μs-28.00mA/μs 2.8μA/μs-2.800mA/μs 0.280μA/μs-280.0μA/μs	0.084mA/μs-84.00mA/μs 0.0084mA/μs-8.400mA/μs 0.00084mA/μs-0.8400mA/μs	N/A
30			±0.4%F.S.	±0.4%F.S.	±0.4%F.S.	±0.4%F.S.
Current Accuracy			20.4/01.3.			
Current Accuracy PROTECTION FUNCTION Functions			Overvoltage protection (OVP),	, Overcurrent protection(OCP), (), Reverse connection protection	Overpower protection(OPP), Over n(REV)	rheat protection (OHP),
PROTECTION FUNCTION Functions GENERAL			Overvoltage protection (OVP), Undervoltage protection (UVP)), Reverse connection protection		rheat protection (OHP),
PROTECTION FUNCTION Functions GENERAL Input Range			Overvoltage protection (OVP), Undervoltage protection (UVP) 90VAC-132VAC/180VAC-250VAC), Reverse connection protection Single-phase; 47Hz-63Hz	n(REV)	
PROTECTION FUNCTION Functions GENERAL			Overvoltage protection (OVP), Undervoltage protection (UVP)), Reverse connection protection C Single-phase; 47Hz-63Hz 110VA		rheat protection (OHP),
PROTECTION FUNCTION Functions GENERAL Input Range Power(Max.)			Overvoltage protection (OVP), Undervoltage protection (UVP) 90VAC-132VAC/180VAC-250VAC), Reverse connection protection Single-phase; 47Hz-63Hz 110VA ; Opt : GPIB/LAN	n(REV)	

SPECIFICATION	ONS									
Model			PEL-3212H	PEL-3323H	PEL-3424H	PEL-3535H	PEL-3322H	PEL-3533H	PEL-3744H	PEL-39551
Voltage			0V-800V	0V-800V	0V-800V	0V-800V	0V-800V	0V-800V	0V-800V	0V-800V
Current Power			0-105A 2100W	0-157.5A 3150W	0-210A 4200W	0-262.5A 5250W	0-157.5A 3150W	0-262.5A 5250W	0-367.5A 7350W	0-472.5A 9450W
Input Resistance			1.62ΜΩ	1.08ΜΩ	0.81ΜΩ	0.648ΜΩ	3.24MΩ	3.24MΩ	3.24ΜΩ	3.24MΩ
Min. Operating Voltage(DC)(Typ.)			5V@105A	5V@157.5A	5V@210A	5V@262.5A	5V@157.5A	5V@262.5A	5V@367.5A	5V@472.5A
CONSTANT CURRE		DF	2.5V@52.5A	2.5V@78.75A	2.5V@105A	2.5V@131.25A	2.5V@78.75A	2.5V@131.25A	2.5V@183.75A	2.5V@236.25
Operating Range	н,м	$\overline{}$	0~105A 0~10.5A 0~1.05A	0~157.5A 0~15.75A 0~1.575A	0~210A 0~21A 0~2.1A	0-262 5A 0-26.25A 0-2.625A	0-157.5A 0-15.75A 0-1.575A	0-262 SA 0-26.25A 0-2.625A	0-367.5A 0-36.75A 0-3.675A	0-472.5A 0-47.25A 0-4
Accuracy of Setting	Н,М	-	±(0.2 % of set + 0.1 9							
Resolution	Н,М	-	4mA 0.4mA 0.04mA	1 1		10mA 1mA 0.1mA	6mA 0.6mA 0.06mA	10mA 1mA 0.1mA	14mA 1.4mA 0.14mA	18mA 1.8mA 0.1
CR MODE	,	,- ,								
Operating Range		[]	21S-360μS	31.5S-540µS	42S-0.72mS	52.5S-0.9mS	31.5S-540µS	52.5S-0.9mS	73.5S-1.26mS	94.5S-1.62m
		н	(47.619mΩ– 2.778kΩ)	(31.746mΩ- 1.85185kΩ)	(23.8095mΩ– 1.3889kΩ)	(19.0476mΩ- 1.11111kΩ)	(31.746mΩ– 1.85185kΩ)	(19.0476mΩ~ 1.11111kΩ)	(13.6054mΩ~ 793.651Ω)	(10.582mΩ- 617.284Ω)
	100000		2.1S-36µS	3.15S-54µS	4.2S-72uS	5.25S-90µS	3.15S-54µS	5.25S-90µS	7.35S-126µS	9.45S-162µS
	Range	М	(476.19mΩ- 27.778kΩ)	(317.46mΩ-	(238.095mΩ-	(190.476mΩ-	(317.46mΩ-	(190.476mΩ-	(136.054mΩ– 7.93651kΩ)	(105.82mΩ~
		Н	21.778KΩ) 210mS–3.6μS	18.5185kΩ) 315mS–5.4μS	13.8889kΩ)	11.1111kΩ)	18.5185kΩ)	11.1111kΩ)	7.93651KL2) 735mS-12.6µS	6.17284kΩ) 945mS–16.2μ
		L	(4.7619Ω-	(3.1746Ω-	420mS-7.2μS (2.38095Ω-	525mS-9μS (1.90476Ω-	315mS–5.4μS (3.1746Ω–	525mS-9μS (1.90476Ω-	(1.36054Ω-	(1.0582Ω-
4			277.78kΩ)	`185.185kΩ)	138.888kΩ)	`111.111kΩ)	`185.185kΩ)	`111.111kΩ)	`79.365kΩ)	`61.7284kΩ)
Accuracy of Setting	H,M	_	±(0.5 % of set" + 0.5							
Resolution		_	360μS 36μS 3.6μS	540μS 54μS 5.4μS	720μS 72μS 7.2μS	900μS 90μS 9μS	540μS 54μS 5.4μS	900μS 90μS 9μS	1.26mS 126µS 12.6µS	1.62mS 162µS 16.
CONSTANT VOLTAG	GE MOL	H	5V-800V							
Operating Range	Range	\vdash								
	L		5V-80V							
Accuracy of Setting	Range	$\overline{}$	1	6 of f.s)						
Resolution	Range	_	20mV/2mV							
CONSTANT POWER	MODE	:	21001 21001	21500 215000	420V/ 4200V/	FORW FORMW	21514/ 215044	FORWAY FORMAN	73519/ 735019/	DAESNI DAEONII
Operating Range	Pango	-	210W-2100W 21W-210W	315W-3150W 31.5W-315W	420W-4200W 42W-420W	525W-5250W 52.5W-525W	315W-3150W 31.5W-315W	525W-5250W 52.5W-525W	735W-7350W 73.5W-735W	945W-9450W 94.5W-945W
	Range	L	2.1W-21W	3.15W-31.5W	4.2W-42W	5.25W-52.5W	3.15W-31.5W	5.25W-52.5W	7.35W-73.5W	9.45W-94.5W
Accuracy of Setting	Н,М	$\overline{}$	±(0.6 % of set + 1.4 9					3.23 11 32.3 11	7.55 11 75.5 11	5.1511
Resolution	,		200mW 20mW 2mW					500mW 50mW 5mW	700mW 70mW 7mW	900mW 90mW 9s
PARALLEL Mode			20011W 2011W 2111W	JOONIW JOHN JOHN	4001114 401114 41114	JOURN JOHN JOHN	Jooniw Joniw Janiw	South South Sills	700111 70111 71111	Journa Jonna J
Capacity			-	(-)	-	-	-	(1-2)	-	
SLEW RATE										
Operation Mode			CC, CR	CC, CR	CC, CR	CC, CR	CC, CR	CC, CR	CC, CR	CC, CR
Setting Range	_	Н		2.52mA/µs~839.7mA/µs	, , , , , , , , , , , , , , , , , , , ,	4.2mA/μs-840mA/μs	2.52mA/µs~839.70mA/µs	4.2mA/μs~840mA/μs	5.88mA/μs~840mA/μs	8.5
(CC mode)	Range	-	168μA/μs~84mA/μs 16.8μA/μs~8.4mA/μs	252µA/µs~83.97mA/µs 25.2µA/µs~8.397mA/µs		420μA/μs~84mA/μs 42μA/μs~8.4mA/μs	252µA/µs-83.97mA/µs 25.2µA/µs-8.397mA/µs	420μA/μs~84mA/μs 42μA/μs~8.4mA/μs	588μA/μs~84mA/μs	756µA/µs~83.97mA
		H	168μA/μs~84mA/μs	252µA/µs~83.97mA/µs		420μA/μs-84mA/μs	252µA/µs~83.97mA/µs		58.8μA/μs~8.4mA/μs 588μA/μs~84mA/μs	75.6µA/µs~8.397mA 756µA/µs~83.97mA
Setting Range (CR Mode) R:	Range	-		25.2μA/μs~8.397mA/μs		42μA/μs~8.4mA/μs	25.2µA/µs~8.397mA/µs			75.6µA/µs~8.397mA
(CK MODE)	gc	1		2.52µA/µs-839.7µA/µs		4.2μA/μs~840μA/μs	2.52µA/µs-839.7µA/µs		5.88µA/µs~840µA/µs	
Accuracy of Setting*	Н,М	,L	±(10 % of set + 25μs)		and the same the	out the contribution				111111111111111111111111111111111111111
Resolution			600µA	900μΑ	1.2mA	1.5mA	900μΑ	1.5mA	2.1mA	2.7mA
(Setting Range)			168mA/μs~840mA/μs 60μA	252mA/μs~842.4mA/μs 90μA	336mA/μs~840mA/μs 120uA	420mA/μs~840mA/μs 150μA	252mA/μs~842.4mA/μs 90uA	420mA/μs~840mA/μs 150μA	588mA/μs~840mA/μs 210μA	756mA/µs~842.4mA 270uA
55 DEC 550					33.6mA/µs~336mA/µs		25.2mA/µs~252mA/µs	42mA/μs~420mA/μs	58.8mA/μs~588mA/μs	
			6μA 1.68mA/μs~16.8mA/μs	9μA 2 52mA/us~25 2mA/us	12μA 3.36mA/μs~33.6mA/μs	15μA 4.2mA/us-42mA/us	9μA 2.52mA/μs~25.2mA/μs	15μA 4.2mA/μs~42mA/μs	21μA 5.88mA/μs~58.8mA/μs	27μA 7 56mA/us~75 6mA/
			600nA	900nA	1.2μΑ	1.5μΑ	900nA	1.5μΑ	2.1μΑ	2.7uA
			0.168mA/μs~1.68mA/μs 60nA	0.252mA/μs~2.52mA/μs 90nA	0.336A/μs~3.36mA/μs 120nA	0.42mA/μs~4.2mA/μs 150nA	0.252mA/μs~2.52mA/μs 90nA	0.42mA/μs~4.2mA/μs 150nA	0.588mA/μs~5.88mA/μs 210nA	0.756mA/μs~7.56mA 270nA
			0.0168mA/μs~0.168mA/μs	0.0252mA/μs~0.252mA/μs	0.0336mA/μs-0.336mA/μs	0.042mA/μs~0.42mA/μs	0.0252mA/μs~0.252mA/μs	0.042mA/µs~0.42mA/µs	0.0588mA/μs~0.588mA/μs	0.0756mA/µs~0.756m/
			6nA 0.00168mA/μs~0.0168mA/μs	9nA 0.00252mA/µs~0.0252mA/µs	12nA 0.00336mA/µs~0.0336mA/µ	15nA s0.0042mA/µs~0.042mA/µs	9nA 0.00252mA/µs~0.0252mA/µs	15nA 0.0042mA/µs~0.042mA/µs	21 nA 0.00588mA/µs~0.0588mA/µs	27nA 0.00756mA/µs~0.0756m
METER		_						74-11		
Voltmeter	Accura	,	±(0.1 % of rdg + 0.1 5	% of f.s)						
Ammeter DYNAMIC MODE	Accura	cy	±(1.2 % of rdg + 1.1 5	% of f.s)						
Operation Mode			CC and CR							
T1 & T2			0.025ms-10ms/Res :	$1\mu s$; $10ms-30s/Res$: 1ms					
Accuracy		\vdash	1μs/1ms ± 100ppm							
Slew Rate		н	1.68mA/μs~840mA/μs	100 (100)	2552 2752	4.2mA/μs-840mA/μs	2.52mA/µs-839.7mA/µs	75	5.88mA/μs-840mA/μs	7.56mA/µs~839.7m/
(CC Mode)	Range	М	168μA/μs~84mA/μs	252μA/μs~83.97mA/μs	336μA/μs~84mA/μs	420μA/μs~84mA/μs	252μA/μs~83.97mA/μs	420μA/μs~84mA/μs	588μA/μs~84mA/μs	756µA/µs~83.97mA
		L	16.8μA/μs~8.4mA/μs	25.2µA/µs~8.397mA/µs	33.6μA/μs~8.4mA/μs	42μA/μs~8.4mA/μs	25.2μA/μs~8.397mA/μs	42μA/μs~8.4mA/μs	58.8μA/μs~8.4mA/μs	75.6µA/µs~8.397mA
		н	168μA/μs~8.4mA/μs	252μA/μs~83.97mA/μs	336μA/μs~84mA/μs	420μA/μs-84mA/μs	252μA/μs~83.97mA/μs	420μA/μs-84mA/μs	588μA/μs~84mA/μs	756μA/μs-83.97m/
Slew Rate		М	16.8μA/μs~8.4mA/μs	25.2μA/μs~8.397mA/μs	33.6μA/μs~8.4mA/μs	42μA/μs~8.4mA/μs	25.2μA/μs~8.397mA/μs	42μA/μs~8.4mA/μs	58.8μA/μs~8.4mA/μs	75.6µA/µs~8.397m
W. C.	Range		1.68μΑ/μς~840μΑ/μς	2.52μΑ/μς~839.7μΑ/μς	3.36µA/µs~840µA/µs	4.2μΑ/μς~840μΑ/μς	2.52μΑ/μς~839.7μΑ/μς	4.2μΑ/μς~840μΑ/μς	5.88μΑ/μς~840μΑ/μς	7.56µA/µs~839.7µA
W. C.	Range	L		±0.4%F.S.	±0.4%F.S.	±0.4%F.S.	±0.4%F.S.	±0.4%F.S.	±0.4%F.S.	±0.4%F.S.
(CR Mode)	Range	L	±0.4%F.S.				- E	7	10	
7 (2-3) (23) (31)		L	±0.4%F.S.		(A)					
(CR Mode) Current Accuracy		L	Overvoltage protec	tion(OVP), Overcus			otection(OPP), Ov	erheat protection(OHP),	
(CR Mode) Current Accuracy PROTECTION FUN Functions		L		tion(OVP), Overcus			otection(OPP), Ov	erheat protection(OHP),	
(CR Mode) Current Accuracy PROTECTION FUNCTIONS GENERAL			Overvoltage protec Undervoltage prote	tion(OVP), Overcus ection(UVP), Revers	e connection prote		otection(OPP), Ov	erheat protection(OHP),	
(CR Mode) Current Accuracy PROTECTION FUN Functions GENERAL Input Range		L	Overvoltage protec Undervoltage prote 90VAC-132VAC/180V	tion(OVP), Overcus ection(UVP), Revers /AC-250VAC Single-p	e connection proto hase; 47Hz-63Hz	ection(REV)			p	1110VA
(CR Mode) Current Accuracy PROTECTION FUNCTIONS GENERAL Input Range Power(Max.)			Overvoltage protec Undervoltage prote	tion(OVP), Overcus ection(UVP), Revers /AC-250VAC Single-p 570VA	hase; 47Hz-63Hz		otection(OPP), Ov	erheat protection(OHP), 880VA	1110VA
(CR Mode) Current Accuracy PROTECTION FUN Functions GENERAL Input Range	CTION		Overvoltage protec Undervoltage prote 90VAC-132VAC/180V 380VA	tion(OVP), Overcus ection(UVP), Revers /AC-250VAC Single-p 570VA	hase; 47Hz-63Hz	ection(REV)			p	
Current Accuracy PROTECTION FUNCTURE Functions GENERAL Input Range Power(Max.) Interface	CTION		Overvoltage protec Undervoltage prote 90VAC-132VAC/180V 380VA Std: USB/RS232/Ana	tion(OVP), Overcus ection(UVP), Revers /AC-250VAC Single-p 570VA llog Control; Opt.: G	hase; 47Hz-63Hz 760VA PIB/LAN	950VA	420VA	650VA	880VA	1110VA 598(W)x877(H): 706(D)mm; Approx. 149kg

ORDERING INFORMATION

PEL-3021 (150V/35A/175W) Single-Channel Programmable D.C. Electronic Load PEL-3041 (150V/70A/350W) Single-Channel Programmable D.C. Electronic Load PEL-3111 (150V/210A/1050W) Single-Channel Programmable D.C. Electronic Load PEL-3211 (150V/420A/2100W) 2100W Booster for PEL-3111 only PEL-3212 (150V/420A/2100W) Single-Channel Programmable D.C. Electronic Load PEL-3322 (150V/630A/3150W) Single-Channel Programmable D.C. Electronic Load PEL-3323 (150V/630A/3150W) Single-Channel Programmable D.C. Electronic Load PEL-3424 (150V/840A/4200W) Single-Channel Programmable D.C. Electronic Load PEL-3533 (150V/1050A/5250W) Single-Channel Programmable D.C. Electronic Load PEL-3535 (150V/1050A/5250W) Single-Channel Programmable D.C. Electronic Load PEL-3744 (150V/1470A/7350W) Single-Channel Programmable D.C. Electronic Load PEL-3745 (150V/1890A/9450W) Single-Channel Programmable D.C. Electronic Load PEL-3955 (150V/1890A/9450W) Single-Channel Programmable D.C. Electronic Load PEL-3955 (150V/1890A/9450W) Single-Channel Programmable D.C. Electronic Load

ACCESSORIES :

Quick Start Guide, CD (User Manual/Programming Manual), Power Cord

PEL-011 Load Input Terminal Cover PEL-012 Terminal Fittings Kits

PEL-3021H (800V/8.75A/175W) Single-Channel Programmable D.C. Electronic Load
PEL-3041H (800V/17.5A/350W) Single-Channel Programmable D.C. Electronic Load
PEL-3111H (800V/52.5A/1050W) Single-Channel Programmable D.C. Electronic Load
PEL-3211H (800V/105A/2100W) 2100W Booster for PEL-3111H only
PEL-3212H (800V/105A/2100W) Single-Channel Programmable D.C. Electronic Load
PEL-3322H (800V/157.5A/3150W) Single-Channel Programmable D.C. Electronic Load
PEL-3323H (800V/157.5A/3150W) Single-Channel Programmable D.C. Electronic Load
PEL-3424H (800V/210A/4200W) Single-Channel Programmable D.C. Electronic Load
PEL-3533H (800V/262.5A/5250W) Single-Channel Programmable D.C. Electronic Load
PEL-3535H (800V/262.5A/5250W) Single-Channel Programmable D.C. Electronic Load
PEL-3744H (800V/367.5A/7350W) Single-Channel Programmable D.C. Electronic Load
PEL-3955H (800V/472.5A/9450W) Single-Channel Programmable D.C. Electronic Load

GTL-255 Frame Link Cable 300mm Front Terminal Washers
PEL-013 Flexible Terminal Cover PEL-014 J1/J2 Protection Plug

OPTIONAL ACCESSORIES

CR123A 3V Lithium Battery for Clock.
GRA-413 Rack Mount Bracket for Booster PEL-3211(H) (EIA+JIS)
GRA-414-E Rack Mount Frame for PEL-3021(H), PEL-3041(H), PEL-3111(H)/E

GRA-414-E Rack Mount Frame for PEL-3021 (H), PEL-3041 (H), PEL-3111 (H)/EIA GTL-246 USB Cable Type A- Type B GRA-414-J Rack Mount Frame for PEL-3021 (H), PEL-3041 (H), PEL-3111 (H)/JIS PEL-010 Dust Filter

GTL-120 Test Lead (Max. 40A) GTL-248 GPIB Cable, 2.0m GTL-246 USB Cable Type A- Type

PEL-004 GPIB Option
PEL-005 Connect Cu Plate
PEL-006 Connect Cu Plate
PEL-007 Connect Cu Plate
PEL-007 Connect Cu Plate

FREE DOWNLOAD

PEL-3212(H)

Driver LabView Driver





PEL-3323(H)

PEL-3424(H)

PEL-3535(H)

GRA-413 Rack Mount Kit (EIA+JIS) For: PEL-3211(H)



GRA-414-J Rack Mount Kit (JIS) For: PEL-3021/3021H/3041/3041H/3111/3111H



GRA-414-E Rack Mount Kit (EIA)

For: PEL-3021/3021H/3041/3041H/3111/3111H





PEL-3031E



PEL-3032E



FEATURES

- * 0~150V(PEL-3031E)Min. Operating Voltage(dc): 1V at 60A, 0.5V at 30A 0~500V(PEL-3032E)Min. Operating Voltage(dc): 2.5V at 15A, 1.25V at 7.5A
- * 7 Operating Modes : CC, CV, CR, CP, CC+CV, CR+CV, CP+CV
- * Normal Sequence Function: Max Steps: 1000 steps/Step Time:1ms~999h 59min 59s(3599940 sec)Fast Sequence Function: Max Steps:1000 steps/Step Time:25us~600ms
- * Soft Start
- * BATT Test Automation:Max Test Time:999h: 59min 59s(3599940 sec):Max Test AH:9999.99Ah
- * OCP, OPP Test Automation
- * Max. Slew Rate: 2.5A/µs
- * Dynamic Mode
- * Protection: OVP, OCP, OPP, OTP, RVP, UVP
- * Remote Sense
- * Integrate Voltage, Current and Power Measurement Functions
- * External Voltage or Resistance Control
- * Rear Panel BNC, Trigger IN/OUT
- * Analog External Control
- * USB(Std.)/GPIB & LAN(Opt.)/RS-232 (Manufacturer Installed Only)

GW Instek launches new PEL-3000E series programmable single-channel electronic load. In the series, PEL-3031E provides 300W (1V~150V/60A) and PEL-3032E provides 300W (2.5V~500V/15A) current sink capability. Inherited from the PEL-3000 series, PEL-3000E has an easy-to-read LCD panel and user-friendly interface. This model features high speed and accurate measurement capability for electronic component, battery, portable charger and power products that require low to medium power consumption.

The PEL-3000E series is designed for current sink operation starting from 60mA and aims at measurement applications, including charger, adapter, various power supply equipment, and portable charger.

The PEL-3000E has seven operating modes. Among them, four basic operating modes are constant current, constant voltage, constant resistance, and constant power. Three other combined operating modes are constant current + constant voltage, constant resistance + constant voltage, constant power + constant voltage. Users can select operating modes based upon products' test requirements. For C.C. mode, electronic load will sink a constant current according to the set current value; for C.V. mode, electronic load will attempt to sink sufficient current to control the source voltage to the programmed value; for C.R. mode, electronic load will sink a current linearly proportional to input voltage according to the set resistance value; for C.P. mode, electronic load will initiate load power sinking operation (load voltage x load current) in accordance with the programmed power setting.

To meet the requirements of different test conditions, the Static function is to sink a constant current; the Dynamic function is to periodically switch between two sink conditions, and the Sequence function is to provide tests for more than two sink conditions. The sequence function can be divided into Normal Sequence and Fast Sequence. Normal Sequence is the most flexible mean of generating complex sequences that can facilitate users to establish a set of changing current sink conditions based upon different sinking conditions (CC, CR, CV or CP mode) and time(adjustable range: 1ms to 999h 59min 59s). Fast sequence allows time resolution of 25us to be set for the smallest step. Setting parameters for multiple steps can simulate consecutive current changes of various real load conditions. For instance, while using an electronic load to test a power-driven tool's power supply, we can first obtain waveforms by an oscilloscope and a current probe from the tool, and subsequently, use the obtained waveforms to edit simulated current waveforms, via electronic load's sequence function, to test the power-driven tool and to analyze its operational status. The Soft Start function allows users to determine the rise time of current sink that is to decide the required time to reach electronic load's set current, resistance or power value. Setting a proper rise time for Soft Start is effective to counter output voltage fluctuation caused by DUT's (power supply) transient output current. It is worth noting, General DC loads do not have the soft start function. When conducting high speed current sink operation, the inductance effect on the cable connecting electronic load and DUT will lead to transient voltage drop on electronic load's input terminal, therefore, that will result in Voltage Non-monotonic increase. PEL-3000E's soft start function not only allows output voltage to be Monotonic increase, but also prevents inrush current and surge voltage from happening on DUT. For instance, tests using a power supply, LED and a DC load (activate the soft start function) can prevent inrush current and surge voltage from causing damages on LED.

The built-in BATT Test Automation of PEL-3000E provides battery discharge applications with more flexible discharge stop setting as well as rise and fall Slew Rate for discharge current settings. OCP, OPP test Automation for DUT (ex. Power Supply), provide users with high resolution measurement values to verify DUT's activation point. Provide users with measurement results so as to help them determine whether DUT's actual over protection activation point meets the regulations. Other than that, PEL-3000E provides users with analog control terminal to control PEL-3000E from external voltage, external resistance and switch. Analog control terminal can also monitor electronic load's status and display protective alarms.

Model	PEL-3	031E	PEL-3	032E		
Power	300W	300W	300W	300W		
Range	Low	High	Low	High		
Voltage	0 - 150V	0 - 150V	0 - 500V	0 - 500V		
Current	0 - 6A	0 - 60A	0 - 1.5A	0 - 15A		
Min. Operating Voltage(dc)	1V 6A	1V ~ 60A	2.5V - 1.5A	2.5V - 15A		
STATIC MODE			12.5	0		
Constant Current Mode Range Setting Range Resolution Accuracy	0 – 6A 0 – 6.12A 0.2mA (T°1)±(0.1% of set +0.1% of FS)+ Vin/500kΩ (Full scale of High range)	0 – 60A 0 – 61.2A 2mA (T°1)±(0.1% of set +0.2% of FS)+ Vin/500kΩ (Full scale of High range)	0 - 1.5A 0 - 1.53A 0.05mA $(T^{\circ 1}) \pm (0.1\% \text{ of set}$ +0.1% of FS) + $Vin/500k\Omega$ (Full scale of High range)	0 – 15A 0 – 15.3A 0.5mA (T°1)±(0.1% of set +0.2% of FS)+ Vin/500kΩ (Full scale of High range		
Constant Resistance Mode			50 0000 0000000000000000000000000000000			
Range		Ω~500Ω) (300W/15V)	6S~0.0002S (0.166669			
Setting Range	6S~0.0002S(0.1666Ω 60S~0.002S(0.01666Ω 6S~0.0002S(0.1666Ω	Ω~500Ω) (300W/15V)	0.6S~0.00002S(1.6666Ω~0kΩ)(300W/500V)			
Resolution(30000 Steps) Accuracy	0.002S(15V); 0.0002 (T°1)±(0.3% of set +	S(150V)	0.0002S(50V); 0.00002S(500V) (T°1)±(0.3% of set + 0.06S) + 0.002mS			
Constant Voltage Mode	290 (3799-91)	200 30000-0000	17695 2019000	9100 2000 ROS		
Range	1 - 15V	1 ~ 150V	2.5 - 50V	2.5 - 500V		
Setting Range Resolution	0 – 15.3V	0 – 153V	0 – 51V	0 – 510V		
Accuracy	0.5mV (T°1)±(0.1% of set+	5mV (T°1)±(0.1% of set+	1mV (T°1)±(0.1% of set+	10mV (T°1)±(0.1% of set+		
,	0.1% of FS)	0.1% of FS)	0.1% of FS)	0.1% of FS)		
	(Full scale of High range)	(Full scale of High range)	(Full scale of High range)	(Full scale of High range		
Constant Power Mode						
Range	0W - 30W (6A)	0W - 300W(60A)	0W - 30W(1.5A)	0W - 300W(15A)		
Setting Range Resolution	0W – 30.6W 1mW	0W – 306W 10mW	0W - 30.6W 1mW	0W 306W 10mW		
Accuracy		- 1.4 % of FS (Full sca				



PEL-3032E

SPECIFICATIONS	DEL 3	0215	DEL 3	0225
Model DYNAMIC MODE	PEL-3	031E	PEL-3	032E
		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
General T1& T2	0.05ms~30ms/Res:1µ	ıs;30ms~30s/Res:1ms	0.05ms-30ms/Res:1µ	s;30ms~30s/Res:1ms
Accuracy	1μs/1ms±200ppm	1μs/1ms±200ppm	1μs/1ms±200ppm	1μs/1ms±200ppm
Slew Rate(Accuracy 10%)	0.001 - 0.25A/μs	0.01 - 2.5A/μs	0.25 ~ 62.5mA/μs	2.5 - 625mA/µs
Slew Rate Resolution	0.001A/µs	0.01A/µs	0.25mA/μs	2.5mA/µs
Slew Rate Accuracy of Setting		ime to reach from 10 % to % to 100 % in L range) of	90 % when the current is v the rated current.	aried from 2 % to 100 %
Constant Current Mode Current Setting Range Current Resolution	0 ~ 6A 0 ~ 6.12A 0.2mA	0 60A 0 61.2A 2mA	0 – 1.5A 0 – 1.53A 0.05mA	0 – 15A 0 – 15.3A 0.5mA
Current Accuracy	±0.8% FS	±0.8% FS	±0.8% FS	±0.8% FS
Constant Resistance Mode Range Setting Range	60S~0.002S (0.01666Ω 6S~0.0002S (0.1666Ω 60S~0.002S (0.01666Ω 6S~0.0002S (0.1666Ω	-5kΩ) (300W/150V) 2~500Ω) (300W/15V)	6S~0.0002S (0.16666Ω 0.6S~0.0002S (1.6666Ω 6S~0.0002S (1.6666Ω 0.6S~0.00002S (1.6666Ω	Ω~50kΩ) (300W/500V) 2~5kΩ) (300W/50V)
Resistance Resolution	30000 steps	31)(3.00//	30000 steps	
Resistance Accuracy	$(T^{\circ 1}) \pm (1\% \text{set} + 0.6S)$) + 0.002mS	(T°1)±(1%set + 0.065	S) + 0.002mS
MEASUREMENT				
Voltage Readback				
Range Resolution	0 – 15V 0.5mV	0 – 150V 5mV	0 – 50V 2mV	0 – 500V 20mV
Accuracy	(T°1)±(0.1% of rdg +0.1% of FS) (Full scale of Low range)	(T°1)±(0.1% of rdg +0.1% of FS) (Full scale of High range)	(T°1)±(0.1% of rdg +0.1% of FS)	(T°1)±(0.1% of rdg +0.1% of FS) (Full scale of High range)
Current Readback Range	0 – 6A	0 – 60A	(Full scale of Low range) 0 – 1.5A	0 – 15A
Resolution	0.2mA	2mA	0.05mA	0.5mA
Accuracy	(T°1)±(0.1% of rdg+ 0.1% of FS)	(T°1)±(0.1% of rdg+ 0.2% of FS)	(T°1)±(0.1% of rdg+ 0.1% of FS)	(T°1)±(0.1% of rdg+ 0.2% of FS)
Power Read back H&L Range CP Mode L Range	(Full scale of High range) 0 - 300W 0 - 30W	(Full scale of High range) 0 - 300W 0 - 30W	(Full scale of High range) 0 - 300W 0 - 30W	(Full scale of High range) 0 - 300W 0 - 30W
FUNCTION				
Sequence(Normal/Fast)	59s (3599940 sec)		steps/Step time: 1ms eps/Step time: 25us – 6	
BATT Test Automation		59m: 59s (3599940sec)		
Test Function		on, OPP Autotest Funct	tion	
Soft Start	Yes			
In/Out Terminal		rol, Current Monitor O	utput, Trigger In/Out T	erminal (BNC)
Preset Data Protection	10 Sets OCP, OPP, UVP, OV	P, OTP, RVP		
OTHER				
Power Source Interface		AN(Opt.)/RS-232(Ma	nufacturer Installed Or	nly)
Dimensions & Weight	213.8(W) x 124.0(H)	x 400.5 (D) mm, Approx	x. 7.5Kg	

Note: *1 - If the ambient temperature is over 30 °C or below 20 °C, then T = ± | t - 25 °C | x 100ppm/°C x Set If the ambient temperature is in the range of 20°C - 30°C , then T = 0 (t is the ambient temperature)

ORDERING INFORMATION

PEL-3031E 150V/60A/300W Programmable Single-channel D.C. Electronic Load PEL-3032E 500V/15A/300W Programmable Single-channel D.C. Electronic Load

ACCESSORIES :

Quick Start Guide, CD ROM (User Manual, Programming Manual)x1, Power Cord (Region dependent), Front Terminal Washers-spring Washer(M6)x2, GTL-105A Remote Sense Cables(Red x 1, Black x 1)

OPTIONAL ACCESSORIES

GTL-248 GPIB Cable, 2m PEL-010 Dust Filter GTL-246 USB Cable, Type A – Type B PEL-004 GPIB Option PEL-018 LAN Card

GRA-414-J Rack Mount Kit (JIS) GRA-414-E Rack Mount Kit (EIA)

Rear Panel



PEL-010 Dust Filter



PEL-004 GPIB Option



PEL-018 LAN Card



GRA-414-J Rack Mount Kit (JIS)

For: PEL-3031E/3032E



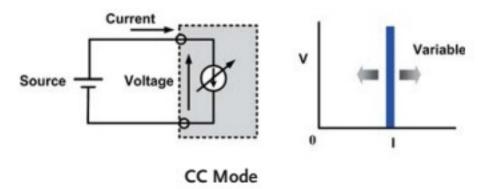
GRA-414-E Rack Mount Kit (EIA)

For: PEL-3031E/3032E

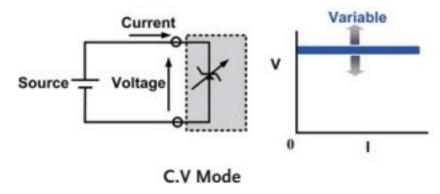


A. OPERATING MODE

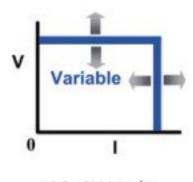
The PEL-3000E series provides four fundamental operating modes and three add-on modes of CC, CR and CP separately combining with CV. Users can set different load condition under different operating modes such as setting operating range for load level, Current Slew Rate, input voltage and load current. The input



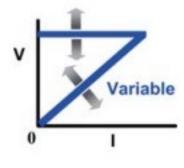
Under constant current mode, electronic load will sink the amount of current users has set. Different current settings via CC mode allow users to test the voltage changes of DC power supply which is called load regulation test.



Under constant voltage mode, electronic load will sink sufficient current to regulate the voltage source to the set value. This mode allows users not only to test current limit function of power supply, but also to simulate battery operation in testing battery chargers.

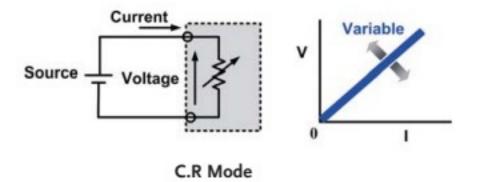


CC+CV Mode

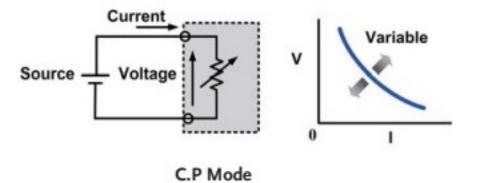


CR+CV Mode

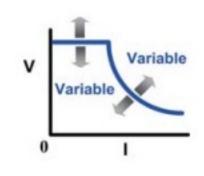
voltage range has two levels - high and low. The load current operating range has two levels - high and low current levels which possess different resolution to meet test requirements of different power product specifications.



Under constant resistance mode, electronic load will sink load current, which is linearly direct proportion to input voltage. This mode can be utilized in testing voltage or the activation and current limit of power supply.



Under constant power mode, electronic load will sink load current, which is indirect proportion to input voltage to reach preset constant power requirement. Hence, the changes of input voltage will have indirect proportion effect on current sinking so as to reach constant power control.



CP+CV Mode

power supply will switch to CC mode and PEL-3000 will switch to CV mode to limit electronic load from sinking the total current of power supply so as to prevent power supply under test from damaging. Electronic load will cease operation once the voltage of DUT is lower than the set voltage under +CV mode.

B. STATIC/DYNAMIC/SEQUENCE MODE

+CV mode can be selected under CC, CR or CP mode. When +CV

than the maximum current of power supply under test, electronic

load will automatically switch to CV mode. It is because that the

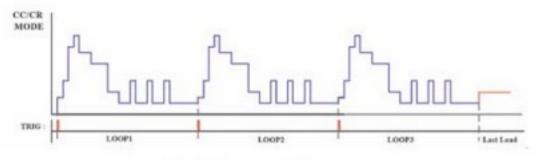
current sunk is the maximum current of power device. Therefore,

mode function is turned on and electronic load sinks more current

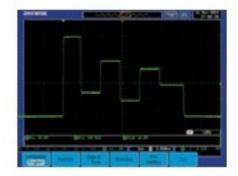
Operation	0.000	Domenia	Sequence					
Function	Static	Dynamic	Fast	Normal				
9		Selection between two conditions	Selection from more than two conditions	Selection from more than two conditions				
Operating Modes	All modes	Two conditions using same mode Support CC or CR	Each condition must use same mode Support CC or CR mode	Each condition is able to be used in different mode All modes				
Adjustable Condition Setting	Value A/ Value B Slew Rate	Level 1/Level 2 Timer 1/Timer 2 Slew Rate 1/Slew Rate 2	Level	Level Others Timer Slew Rate				
Sequence Step Combination	N/A	N/A	* 1 Sequence * 25µs/step * 1,000 steps	10 Sequence				
Other Functions	N/A	Trigger Out function	Trigger Out function	Trigger Out function Ramp function				

The PEL-3000E series, according to different test conditions, step or continuous changes, test speeds, and selectable modes, has three operating functions: Static, Dynamic and Sequence.

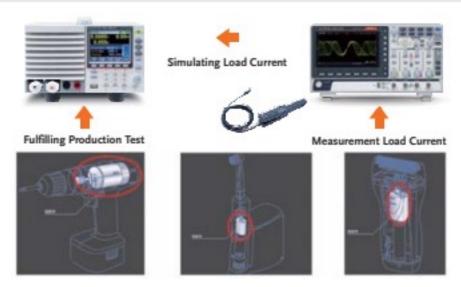
C. FAST SEQUENCE & NORMAL SEQUENCE



Normal Sequence Diagram



When operating the Sequence Function, PEL-3000E Series follows the time and load settings of step1, step2, step3, etc. so as to realize different load current variation.



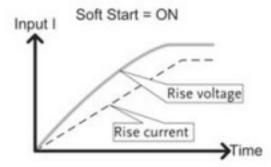
Power-driven Tools Simulation Test

Set a complete sequence editing function to obtain following waveforms. Users can save development cost and time without using a PC to control electronic load and writing programs.

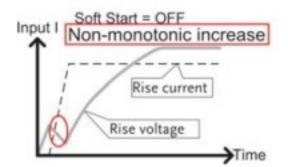


Ramp function of PEL-3000E Series is able to set the current transition. When turned on, the current takes on a slope form; when turned off, the current takes on a step form.

D. SOFT START

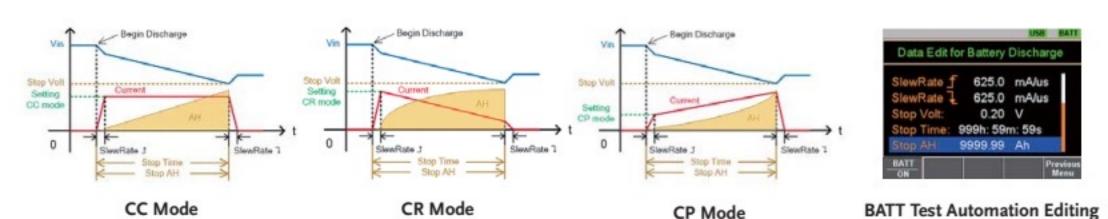


The Soft Start function of PEL-3000E Series allows users to determine the rise time of current sink that is to decide how much time is required to reach electronic load's set current, resistance or power value. PEL-3000E's soft start function prevents inrush current and surge voltage from happening on DUT.



For instance, test applications using a power supply, LED and a DC load (activate the soft start function) can prevent inrush current and surge voltage from causing damages on LED.

E. BATT TEST AUTOMATION



The built-in BATT Test Automation of PEL-3000E provides battery discharge applications with more flexible discharge stop condition setting as well as rise and fall Slew Rate for discharge current settings. Under CP, CC or CR mode, the conditions for stop discharge can be set respectively. For instance, set the input voltage for stop discharge current, the execution time for discharge current or total discharge current*time(AH) to satisfy the verification of battery capability.

F. OCP TEST AUTOMATION

OKF Current OCF Current OCF Vidage Vidage Trig Current Current Start Current

OCP test Automation for DUT(Power Supply), Provide users with high resolution OCP measurement values to verify DUT's OCP activation point. Provide users with measurement results so as to help them determine whether DUT's actual OCP activation point meets the regulations. Test the value of OCP by setting load current increment from start current to stop current. OCP's activation point can be accurately measured.

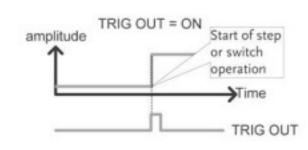
G. OPP TEST AUTOMATION

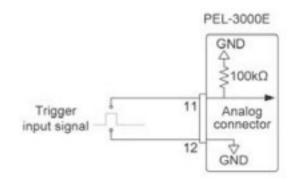


OPP test Automation for DUT (Power Supply), Provide users with high resolution OPP measurement values to verify DUT's OPP activation point. Provide users with measurement results so as to help them determine whether DUT's actual OPP activation point meets the regulations. Test the value of OPP by setting power increment from start power to stop power. OPP's activation point can be accurately measured.

H. TRIGGER IN/OUT BNC







Trigger In/Out function could be turned on or off by CONFIGURE setting of PEL-3000E. The Trigger Input can be set the delay time while the Trigger Out Pulse Width can be set as well.

The trigger output signal is generated every time a switching operation is performed such as Dynamic mode or Fast/Normal sequence is executed when the trig out parameter is enabled. The trigger output signal from TRIG OUT BNC is a 4.5V pulse of at least 2us with an impedance of 500ohm. The common

potential is connected to the chassis potential. The signal threshold level is TTL.

The TRIG IN BNC on the rear panel is used to resume a sequence after a pause. This action is useful to synchronize the execution of a sequence with another device. To resume a pause sequence, apply a high signal for 10us or more. The TRIG IN BNC is pulled down to earth internally using a 100Kohm resistor.

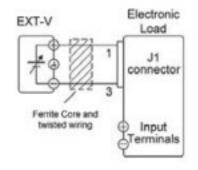
I. PROTECTION MODES

Function	ОСР	OVP	ОРР	ОТР	UVP
Adjustable Thresholds	✓	1	✓	N/A	✓
Load Off	✓	1	✓	Fixed	1
Limit Function	✓	N/A	✓	N/A	N/A

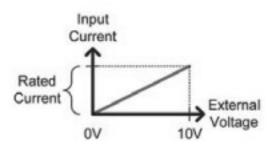
The PEL-3000E series provides many protective functions including over current protection (OCP), over voltage protection (OVP), over power protection (OPP), over temperature protection (OTP) and under voltage protection (UVP). Except for OTP, all thresholds

of protective functions are adjustable. When protective function is activated, electronic load will send out warning signal and terminate operation. Other than protective functions, Limit function can also be utilized to maintain electronic load in operation at a preset value.

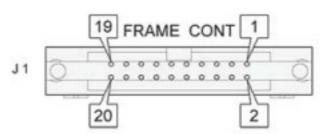
ANALOG EXTERNAL CONTROL



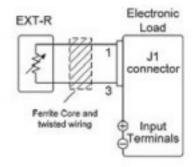
External Voltage Control



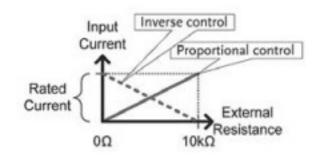
CC Mode
Input current = rated current x (external voltage/10)



11 Connector



External Resistance Control

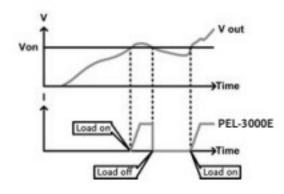


CC Mode

Proportional Control:Input current = rated current x (external resistance/10K ohm)

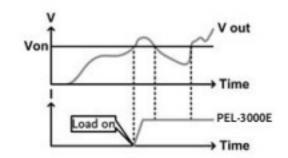
Inverse Control:Input current = rated current x (1- external resistance/10k ohm) The PEL-3000E series provides the external analog channel control function, which allows users to connect J1 connectors on the rear panel to input voltage or to connect resistance to control electronic load operation. Users can integrate this function into test system and utilize signals generated from the test system to control PEL-3000E.

VonN VOLTAGE AND Von LATCH FUNCTION



Von Latch = OFF

Von Voltage is the threshold voltage for electronic load to activate or terminate sinking current. When Von Latch is set to off, electronic load operation will be activated if input voltage is higher than Von Voltage and electronic load operation will be terminated if input voltage is lower than Von Voltage. When Von



Von Latch = ON

Latch is set to on, electronic load operation will be activated if input voltage is higher than Von Voltage and will continue operation even input voltage is lower than Von Voltage. Von Voltage function can test the transient maximum current capability provided by power supply.

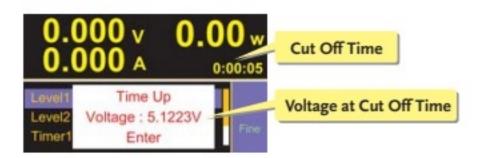
TIMER FUNCTIONS



Elapsed Time

The PEL-3000E series provides count time and cut off time functions. The display screen will show present activation time when electronic load is activated. When electronic load operation is terminated count time will stop and the total operation time will be shown on the display screen.

The activation time of cut off time can be set to the maximum length of 999h 59min 59s. When electronic load is activated



Voltage at Cut Off Time

this function will start counting time. Electronic load will cease operation (load off) and show the final input voltage on the screen when preset time is reached. Timer function can provides information and application related to time. Users can obtain the total time of limiting electronic load operation to increase the agility of electronic load tests.

PEL-2004A(B)





PEL-2002A(B)





FEATURES

- Sequence Function to do High Speed Load Simulations
 Flexible Configuration with Mainframes and
- Plug-in Modules
- * Multiple Independent Load Inputs up to
- 8 Channels in a Mainframe Parallel Connection of Inputs for Higher
- Parallel Connection of Inputs for Highe Load Capacity
- Program Mode to Create Work Routines for Repetitive Tests
- OPP/OCP/OVP/OTP/RVP/UVP Protections
 External Channel Control/Monitoring via
 Analog Control Connector
- PEL-2000A Series Interface Standard: USB, RS-232; Option: LAN, GPIB PEL-2000B Series Interface Standard: USB, RS-232, LAN; Option: GPIB

The FELL 2004(B) and PEL 2002A(B) are multiple channel, programmable DC electronic loads with a modularized structure. The FEL 2004(B) Series is designed to meet the continuing shift toward large speed operation in loady's semiconductor market. As the power supply units, DCD Converters, and bastress that drive semiconductor semiconductor market. As the power supply units, DCD Converters, and bastress that drive semiconductor semiconductor market. As the power supply units, DCD Converters, and bastress that drive semiconductor se

PEL-2004A(B) is a 4-slot mainframe with a master control unit to hold 4 load modules, while PEL-2002A(B) is a 2slot mainframe with master control unit to hold 2 load modules. When PEL-2004A(B) is configured with 4 load modules rated at 350W each, the PEL-2000A(B) Series is able to sink up to 1.44VA of power.

For higher load capacities, mainframes can be linked together in parallel with standard MIL 20-pin connectors. A maximum of 5 mainframes, including one master and 4 slaves can be chained together to create a total load capacity of 7kW for high current and high power applications. Using 4 dual channel load modules, PEL-2004A(B) is able to test 8 power supply outputs simultaneously.

The Sequence function allows each channel to change its load sink according to a predefined sequence at a rate of up to 100 lapse rate Each sequence is allow to un concurrently under the control of one och. Chr. is in one one och. Chr. is in one of och. Chr. is one och. Chr. is och. Chr. is a chr. is a chr. is och. Chr. is och. Chr. is och. Chr. is of chr. is och. Chr. i

The PEL-2000A(B) Series includes a number of protection modes: Over Current Protection (OCP), Over Voltage Protection (OVP), Over Power Protection (OPP), Reverse Voltage Protection (RVP), and Under Voltage Protection(UVP). The protection modes are useful to protect both the load modules and the DUT(s).

A buzzer can be set for when a protection setting has been tripped, When a protection mode has been tripped, the document will display and anima and upon intensing current/vollege. When a load unit is operating in CR or CV mode, the unit may need Over Current Protection to prevent occurrent being sunk. Over Current Protection stops the load from striping more current that in excommended in tail and pervents the load from busing more current being in excommended in that operents the load from busing or the control of the load from striping more current being striped. The power will not protected to the load from striped in the load from striped in the load from striped in the load from the load from striped in the load from the load fr

The Co/NGC function is available to monitor test results all the time. When a test result goes beyond a preset intimit range, a *No Co of 'signic' or 'indication will be shown on the display and *No Co' signic run be sent out through the D-SUB interface for external device control. This Co/NoCo function is available for CC mode, CV mode and CR mode control that the control of th

PEL-001 GPIB Card

PEL-002 Rack Mount Kit

PEL-003 Panel Cover

PEL-016 LAN Card (for PEL-2000A Main Frame)









GTL-249 Frame Link Cable



GTL-120 Test Lead



GTL-121 Sense Lead



D105

	FICATIONS								40.45		47.4.
		PEL-20)20A(B)		PEL-2	030A(B)		PEL-20	40A(B)	PEL-20)41A(B)
CHANNEL		L/R	L/R	Le		Right	Right	one channel	one channel	one channel	one channel
RANGE		LOW	HIGH		/A	LOW	HIGH	LOW	HIGH	LOW	HIGH
OWER		100W	100W		rw	250W	250W		0W	-	ow
URRENT		0~2A	0~20A 80V	0-	SA O	0~4A	0~40A	0~7A 0~	0~70A	0~1A	0~10A
OLINGE	Market at the court of the court	0.4V at 2A	0.8V at 20A	0.87	at 5A	80V 0.4V at 4A	0.8V at 40A	0.4V at 7A	0.8V at 70A	1V at 1A	2V at 10A
MIN.OPERATIN	NG VOLTAGE(dc)(Typ.)	0.2V at 1A	0.4V at 10A		it 2.5A	0.2V at 2A	0.4V at 20A	0.2V at 3.5A	0.4V at 35A	0.5V at 0.5A	1V at 5A
STATIC MODE											
CONSTANT CL	URRENT MODE										
	Operating Range	0-2A	0-20A	0-	5A	0-4A	0-40A	0-7A	0~70A	0-1A	0~10A
	Setting Range	0-2.04A	0-20.4A	0~5	.1A	0-4.08A	0-40.8A	0-7.14A	0-71.4A	0-1.02A	0-10.2A
	Resolution	0.1mA	1mA	0.12	5mA	0.1mA	1mA	0.2mA	2mA	0.05mA	0.5mA
	Accuracy	±(0.1%set +	±(0.1%set +	±(0.1%set	+ 0.1%F.S)	±(0.1%set +	±(0.1%set +	±(0.1%set +	±(0.1%set +	±(0.1%set +	±(0.1%set +
	1000000	0.1%F.S.")	0.2%F.S.)			0.1%F.S ^{*1})	0.2%F.S)	0.1%F.S ^{*1})	0.2%F.S)	0.1%F.S ^{*1})	0.2%F.S)
ONSTANT RE	ESISTANCE MODE	0.0350.300		0.10 1.110	1200111200	0.00350.150		0.0050 1000	CONTRACTOR OF THE PROPERTY OF	1 250 510	*******
	Operating Range		(100W/16V) (100W/80V)	0.3Ω-1.2kΩ 15Ω-60kΩ	1(30W/16V)		Ω(250W/16V) Ω(250W/80V)		1(350W/16V) (350W/80V)		350W/125V) (350W/500V)
			2(100W/16V)	0.3Ω~1.2kΩ			Ω(250W/80V)		(350W/16V)		350W/125V)
	Setting Range		(100W/80V)	15Ω-60kΩ			Ω(250W/80V)	1.25Ω-5kΩ			(350W/500V)
			100W/16V)		(30W/16V)		250W/16V)		0W/16V)		OW/125V)
	Resolution*1		00W/80V)		30W/80V)		250W/80V)	1	0W/80V)		0W/500V)
	Accuracy ¹²		%set + 0.1S)		%set + 0.15)		%set + 0.1S)		%set + 0.1S)		6set + 0.02S)
	With≥2.5V at input		6set + 0.01S)	60kΩ: ±(0.19		7.5kΩ: ±(0.15			(set + 0.01S)		6set + 0.005S)
NOTE: *1:S	(siemens) is the unit of conductance,	equal to one reciprocal	ohm. *2 : Accuracy mu	st be calculated in co	nductivity units.	2802 - 72	700	100		70 101	97
CONSTANT VO	OLTAGE + CONSTANT CURREN			40			W	60	Go.	9.4	7.4
	Operating Range	1~80V	1~16V	1~80V	1~16V	1~80V	1~16V	1~80V	1~16V	2.5~500V	2.5~125V
	Setting Range	0-81.6V	0-16.32V	0-81.6V	0-16.32V	0-81.6V	0-16.32V	0-81.6V	0-16.32V	0-510V	0-127.5V
	Resolution	2mV	0.4mV	2mV	0.4mV	2mV	0.4mV	2mV	0.4mV	10mV	2.5mV
	Accuracy Current Setting Range	±(0.05%set 0~2.04A	+ 0.1%F.S.) 0~20.4A		+ 0.1%F.S.)	±(0.05%set 0~4.08A	+ 0.1%F.S.)		+ 0.1%F.S.)		+ 0.1%F.S.)
	Resolution	0~2.04A 0.1mA	0~20.4A		5mA	0-4.08A 0.1mA	0~40.8A 1mA	0~7.14A 0.2mA	0~71.4A 2mA	0~1.02A 0.05mA	0~10.2A 0.5mA
	Resolution	±(0.1%set +		0.12	JITTIN.	±(0.1%set +		±(0.1%set +		±(0.1%set +	
	Accuracy	0.1%F.S.*1)	±(0.1%set + 0.2%F.S.)	±(0.1%set	+ 0.2%F.S.)	0.1%F.S*1)	±(0.1%set + 0.2%F.S)	0.1%F.S*1)	±(0.1%set + 0.2%F.S)	0.1%F.S*1)	±(0.1%set + 0.2%F.S)
ONSTANT PO	OWER MODE + CONSTANT CU				100	0.1701.5 /	4.2.4.1.5)	0.1701.5 /	4.2.75	0.1701.5 /	0.2,0,12)
	Operating Range	1-10W	1-100W	1~3	sow .	1-25W	1-250W	1-35W	1-350W	1-35W	1-350W
	Setting Range	0~10.2W	0~102W	0~30	0.6W	0~25.5W	0~255W	0~35.7W	0~357W	0~35.7W	0-357W
	Resolution	1mW	10mW	1m	nW	1mW	10m/W	1mW	10mW	1mW	10mW
		±(0.5%set +	±(0.5%set +	. 40 FO/	0.50/5.60	10 FOL .	a rouge of h	±(0.5%set +	±(0.5%set +	±(0.5%set +	±(0.5%set+
	Accuracy	0.5%F.S*1)	0.5%F.S)	±(0.5%set	+ 0.5%F.S)	±(0.5%set -	+ 0.5%F.S"1)	0.5%F.S ^{*1})	0.5%F.S)	0.2%F.S ^{*1})	0.5%F.S)
	Current Setting Range	0~2.04A	0~20.4A	0-5	.1A	0~4.08A	0~40.8A	0~7.14A	0~71.4A	0~1.02A	0~10.2A
	Resolution	0.1mA	1mA	0.12	5mA	0.1mA	1mA	0.2mA	2mA	0.05mA	0.5mA
	Accuracy	±(0.1%set +	±(0.1%set +	±/0.1%set	+ 0.2%F.S.)	±(0.1%set +	±(0.1%set +	±(0.1%set +	±(0.1%set +	±(0.1%set +	±(0.1%set +
		0.1%F.S.*1)	0.2%F.S.)			0.1%F.S*1)	0.2%F.S)	0.1%F.S ^{*1})	0.2%F.S)	0.1%F.S ^{*1})	0.2%F.S)
	.S. = Full scale of H Range										
YNAMIC MO	DOE	0.005 10	(D ()		0.005 1/	Dans / Dans June		0.025 10	I D 2	0.005 10	/ D 3
	T1&T2		ms / Res : 1µs / Res : 1ms		200	Oms / Res : 1µs s / Res : 1ms			ms / Res : 1µs / Res : 1ms		ms / Res : 1µs s / Res : 1ms
	Accuracy		± 100ppm			s + 100ppm			± 100ppm		± 100ppm
CONSTANT CL	URRENT MODE	193 / 11113	т гооррии		1957 11115	з т тооррит		195 / 11115	т тооррии	195 / 11115	т гооррии
	Slew Rate	0.32 - 80mA/µs	3.2 - 800mA/µs	0.8 ~ 20	0mA/μs	0.64 - 160mA/µs	6.4 - 1600mA/µs	0.001 - 0.28A/µs	0.01 - 2.8A/µs	0.16 - 40mA/µs	1.6 ~ 400mA/
	Slew Rate Resolution	0.32mA/µs	3.2mA/µs		A/μs	0.64mA/µs	6.4mA/µs	0.001A/µs	0.01A/µs	0.16mA/µs	1.6mA/µs
	Slew Rate Accuracy of			100001474	100000						
	Setting	±(10% + 15µs)	±(10% + 15µs)	±(10%	+ 15µs)	±(10% + 15µs)	±(10% + 15µs)	±(10% + 15µs)	±(10% + 15µs)	±(10% + 15µs)	±(10% + 15µ
	Commit Setting Bases								0~71.4A	0~1.02A	0~10.2A
	Current Setting Range	0~2.04A	0~20.4A	0-5	5.1A	0~4.08A	0~40.8A	0~7.14A	G -11.411	0-1,025	
	Current Setting Range Current Resolution	0.1mA	1mA		5mA	0.1mA	0~40.8A 1mA	0.2mA	2mA	0.05mA	0.5mA
	Current Resolution Current Accuracy	0.1mA			5mA			0.2mA		0.05mA	0.5mA % F.S.
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE	0.1mA ±0.43	1mA 6 F.S.	0.12	5mA ±0.4	0.1mA % F.S.	1mA	0.2mA ±0.49	2mA % F.S.	0.05mA ±0.45	% F.S.
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate	0.1mA ±0.49	1mA % F.S. 0mA/μs	0.12 0.8 ~ 20	5mA ±0.4° 0mA/μs	0.1mA % F.S. 6.4~16	1mA 00mA/μs	0.2mA ±0.49	2mA 6 F.S. 2.8A/µs	0.05mA ±0.45	% F.S. 00mA/μs
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution	0.1mA ±0.49	1mA 6 F.S.	0.12 0.8 ~ 20	5mA ±0.4	0.1mA % F.S. 6.4~16	1mA	0.2mA ±0.49	2mA % F.S.	0.05mA ±0.45	% F.S.
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of	0.1mA ±0.49 3.2 ~ 80 3.2m	1mA % F.S. 0mA/μs	0.12 0.8 ~ 20	5mA ±0.49 0mA/μs Α/μs	0.1mA % F.S. 6.4~16	1mA 00mA/μs	0.2mA ±0.49 0.01 ~:	2mA 6 F.S. 2.8A/µs	0.05mA ±0.45 1.6 ~ 40	% F.S. 00mA/μs
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10%	1mA % F.S. 0mA/μs A/μs + 50μs)	0.12 0.8 ~ 20 0.8 m	5mA ±0.49 0mA/μs A/μs ±(10%	0.1mA % F.S. 6.4 ~ 16 6.4m + 50µs)	1mA 00mA/μs nA/μs	0.2mA ±0.49 0.01 ~: 0.01 ±(10%	2mA 6 F.S. 2.8Α/μs Α/μs + 50μs)	0.05mA ±0.45 1.6 ~ 40 1.6m ±(10%	% F.S. 20mA/μs nA/μs + 50μs)
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω-3000	1mA 6 F.S. 0mA/μs A/μs + 50μs)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ	5mA ±0.49 0mA/μs A/μs ±(10%	0.1mA % F.S. 6.4 ~ 160 6.4m 5 + 50μs)	1mA 00mA/μs nA/μs Ω(250W/16V)	0.2mA ±0.49 0.01 - : 0.01 ±(10% 0.025Ω-1000	2mA 6 F.S. 2.8A/µs A/µs + 50µs)	0.05mA ±0.45 1.6 ~ 40 1.6m ±(10%	% F.S. 00mA/μs nA/μs + 50μs)
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range	0.1mA ±0.43 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ	1mA 6 F.S. 0mA/μs ιΑ/μs + 50μs) α(100W/16V) (100W/80V)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ 15Ω-60kΩ	5mA ±0.4° 0mA/μs A/μs ±(10% 1(30W/16V) (30W/80V)	0.1mA % F.S. 6.4 ~ 16i 6.4m + 50μs) 0.0375Ω-150 1.875Ω~7.5kd	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V)	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω~1000 1.25Ω~5kΩ	2mA % F.S. 2.8A/µs A/µs + 50µs) 2(350W/16V) (350W/80V)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ	% F.S. 00mA/µs nA/µs + 50µs) 350W/125V) (350W/500V)
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS(1mA 6 F.S. 0mA/μs A/μs + 50μs)	0.8 ~ 20 0.8 m 0.3 Ω – 1.2 kΩ 15 Ω – 60 kΩ 83.333 μS (5mA ±0.49 0mA/μs A/μs ±(10%	0.1mA % F.S. 6.4 ~ 166 6.4m + 50μs) 0.0375Ω-150 1.875Ω~7.5ks 0.666mS(;	1mA 00mA/μs nA/μs Ω(250W/16V)	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω~1000 1.25Ω~5kΩ 1mS(350	2mA 6 F.S. 2.8A/µs A/µs + 50µs)	0.05mA ±0.45 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35)	% F.S. 00mA/μs nA/μs + 50μs) 350W/125V)
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω-3000 3.75Ω~15kΩ 0.333mS(6.667μS(1	1mA 6 F.S. 0mA/µs A/µs + 50µs) 0(100W/16V) (100W/80V)	0.8 ~ 20 0.8m 0.3D-1.2kD 15D-60kD 83.333µS(1.666µS()	±0.49 0mA/μs A/μs ±(10% 1(30W/16V) (30W/80V)	0.1mA % F.S. 6.4 ~ 160 6.4m 5 + 50μs) 0.0375Ω-150 1.875Ω~7.5kd 0.666mS(3	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/16V)	0.2mA ±0.49 0.01 - : 0.01 ±(10% 0.025Ω-1000 1.25Ω-5kΩ 1mS(350 20 μS(350	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V)	0.05mA ±0.45 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35)	% F.S. 00mA/μs 0A/μs + 50μs) 350W/125V) (350W/500V) 0W/125V)
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range	0.1mA ±0.43 3.2 ~ 80 3.2m ±(10% 0.075Ω-3000 3.75Ω~15kΩ 0.333mS() 6.667μS(1 300Ω: ±(0.5	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 100W/16V)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ 15Ω-60kΩ 83.333μS(1.666μS(: 1.2kΩ: ±(0.5	±0.49 0mA/μs A/μs ±(10% 0(30W/16V) (30W/80V) (30W/80V)	0.1mA % F.S. 6.4 ~ 164 6.4m + 50μs) 0.0375Ω-150 1.875Ω~7.5kt 0.666mS(2 13.333μS(1 150Ω: ±(0.5	1mA 00mA/μs 0A/μs 0(250W/16V) 0(250W/80V) 250W/16V)	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω~1000 1.25Ω~5kΩ 1mS(350 20 μS(35) 100Ω: ±(0.5)	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 2(350W/16V) (350W/80V)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35) 5kΩ: ±(0.59	% F.S. 00mA/µs nA/µs + 50µs) 350W/125V) 0W/125V) 0W/500V)
MEASUREMEN	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy	0.1mA ±0.43 3.2 ~ 80 3.2m ±(10% 0.075Ω-3000 3.75Ω~15kΩ 0.333mS() 6.667μS(1 300Ω: ±(0.5	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 100W/80V) 96set + 0.1S)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ 15Ω-60kΩ 83.333μS(1.666μS(: 1.2kΩ: ±(0.5	5mA ±0.4° 0mA/μs ±(10% 1(30W/16V) (30W/80V) (30W/80V) (96set + 0.15)	0.1mA % F.S. 6.4 ~ 164 6.4m + 50μs) 0.0375Ω-150 1.875Ω~7.5kt 0.666mS(2 13.333μS(1 150Ω: ±(0.5	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) %set + 0.15)	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω~1000 1.25Ω~5kΩ 1mS(350 20 μS(35) 100Ω: ±(0.5)	2mA 6 F.S. 2.8A/µs A/µs + 50µs) D(350W/16V) (350W/80V) 0W/16V) 0W/16V) %set + 0.1S)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35) 5kΩ: ±(0.59	% F.S. 00mA/µs nA/µs + 50µs) 350W/125V) 0W/125V) 0W/125V) 0W/500V) 6set + 0.02S)
MEASUREMEN	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS() 6.667μS(1 300Ω: ±(0.59	1mA 6 F.S. 0mA/μs A/μs + 50μs) 1(100W/16V) (100W/80V) 100W/80V) 96set + 0.1S) 6set + 0.01S)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ 15Ω-60kΩ 83.333 μS(1.666 μS() 1.2kΩ: ±(0.59	±0.49 0mA/μs A/μs ±(10%) 0(30W/16V) (30W/80V) (30W/80V) (96set + 0.1S)	0.1mA % F.S. 6.4 ~ 160 6.4m + 50μs) 0.0375Ω-150 1.875Ω~7.5k0 0.666mS(; 13.333μS(; 150Ω: ±(0.59	1mA 00mA/μs 0A/μs 0(250W/16V) 0(250W/80V) 250W/16V) 250W/80V) %set + 0.15) 6set + 0.015)	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω~1000 1.25Ω~5kΩ: 1mS(35i 20 μS(35i 100Ω: ±(0.5%)	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) 00W/16V) 00W/16V) 00W/80V) %set + 0.1S) 6set + 0.01S)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ; 20μS(35) 0.5μS(35) 5kΩ: ±(0.59) 200kΩ; ±(0.59)	6 F.S. 00mA/µs 1A/µs + 50µs) 350W/125V) 0W/125V) 0W/125V) 0W/500V) 6set + 0.02S) 6set + 0.005S)
MEASUREMEN	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS(6.667μS(1 300Ω: ±(0.59	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 100W/16V) 00W/80V) 96set + 0.1S) 6set + 0.01S)	0.8 ~ 20 0.8 m 0.3Ω~1.2kΩ 15Ω~60kΩ 83.333μS(1.666μS(3 1.2kΩ : ±(0.59) 0~16V	±0.4° 0mA/μs A/μs ±(10%) (30W/16V) (30W/80V) (30W/80V) (30W/80V) (50W/80V) (50W/80V)	0.1mA % F.S. 6.4 ~ 164 6.4m + 50μs) 0.0375Ω-150 1.875Ω-7.5kd 0.666mS(2 13.333μS(2 150Ω: ±(0.5) 7.5kΩ: ±(0.5)	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) 96set + 0.1S) 66set + 0.01S)	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω-1000 1.25Ω-5kΩ 1mS(35) 20 μS(35) 100Ω: ±(0.5% 5kΩ: ±(0.5%)	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 0W/80V) 96set + 0.1S) 6set + 0.01S)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35) 5kΩ:±(0.59 200kΩ:±(0.59	6 F.S. 00mA/μs nA/μs + 50μs) 350W/125V) 0W/125V) 0W/125V) 0W/500V) 6set + 0.02S) Kset + 0.005S)
MEASUREMEN	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range Resolution	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS(6.667μS(1 300Ω : ±(0.59 0~16V 0.32mV	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 100W/16V) 00W/80V) %set + 0.1S) 6set + 0.01S)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ 15Ω-60kΩ 83.333 μS(1.666 μS() 1.2kΩ: ±(0.59	5mA ±0.4° 0mA/μs A/μs ±(10% 1(30W/16V) (30W/80V) (30W/80V) 5%set + 0.15) 6set + 0.015)	0.1mA % F.S. 6.4 ~ 164 6.4m 4 + 50μs) 0.0375Ω-150 1.875Ω-7.5kd 0.666mS(2 13.333μS(2) 150Ω: ±(0.59 0~16V 0.32mV	1mA 00mA/μs 0A/μs 0(250W/16V) 0(250W/80V) 250W/16V) 250W/80V) %set + 0.15) 6set + 0.015)	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω-100α 1.25Ω-5kΩ 1mS(35) 20 μS(35) 100Ω : ±(0.5) 5kΩ: ±(0.5) 0~16V 0.32mV	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 60W/80V) %set + 0.15) 6set + 0.01S) 0~80V 1.6mV	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35) 5kΩ:±(0.59 200kΩ:±(0.59) 0~125V 2.5mV	6 F.S. 00mA/μs 1A/μs + 50μs) 350W/125V) (350W/500V) 00W/500V) 6set + 0.025) 6set + 0.005S)
MEASUREMEN OLTAGE REA	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range Resolution Accuracy	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS(6.667μS(1 300Ω : ±(0.59 0~16V 0.32mV	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 100W/16V) 00W/80V) 96set + 0.1S) 6set + 0.01S)	0.8 ~ 20 0.8 m 0.3Ω~1.2kΩ 15Ω~60kΩ 83.333μS(1.666μS(3 1.2kΩ : ±(0.59) 0~16V	5mA ±0.4° 0mA/μs A/μs ±(10% 1(30W/16V) (30W/80V) (30W/80V) 5%set + 0.15) 6set + 0.015)	0.1mA % F.S. 6.4 ~ 164 6.4m + 50μs) 0.0375Ω-150 1.875Ω-7.5kd 0.666mS(2 13.333μS(2 150Ω: ±(0.5) 7.5kΩ: ±(0.5)	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) 96set + 0.1S) 66set + 0.01S)	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω-100α 1.25Ω-5kΩ 1mS(35) 20 μS(35) 100Ω : ±(0.5) 5kΩ: ±(0.5) 0~16V 0.32mV	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 0W/80V) 96set + 0.1S) 6set + 0.01S)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35) 5kΩ:±(0.59 200kΩ:±(0.59) 0~125V 2.5mV	6 F.S. 10mA/μs 1A/μs + 50μs) 350W/125V) (350W/500V) 0W/500V) 6set + 0.025) Kset + 0.005S)
CONSTANT RE	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range Resolution Accuracy NDBACK	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS() 6.667μS() 300Ω : ±(0.59 0~16V 0.32mV ±(0.025%set	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 100W/80V) 96set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ 15Ω-60kΩ 83.333 μS(1.666 μS(3) 1.2kΩ : ±(0.59) 60kΩ: ±(0.59) 0~16V 0.32mV	5mA ±0.4° 0mA/μs A/μs ±(10% 1(30W/16V) (30W/80V) (30W/80V) (36set + 0.15) 6set + 0.015) 0~80V 1.6mV ±(0.025%set	0.1mA % F.S. 6.4 ~ 164 6.4m + 50μs) 0.0375Ω-150 1.875Ω~7.5k 0.666mS(3 13.333μS(1 150Ω: ±(0.59 7.5kΩ: ±(0.59 0~16V 0.32mV + 0.025% F.S.)	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) %set + 0.15) %set + 0.015) 0~80V 1.6mV	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω~1000 1.25Ω~5kΩ: 1mS(35) 20 μS(35) 100Ω: ±(0.5% 5kΩ: ±(0.5% 0~16V 0.32mV ±(0.025%set	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 0W/16V) 60W/80V) %set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ: 20μS(35) 0.5μS(35) 5kΩ:±(0.59 200kΩ:±(0.59 0~125V 2.5mV ±(0.025%set	% F.S. 00mA/µs 0A/µs 1A/µs + 50µs) 350W/125V) (350W/500V) 0W/125V) 0W/500V) 6set + 0.02S) 6set + 0.005S) 0~500V 10mV + 0.025% F.S.)
MEASUREMEN VOLTAGE REA	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy NDBACK Range	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS(6.667μS(1 300Ω : ±(0.59 0~16V 0.32mV ±(0.025%set	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 1000W/80V) 96set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.)	0.8 ~ 20 0.8 m 0.3Ω~1.2kΩ 15Ω~60kΩ 83.333μS(1.666μS(3 1.2kΩ: ±(0.59) 0~16V 0.32mV	±0.4° 0mA/μs A/μs ±(10% 1(30W/16V) (30W/80V) (30W/80V) (30W/80V) (36set + 0.15) 6set + 0.015) 0~80V 1.6mV ±(0.025%set	0.1mA % F.S. 6.4 ~ 164 6.4m + 50μs) 0.0375Ω-150 1.875Ω-7.5kd 0.666mS(2 13.333μS(2 150Ω: ±(0.55 7.5kΩ: ±(0.55) 0~16V 0.32mV + 0.025% F.S.)	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) 96set + 0.15) 6set + 0.015) 0~80V 1.6mV	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω-100x 1.25Ω-5kΩ 1mS(35) 20 μS(35) 100Ω: ±(0.5) 5kΩ: ±(0.5) 0~16V 0.32mV ±(0.025%set	2mA % F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 60W/80V) %set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35) 5kΩ : ±(0.59) 200kΩ: ±(0.59) 200kΩ: ±(0.59) 4(0.025%set	6 F.S. 10mA/μs 1A/μs + 50μs) 350W/125V) (350W/500V) 0W/500V) 6set + 0.025) 6set + 0.005S) 0~500V 10mV + 0.025% F.S.)
MEASUREMEN VOLTAGE REA	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy	0.1mA ±0.43 3.2 ~ 80 3.2m ±(10% 0.075Ω~300c 3.75Ω~15kΩ 0.333mS(6.667μS(1 300Ω : ±(0.59 0~16V 0.32mV ±(0.025%set 0~2A 0.04mA	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 100W/80V) %set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.}	0.8 ~ 20 0.8 m 0.3Ω~1.2kΩ 15Ω~60kΩ 83.333μS(1.666μS(3 1.2kΩ: ±(0.59) 0~16V 0.32mV	5mA ±0.49 0mA/µs A/µs ±(10% 0(30W/16V) (30W/80V) (30W/80V) (30W/80V) (36set + 0.01S) 0~80V 1.6mV ±(0.025%set	0.1mA % F.S. 6.4 ~ 160 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.666mS(2 13.333yS(2) 150Ω : ±(0.59 7.5kΩ: ±(0.59 0~16V 0.32mV + 0.025% F.S.)	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) %set + 0.15) %set + 0.015) 0~80V 1.6mV	0.2mA ±0.49 0.01 - : 0.01 ±(10% 0.025Ω-1000 1.25Ω-5kΩ: 1mS(35: 20 μS(35: 100Ω: ±(0.5% 5kΩ: ±(0.5% 0~16V 0.32mV ±(0.025%set - 0.7A 0.14mA	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 0W/16V) 00W/16V) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.) 0~70A 1.4mA	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ 20μS(35) 0.5μS(35) 5kΩ : ±(0.59 200kΩ: ±(0.59 200kΩ: ±(0.59 4(0.025%set	6 F.S. 00mA/μs A/μs + 50μs) 350W/125V) (350W/500V) 0W/500V) 6set + 0.02S) 6set + 0.005S) 0~500V 10mV + 0.025% F.S.)
MEASUREMEN VOLTAGE REA CURRENT REA	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy NDBACK	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS(6.667μS(1 300Ω : ±(0.59 0~16V 0.32mV ±(0.025%set	1mA 6 F.S. 0mA/µs A/µs + 50µs) 0(100W/16V) (100W/80V) 100W/80V) %set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.}	0.8 ~ 20 0.8 m 0.3Ω~1.2kΩ 15Ω~60kΩ 83.333μS(1.666μS(3 1.2kΩ: ±(0.59) 0~16V 0.32mV	±0.4° 0mA/μs A/μs ±(10% 1(30W/16V) (30W/80V) (30W/80V) (30W/80V) (36set + 0.15) 6set + 0.015) 0~80V 1.6mV ±(0.025%set	0.1mA % F.S. 6.4 ~ 160 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.666mS(2 13.333yS(2) 150Ω : ±(0.59 7.5kΩ: ±(0.59 0~16V 0.32mV + 0.025% F.S.)	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) 96set + 0.15) 6set + 0.015) 0~80V 1.6mV	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω~100x 1.25Ω~5kΩ 1mS(35) 20 μS(35) 100Ω : ±(0.5) 5kΩ: ±(0.5) 0~16V 0.32mV ±(0.025%set ···	2mA 6 F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 0W/16V) 00W/16V) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.) 0~70A 1.4mA	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35) 5kΩ : ±(0.59) 200kΩ: ±(0.59) 200kΩ: ±(0.59) 4(0.025%set	6 F.S. 00mA/μs A/μs + 50μs) 350W/125V) (350W/500V) 0W/500V) 6set + 0.025) 6set + 0.005S) 0~500V 10mV + 0.025% F.S.)
MEASUREMEN VOLTAGE REA	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy	0.1mA ±0.49 3.2 ~ 80 3.2m ±(10% 0.075Ω~3000 3.75Ω~15kΩ 0.333mS(6.667μS(1 300Ω : ±(0.59 0~16V 0.32mV ±(0.025%set 0~2A 0.04mA ±(0.05%set +	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 1000W/80V) 96set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.) 0~20A 0.4mA -0.05% F.S.*2)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ 15Ω-60kΩ 83.333μS(1.666μS(: 1.2kΩ: ±(0.59) 0~16V 0.32mV	5mA ±0.4° 0mA/μs A/μs ±(10% 1(30W/16V) (30W/80V) (30W/80V) (30W/80V) 56set + 0.15) 6set + 0.015) 0~80V 1.6mV ±(0.025%set 5A mA ±(0.05%set +	0.1mA % F.S. 6.4 ~ 164 6.4m + 50μs) 0.0375Ω-150 1.875Ω-7.5k 0.666mS(2 13.333μS(1 150Ω: ±(0.59 7.5kΩ: ±(0.59 0~16V 0.32mV + 0.025% F.S.)	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) 96set + 0.1S) 0~80V 1.6mV	0.2mA ±0.49 0.01 ~: 0.01 ±(10% 0.025Ω-1000 1.25Ω-5kΩ: 1mS(35) 20 μS(35) 100Ω: ±(0.5% 5kΩ: ±(0.5% 0~16V 0.32mV ±(0.025%set ··· 0~7A 0.14mA ±(0.05%set ···	2mA % F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 0W/80V) %set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.} 0~70A 1.4mA 0.05% F.S.*2)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ: 20µS(35) 0.5µS(35) 5kΩ:±(0.59 200kΩ:±(0.59 200kΩ:±(0.59 4(0.025%set + 4) 0.02mA ±(0.05%set + 4)	% F.S. 10mA/µs 1A/µs 14 50µs) 350W/125V) 350W/500V) 0W/125V) 0W/500V) 6set + 0.025) 6set + 0.005S) 0~500V 10mV + 0.025% F.S.] 0~10A 0.2mA
MEASUREMEN YOLTAGE REAL	Current Resolution Current Accuracy ESISTANCE MODE Slew Rate Slew Rate Resolution Slew Rate Accuracy of Setting Resistance Setting Range Resistance Resolution Resistance Accuracy NT NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy NDBACK Range Resolution Accuracy NDBACK	0.1mA ±0.43 3.2 ~ 80 3.2m ±(10% 0.075Ω~300c 3.75Ω~15kΩ 0.333mS(6.667μS(1 300Ω : ±(0.59 0~16V 0.32mV ±(0.025%set 0~2A 0.04mA	1mA 6 F.S. 0mA/μs A/μs + 50μs) 0(100W/16V) (100W/80V) 1000W/80V) 96set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S.) 0~20A 0.4mA -0.05% F.S.*2)	0.8 ~ 20 0.8 m 0.3Ω-1.2kΩ 15Ω-60kΩ 83.333μS(1.666μS(: 1.2kΩ: ±(0.59) 0~16V 0.32mV	5mA ±0.4° 0mA/μs A/μs ±(10%) 1(30W/16V) (30W/80V) (30W/80V) 9%set + 0.15) 6set + 0.015) 0~80V 1.6mV ±(0.025%set + 30W	0.1mA % F.S. 6.4 ~ 160 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.4m 6.666mS(2 13.333yS(2) 150Ω : ±(0.59 7.5kΩ: ±(0.59 0~16V 0.32mV + 0.025% F.S.)	1mA 00mA/μs nA/μs Ω(250W/16V) Ω(250W/80V) 250W/80V) %set + 0.15) %set + 0.01S) 0~80V 1.6mV 0~40A 0.8mA	0.2mA ±0.49 0.01 - : 0.01 ±(10% 0.025Ω-1000 1.25Ω-5kΩ: 1mS(35: 20 μS(35: 100Ω: ±(0.5% 5kΩ: ±(0.5% 0~16V 0.32mV ±(0.025%set - 0.7A 0.14mA	2mA % F.S. 2.8A/µs A/µs + 50µs) 0(350W/16V) (350W/80V) 0W/16V) 60W/80V) %set + 0.1S) 6set + 0.01S) 0~80V 1.6mV + 0.025% F.S. 0~70A 1.4mA 0.05% F.S.*2)	0.05mA ±0.49 1.6 ~ 40 1.6m ±(10% 1.25Ω~5kΩ(50Ω~200kΩ(20μS(35) 0.5μS(35) 5kΩ : ±(0.59) 200kΩ: ±(0.59) 200kΩ: ±(0.59) 0~125V 2.5mV ±(0.025%set + 0.02mA ±(0.05%set + 0.05)	6 F.S. 00mA/μs A/μs + 50μs) 350W/125V) (350W/500V) 0W/500V) 6set + 0.02S) 6set + 0.005S) 0~500V 10mV + 0.025% F.S.)



PEL-2000A(B) Series

PEL-2004A Rear Panel



PEL-2004B Rear Panel



PEL-2020A Rear Panel



PEL-2020B Rear Panel



SPECI	FICATIONS										
		PEL-20	20A(B)		PEL-2	030A(B)		PEL-20	40A(B)	PEL-20	41A(B)
PROTECTIV		•	` '			. ,			, ,		` '
Over Power	Protection	13	5.0			238		586		16	
	Range	1~10	02W	0.9~3	0.6W	1.25-	-255W	1.75~	-357W	1.75~	357W
	Resolution	0.5	W	0.1	5W	1.25W		1.7	75W	1.75W	
	Accuracy	±(2%set +	0.25%F.S)	±(2%set +	0.25%F.S)	±(2%set + 0.25%F.S)		±(2%set +	0.25%F.S)	±(2%set +	0.25%F.S)
Over Current	Protection										100,000
	Range	0.25~20.4A		0.0625	5~5.1A	0.5~	40.8A	0.875	~71.4A	0.125-	-10.2A
	Resolution	0.05A		0.01	25A	0.	.1A	0.1	75A	0.02	25A
	Accuracy	±(2%set + 0.25%F.S)		±(2%set +	0.25%F.S)	±(2%set +	- 0.25%F.S)	±(2%set +	-0.25%F.S)	±(2%set +	0.25%F.S)
Over Voltage	Protection	10-	(a)	100	(CA) (V	130	500	100	400	0.00	1/21
g	Range	1-8	1.6V	1-8	1.6V	1-8	1.6V	1-81.6V		2.5~510V	
	Resolution	0.3	2V	0.2	2V	0.2V		0.2V		1.25V	
	Accuracy	±(2%set +	0.25%F.S)	±(2%set + 0.25%F.S) ±(2%set + 0.25%		0.25%F.S)	±(2%set + 0.25%F.S)		±(2%set + 0.25%F.S)		
	Over Temperature	≒8:	5°C	485°C			≒85℃		≒85°C		
	Protection										
Rated Power											
	Value	11			3W		5W		5W	385W	
	Accuracy	±59	6set	±59	6set	±55	%set	±55	Kset .	±59	6set
GENERAL											
SHORT CIR						-			-	-	
	Current (CC)	≒2.2/2A	≒22/20A		5/5A	14.4/4A	≒44/40A	≒7.7/7A	≒77/70A	≒1.1/1A	≒11/10A
	Voltage (CV)	≒ 0V	≒ 0V	=	OV	≒ 0V	≒ 0V	≒ 0V	≒ 0V	≒ 0V	≒ 0V
	Resistance (CR)	≒3.75Ω	≒0.075Ω	≒15Ω	≒0.3Ω	≒1.875Ω	≒0.0375Ω	≒1.25Ω	≒0.025Ω	≒50Ω	≒1.25Ω
	STANCE (LOAD OFF)	500kΩ (Typical)						80. 5.52.53.62			7.7.2.11
POWER SO	JRCE	100-120Vac/ 200-2	240Vac (90-132Vac)	180-250Vac), 47 –	63Hz						
WEIGHT		Approx. 3.8kg	***	ACCOUNTS TO	1000						
DIMENSION	IS & WEIGHT (PEL-2002A(B))	272(W) x 200(H) :	: 581 (D) mm; Appro	x. 17.1kg (Full mod	fules)						
DIMENSION	45 & WEIGHT (PEL-2004A(B))	435(W) x 200(H) :	581 (D) mm; Appro	x. 28.4kg (Full mod	fules)						

ORDERING INFORMATION

PEL-2020A(B) Dual Channel Module, (0~80V, 0~20A, 100W) x 2

PEL-2030A(B) Dual Channel Module, (1~80V, 0~5A, 30W)+(1~80V, 0~40A, 250W)

PEL-2040A(B) Single Channel Module, (0~80V, 0~70A, 350W)

PEL-2041A(B) Single Channel Module, (0~500V, 0~10A, 350W)

PEL-2004A(B) 4-Slot Programmable D.C. Electronic Load Mainframe

PEL-2002A(B) 2-Slot Programmable D.C. Electronic Load Mainframe

Note: Load module cannot be used without a mainframe

ACCESSORIES:

PEL-2002A(B)/2004A(B) User Manual x1, Power Cord x1

PEL-2020A(B)/2030A(B)/2040A(B)/2041A(B) GTL-120 Test Lead x 1, GTL-121 Sense Lead x 1

* PEL-003 x 3 (PEL-2004A(B)); PEL-003 x 1 (PEL-2002A(B))

OPTIONAL ACCESSORIES

PEL-001	GPIB Card	GTL-248	GPIB Cable (2m)
PEL-002	PEL-2000A(B) Series Rack Mount Kit	GTL-249	Frame Link Cable
PEL-003	Panel Cover	GTL-246	USB Cable, USB 2.0 A-B TYPE CABLE, 4P

PEL-016 LAN Card (for PEL-2000A(B) Main Frame) GTL-232 RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm

D107

MODULARIZED STRUCTURE/PROGRAM & INTERFACE

Modularized Structure

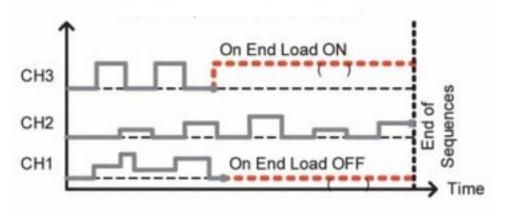
PEL-2004A(B) is a 4-slot mainframe with a master control unit made to hold 4 load modules, and PEL-2002A(B) is a 2-slot mainframe with a master control unit made to hold 2 load modules. The modularized structure of the PEL-2000A(B) Series allows any combination of mainframe and load module (PEL-2020A(B), PEL-2030A(B), PEL-2040A(B), PEL-2041A(B)) to be integrated into a custom-tailored system.

Multiple loads within the same mainframe can be connected in parallel to perform both static and dynamic tests. This flexibility makes the PEL-2000A(B) Series a very cost-effective instrument for testing a broad range of power supply outputs.

Program & Interface

The PEL-2000A(B) Series supports a total of 12 different programs and 10 sequences to each program. With a total of up to 120 different configurations. For external control and system configuration, the PEL-Series has USB and RS-232 interfaces as standard and GPIB as an option. The LabView driver and Data Logging PC software are supported for all the interfaces available. Each channel has an analog control/monitoring connector to externally turn a load on/off and to externally monitor load input current and voltage.

B. AUTOMATICALLY SEQUENCE FUNCTION



Sequence - On End Load

The figure above shows the current waveform of a simulation using the sequence function.

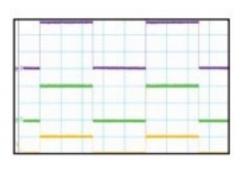
The Sequence function allows each channel to change its load sink according to a predefined sequence at a rate of up to $100\,\mu s$ per step. Each sequence is able to run concurrently, under the control of one clock. This is one of the most powerful features of the PEL-2000B Series as it is able to realistically simulate a multi-output power supply load. Under Dynamic mode, the load current or load resistance pulses between two preset levels at a pre-defined speed up to $25\,\mu s$ per step. This is often used as the standard test procedure to verify the response of a power supply to quick load changes.

The picture above is an example of a sequence used as a load profile for a single output switching power supply. A load profile is programmed to simulate the current drawn of a power supply load.

By using a current probe to acquire a current waveform, PEL-2000A(B)

Series is able to evaluate the performance of a power supply based on the load sequence that is programmed. An oscilloscope is then used to display the result.

C. PARALLEL DYNAMIC LOADING



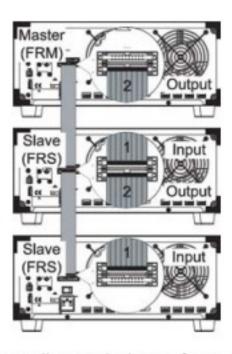
Twisted Pair DUT

Dynamic Test

Wire Connection

All the load channels in a PEL-2000A(B) Series mainframe can be connected in parallel to perform any combination of static or dynamic loading. Under Dynamic mode, the load current or load resistance pulses between two preset levels at a predefined speed of up to 25 µs per step. When the channels are connected in parallel, dynamic tests are synchronously clocked. The ability to perform parallel dynamic loading gives you the flexibility to perform dynamic tests to high-power power supplies without the need for a dedicated high power electronic load.

D. FRAMELINK



The PEL-2000A(B) Series allows multiple mainframes to be linked together with standard MIL 20-pin connectors to provide higher power load capacity. A maximum of 5 mainframes, including one master and 4 slaves, can be chained together to give a 7kW load capacity for high current and high power applications.



PEL-5000C Series





FEATURES

- * Maximum Power up to 192kW
- * Up to 8 units of Master/Slave Parallel Control
- * 5-digit Digital Voltage, Current and Power Meter
- * Large LCD Display
- * Display Voltage Value, Current Value, Watt Value at the Same Time
- * Suitable for Power Factor Regulator (PFC) Testing (600V, 1200V Models)
- * Automatically Perform OCP, OPP Test
- * The Power-on State Value Can be Set
- * Constant Current, Constant Resistance, Constant Voltage, Constant Power, Constant Current + Constant Voltage, Constant Power + Constant Voltage, Dynamic and Short Circuit Modes
- * Short Circuit Time Can be Set During Short Circuit Test
- * Over Current, Over Power, Over Temperature Protection and Over Voltage Warning
- * Voltage Polarity Display Can be Set to Positive Value ("+") or Negative Value ("-")
- * Support Solar Panel MPPT Test
- * Optional Interface: GPIB, RS232, USB, LAN

Rear Panel



GW Instek PEL-5000C series single-channel electronic load provides 150V/ 600V/ 1200V models with a power range of 6kW~24kW. PEL-5000C has a total of 24 models featuring different combinations of power, voltage, and current. It can test and verify the specifications of batteries, electric vehicle chargers/charging stations, electric vehicle batteries and solar panels. PEL-5000C supports parallel connection for same voltage specification and different power models. PEL-5000C can support up to 8 units connected in parallel to provide a maximum power of 192kW.

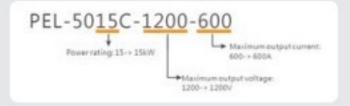
For the scenario of battery testing, PEL-5000C specifically provides four battery discharge modes, namely CC+CV battery discharge test mode, CP+CV battery discharge test mode, CC+ UVP battery discharge test mode. Users can choose a suitable test mode according to the test requirements. In addition to the four battery discharge modes, PEL-5000C also provides Time period discharge, Pulse discharge, and RAMP discharge modes. Users can set the discharge time, or discharge in the pulse current mode, or even set the rising/falling slew rate of the discharge current. These functions can be very flexible in the simulation of the battery discharge current waveform when an electric vehicle is running.

In order to meet the verification requirements of different DUTs, PEL-5000C provides a variety of test functions, including inrush current test mode, solar panel MPPT test mode, automated OCP, OPP test functions and 150 sets of parameter storage function. The 1200V model of PEL-5000C not only provides full power output at 1000V, but also provides 60% power output at 1200V output, which is higher than the 50% power output of other manufacturers of similar electronic loads. High-voltage batteries or chargers directly connected to the electronic load may cause damage to the electronic load. PEL-5000C has a built-in slow starter, which not only protects the DC load, but also saves the user's installation cost and setting time for measurement.

The communication interfaces supported by PEL-5000C include GPIB, RS232, USB, and LAN. The power, voltage and current of each model are shown in the following table:

ORDERING INFORMATION

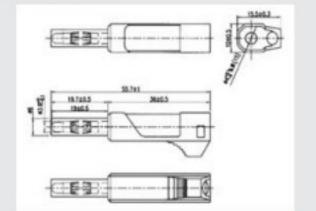
PEL-5006C-150-600	150V/600A/6kW	High Power DC	Electronic Load
PEL-5008C-150-800	150V/800A/8kW	High Power DC	Electronic Load
PEL-5010C-150-1000	150V/1000A/10kW		Electronic Load
PEL-5012C-150-1200	150V/1200A/12kW		Electronic Load
PEL-5015C-150-1500	150V/1500A/15kW	High Power DC	Electronic Load
PEL-5018C-150-1800	150V/1800A/18kW	High Power DC	Electronic Load
PEL-5020C-150-2000	150V/2000A/20kW	High Power DC	Electronic Load
PEL-5024C-150-2000	150V/2000A/24kW	High Power DC	Electronic Load
PEL-5006C-600-420	600V/420A/6kW	High Power DC	Electronic Load
PEL-5008C-600-560	600V/560A/8kW	High Power DC	Electronic Load
PEL-5010C-600-700	600V/700A/10kW	High Power DC	Electronic Load
PEL-5012C-600-840	600V/840A/12kW	High Power DC	Electronic Load
PEL-5015C-600-1050	600V/1050A/15kW	High Power DC	Electronic Load
PEL-5018C-600-1260	600V/1260A/18kW	High Power DC	Electronic Load
PEL-5020C-600-1400	600V/1400A/20kW	High Power DC	Electronic Load
PEL-5024C-600-1680	600V/1680A/24kW	High Power DC	Electronic Load
PEL-5006C-1200-240	1200V/240A/6kW	High Power DC	Electronic Load
PEL-5008C-1200-320	1200V/320A/8kW	High Power DC	Electronic Load
PEL-5010C-1200-400	1200V/400A/10kW	High Power DC	Electronic Load
PEL-5012C-1200-480	1200V/480A/12kW	High Power DC	Electronic Load
PEL-5015C-1200-600	1200V/600A/15kW	High Power DC	Electronic Load
PEL-5018C-1200-720	1200V/720A/18kW	High Power DC	Electronic Load



STANDARD ACCESSORIES

PEL-5000C Series operation manual BANANA PLUGS: Please refer to Fig.1 x 1 BNC – BNC CABLE: BNC to BNC CABLE, 1m x 1 HD-DSUB: 15PIN Parallel wire Parallel Wire x 1

1200V/800A/20kW



OPTIONAL ACCESSORIES

PEL-5020C-1200-800

PEL-5024C-1200-960

GPIB Card PEL-030 GPIB+RS-232 Card PEL-022 USB Cable, USB 2.0, A-B Type, 1200mm PEL-023 RS-232 Card GTL-246 PEL-024 GPIB Cable, Double Shielded, 2000mm LAN Card GTL-248 PEL-025 USB Card GTL-250 GPIB Cable, Double Shielded, 600mm PEL-026 Hook Ring x 4

1200V/960A/24kW High Power DC Electronic Load

High Power DC Electronic Load

PEL-027-1 Rack Mount Kit For PEL-5006C

PEL-027-2 Rack Mount Kit For PEL-5008C, PEL-5010C, PEL-5012C

PEL-027-3 Rack Mount Kit For PEL-5015C, PEL-5018C PEL-027-4 Rack Mount Kit For PEL-5020C, PEL-5024C

PEL-028 HANDLES, U-shaped Handle (fixed to the bracket)



PEL-5006C-150-600 PEL-5006C-600-420 PEL-5006C-1200-240



PEL-5008C-150-800 PEL-5008C-600-560 PEL-5008C-1200-320



PEL-5010C-150-1000 PEL-5010C-600-700 PEL-5010C-1200-400



PEL-5012C-150-1200 PEL-5012C-600-840 PEL-5012C-1200-480



PEL-5015C-150-1500 PEL-5015C-600-1050 PEL-5015C-1200-600



PEL-5018C-150-1800 PEL-5018C-600-1260 PEL-5018C-1200-720



PEL-5020C-150-2000 PEL-5020C-600-1400 PEL-5020C-1200-800



PEL-5024C-150-2000 PEL-5024C-600-1680 PEL-5024C-1200-960

Power / Voltage	150V		600V		1200V	
6kW	PEL-5006C-150-600	(600A)	PEL-5006C-600-420	(420A)	PEL-5006C-1200-240	(240A)
8kW	PEL-5008C-150-800	(800A)	PEL-5008C-600-560	(560A)	PEL-5008C-1200-320	(320A)
10kW	PEL-5010C-150-1000 ((1000A)	PEL-5010C-600-700	(700A)	PEL-5010C-1200-400	(400A)
12kW	PEL-5012C-150-1200 ((1200A)	PEL-5012C-600-840	(840A)	PEL-5012C-1200-480	(480A)
15kW	PEL-5015C-150-1500 ((1500A)	PEL-5015C-600-1050	(1050A)	PEL-5015C-1200-600	(600A)
18kW	PEL-5018C-150-1800 ((1800A)	PEL-5018C-600-1260	(1260A)	PEL-5018C-1200-720	(720A)
20kW	PEL-5020C-150-2000 ((2000A)	PEL-5020C-600-1400	(1400A)	PEL-5020C-1200-800	(800A)
24kW	PEL-5024C-150-2000 ((2000A)	PEL-5024C-600-1680	(1680A)	PEL-5024C-1200-960	(960A)

PEL-022 GPIB Card



PEL-024 LAN Card





PEL-026 Hook Ring



PEL-027-1~4 Rack Mount Kit



PEL-028 Handles







High Power DC Electronic Load

SPECIFICATIONS										
MODEL	PEL-5006	C-150-600	PEL-5008	C-150-800	PEL-50100	-150-1000	PEL-50120	C-150-1200		
Power*1	6 k			kW		cW .		kW		
Current	0 ~ 60A	0 - 600A	0 - 80A	0 - 800A	0 ~ 100A 150V	0 ~ 1000A	0 ~ 120A	0 - 1200A		
Min. Operating Voltage	0.7V €	600A	0.7V 8		0.7V ®	1000A	0.7∀ ⊚	1200A		
Protections				2000	Contract Con					
Over Power Protection (OPP) Over Current Protection (OCP)	2				5% 4%					
Over Voltage Protection (OVP)	S				5%					
Over Temp Protection (OTP)					±5°C					
Constant Current Mode			V.							
Range ^{†2} Resolution	60A	600A 9.6mA	80A 1.28mA	800A 12.8mA	100A 1.6mA	1000A	120A	1200A		
Accuracy*3	0.96mA	9.bmA	1.28mA		etting + Range)	16mA	1.92mA	19.2mA		
Constant Resistance Mode		9	23			5	88	ou ii		
Range	15000Ω~0.25Ω	0.25Ω~0.0012Ω	11250Ω~0.1875Ω	0.1875Ω~0.0009Ω	9000Ω~0.15Ω	0.15Ω~0.0007Ω	7500Ω~0.125Ω	0.125Ω~0.0006Ω		
Resolution Accuracy	66.666µS	4.167μΩ	88.888µS	3.125μΩ +0.2% of (Sa)	111.111µS tting + Range)	2.5μΩ	133.333µS	2.084μΩ		
Constant Voltage Mode				10.270 01 (36)	tting + kange)			- 1		
Range				-15	0V					
Resolution	7				mV					
Accuracy Constant Power Mode				± 0.05% of (Se	etting + Range)					
Range	600W	6000W	800W	8000W	1000W	10000W	1200W	12000W		
Resolution	9.6mW	96mW	12.8mW	128mW	16mW	160mW	19.2mW	192mW		
Accuracy	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of		
Constant Voltage Mode + C	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)		
Range	150V	600A	150V	800A	150V	1000A	150V	1200A		
Resolution	2.5mV	9.6mA	2.5mV	12.8mA	2.5mV	3.2mA	2.5mV	19.2mA		
Accuracy		1-		± 1.0% of (Se	tting + Range)					
Constant Voltage Mode + C Range	150V	6000W	150V	8000W	150V	10000W	150V	12000W		
Resolution	2.5mV	96mW	2.5mV	128mW	2.5mV	160mW	2.5mV	192mW		
Accuracy			•	± 1.0% of (Se	tting + Range)		•	•		
Surge Test Surge & Normal current										
Surge time		00A 000ms		-800A 1000ms		000A 000ms		200A 000ms		
Surge step			.,	10~1000ms 10~1000ms 10~1000ms 10~1000ms						
				1	-5					
MPPT Mode										
Algorithm				P8	k0					
Algorithm Load mode			1	P8 C	&O CV	5				
Algorithm Load mode P&O interval Dynamic Mode			1	P8 C	k0	5				
Algorithm Load mode P&O interval Dynamic Mode Timing				P8 C 000ms~60000ms	&O :V ; resolution 1000m					
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow				P8 C 000ms~60000ms 0.010~9.999 / 99.9	&O :V ; resolution 1000m					
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution				P8 000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0	&O :V ; resolution 1000m					
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate	0.0144A~0.9A/µs	0.144A~9A/μs	0.0192A~1.2A/µs	0.000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs	20 27 39 / 999.9 / 9999m 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.024A~1.5A/µs	s0.24A~15A/μs	0.0288A~1.8A/μs	0.288A~18A/μs		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution	0.0144A~0.9A/μs 0.0036A/μs	0.144A~9A/μs 0.036A/μs	(P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs	29 / 999.9 / 9999m 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.024A~1.5A/µs 0.006A/µs	s	0.0288A~1.8A/µs 0.0072A/µs	0.288A~18A/μs 0.072A/μs		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time			0.0192A~1.2A/µs	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs	20 27 39 / 999.9 / 9999m 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.024A~1.5A/µs	s0.24A~15A/μs				
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current			0.0192A~1.2A/µs	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs	29 / 999.9 / 9999m 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.024A~1.5A/µs 0.006A/µs	s0.24A~15A/μs				
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution	0.0036A/µs	0.036A/µs	0.0192A~1.2A/μs 0.0048A/μs	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs	20 27 39 / 999.9 / 9999m 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.024A~1.5A/µs 0.006A/µs (typical)	s 0.24Α~15Α/μs 0.06Α/μs	0.0072A/μs	0.072A/μs		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement	0.0036A/µs 0~60A	0.036A/μs 60~600A	0.0192A~1.2A/μs 0.0048A/μs 0~80A	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A	20 (v) (resolution 1000m) (1 / 0.1 / 1ms) (1 / 0.1 / 1ms) (1 / 0.1 / 1ms) (2 / 1ms + 50ppm) (3 / 1ms + 50ppm) (4 / 1006A/μs) (5 / 1006A) (6 / 1006A)	s 0.24Α~15Α/μs 0.06Α/μs 100~1000Α	0.0072A/μs 0~120A	0.072A/μs 120~1200A		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back	0.0036A/μs 0~60A 0.96mA	0.036A/μs 60~600A 9.6mA	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA	20 27 39 / 999.9 / 9999m 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.024A~1.5A/µs 0.006A/µs (typical) 0~100A 1.6mA	0.24A~15A/μs 0.06A/μs 100~1000A 16mA	0.0072A/μs 0~120A 1.92mA	0.072A/μs 120~1200A 19.2mA		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement	0.0036A/µs 0~60A	0.036A/μs 60~600A	0.0192A~1.2A/μs 0.0048A/μs 0~80A	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A	20 (v) (resolution 1000m) (1 / 0.1 / 1ms) (1 / 0.1 / 1ms) (1 / 0.1 / 1ms) (2 / 1ms + 50ppm) (3 / 1ms + 50ppm) (4 / 1006A/μs) (5 / 1006A) (6 / 1006A)	s 0.24Α~15Α/μs 0.06Α/μs 100~1000Α	0.0072A/μs 0~120A	0.072A/μs 120~1200A		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy	0.0036A/µs 0~60A 0.96mA	0.036A/μs 60~600A 9.6mA	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA	20 27 39 / 999.9 / 9999m 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.024A~1.5A/μs 0.006A/μs (typical) 0~100A 1.6mA	s 0.24A~15A/μs 0.06A/μs 100~1000A 16mA	0.0072A/μs 0~120A 1.92mA	0.072A/μs 120~1200A 19.2mA		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back	0.0036A/µs 0~60A 0.96mA 0-15V 0.25mV	0.036A/μs 60~600A 9.6mA 15~150V 2.5mV	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re	20 CV; resolution 1000m; resol	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy	0.0036A/µs 0~60A 0.96mA 0~15V 0.25mV	0.036A/μs 60~600A 9.6mA 15~150V 2.5mV	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re	20 27 39 / 999.9 / 9999m 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.024A~1.5A/μs 0.006A/μs (typical) 0~100A 1.6mA	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back	0.0036A/µs 0~60A 0.96mA 0-15V 0.25mV	0.036A/μs 60~600A 9.6mA 15~150V 2.5mV	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re	20 CV; resolution 1000m; resol	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back	0.0036A/µs 0~60A 0.96mA 0-15V 0.25mV 0-60A 0.96mA	0.036A/μs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re	20 CV; resolution 1000m 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.024A~1.5A/μs 0.006A/μs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital)	0.0036A/µs 0~60A 0.96mA 0-15V 0.25mV 0-60A 0.96mA	0.036A/μs 60~600A 9.6mA 15~150V 2.5mV	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re	20 (V); resolution 1000m 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.024A~1.5A/μs 0.006A/μs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back	0.0036A/µs 0~60A 0.96mA 0-15V 0.25mV 0-60A 0.96mA	0.036A/μs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re	20 CV; resolution 1000m 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.024A~1.5A/μs 0.006A/μs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Ceneral Typical Short Resistance	0.0036A/µs 0~60A 0.96mA 0~15V 0.25mV 0~60A 0.96mA	0.036A/μs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re	20 CV; resolution 1000m 1 / 0.1 / 1ms 1 / 0.1 / 1ms 1 / 0.1 / 1ms 1 0.024A~1.5A/µs 1 0.006A/µs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA ading + Range)	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back	0.0036A/µs 0~60A 0.96mA 0~15V 0.25mV 0~60A 0.96mA	0.036A/µs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re 00W ± 0.06% of (Re	20 CV; resolution 1000m 29 / 999.9 / 9999m 1 / 0.1 / 1ms 29 / 1ms + 50ppm 20.024A~1.5A/µs 20.006A/µs 20.006A/µs 20.006A 20.000A 20.000	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA	0.072A/µs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Ceneral Typical Short Resistance Maximum Short Current Load ON Voltage	0.0036A/µs 0~60A 0.96mA 0~15V 0.25mV 0~60A 0.96mA	0.036A/µs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA	0.0192A~1.2A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re 00W ± 0.06% of (Re	20 CV; resolution 1000m 29 / 999.9 / 9999m 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.024A~1.5A/μs 0.006A/μs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA ading + Range) 100 eading + Range)	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back	0.0036A/µs 0~60A 0.96mA 0-15V 0.25mV 0-60A 0.96mA 600	0.036A/µs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA	0.0192A~1.2A/μs 0.0048A/μs 0.0048A/μs 0~80A 1.28mA 0~15V 0.25mV	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.0 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re 00W ± 0.06% of (Re	20 CV; resolution 1000m 29 / 999.9 / 9999m 1 / 0.1 / 1ms 29 / 1ms + 50ppm 20.024A~1.5A/µs 20.006A/µs 20.006A/µs 20.006A 20.000A 20.000	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV 100~1000A 16mA	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Couracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Ceneral Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD)	0.0036A/µs 0~60A 0.96mA 0~15V 0.25mV 0~60A 0.96mA 600 600 445.6x481	0.036A/µs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA	0.0192A~1.2A/µs 0.0048A/µs 0.0048A/µs 0~80A 1.28mA 0~15V 0.25mV 0.25mV 0.80A 1.28mA	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re 00W ± 0.06% of (Re 009Ω 00A 0.25 - 0 ~ 00VA 1x757.3mm	20 CV; resolution 1000m 29 / 999.9 / 9999m 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.024A~1.5A/µs 0.006A/µs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA ading + Range) 100 eading + Range) 0-100A 1.6mA 20-15V 20-100A	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV 100~1000A 16mA	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA 1.92mA	0.072A/µs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA 0000W		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Couracy	0.0036A/µs 0~60A 0.96mA 0~15V 0.25mV 0~60A 0.96mA 600 445.6x481 341.6x445	0.036A/µs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA 00W	0.0192A~1.2A/µs 0.0048A/µs 0.0048A/µs 0~80A 1.28mA 0~15V 0.25mV 0.80A 1.28mA 0.000 800 92: 571.6x481 467.6x445	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re 80~800A 12.8mA ±0.05% of (Re 00W ± 0.06% of (Re 009Ω 00A 0.25 ~ 0 ~ 0VA 1x757.3mm 2x757.3mm	09 / 999.9 / 9999m 1 / 0.1 / 1ms 1 / 0.1 / 1ms 1 / 0.1 / 1ms 1 0.024A~1.5A/µs 1 0.006A/µs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA ading + Range) 100 eading + Range) 0-100A 1.6mA 467.6x445.3	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV 100~1000A 16mA	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA 1.92mA 1.92mA	0.072A/μs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA 000W		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Couracy	0.0036A/µs 0~60A 0.96mA 0~15V 0.25mV 0~60A 0.96mA 600 445.6x481 341.6x445	0.036A/µs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA	0.0192A~1.2A/µs 0.0048A/µs 0.0048A/µs 0~80A 1.28mA 0~15V 0.25mV 0.80A 1.28mA 0.000 800 92: 571.6x481 467.6x445	P8 (0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re 00W ± 0.06% of (Re 009Ω 00A 0.25 - 0 ~ 0 0VA 1×757.3mm 2×757.3mm 5 kg	09 / 999.9 / 9999m 1 / 0.1 / 1ms 1 / 0.1 / 1ms 1 / 0.024A~1.5A/µs 0.006A/µs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA ading + Range) 0-100A 1.6mA 3.6mA 4.6mA 4.6x445.2 467.6x445.2 84.3	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV 100~1000A 16mA	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA 1.92mA 1.92mA	0.072A/µs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA 000W		
Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Couracy	0.0036A/µs 0~60A 0.96mA 0~15V 0.25mV 0~60A 0.96mA 600 445.6x481 341.6x445	0.036A/µs 60~600A 9.6mA 15~150V 2.5mV 60~600A 9.6mA 00W	0.0192A~1.2A/µs 0.0048A/µs 0.0048A/µs 0~80A 1.28mA 0~15V 0.25mV 0.80A 1.28mA 0.000 800 92: 571.6x481 467.6x445	P8 (0) 000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.192A~12A/µs 0.048A/µs 66.7µs 80~800A 12.8mA 15~150V 2.5mV ±0.025% of (Re 00W ± 0.06% of (Re 009Ω 00A 0.25 - 0 ~ 600A 12.8mm 2x757.3mm 5 kg 0—4	09 / 999.9 / 9999m 1 / 0.1 / 1ms 1 / 0.1 / 1ms 1 / 0.1 / 1ms 1 0.024A~1.5A/µs 1 0.006A/µs (typical) 0~100A 1.6mA 0~15V 0.25mV eading + Range) 0-100A 1.6mA ading + Range) 100 eading + Range) 0-100A 1.6mA 467.6x445.3	0.24A~15A/μs 0.06A/μs 100~1000A 16mA 15~150V 2.5mV 100~1000A 16mA	0.0072A/µs 0~120A 1.92mA 0~15V 0.25mV 0-120A 1.92mA 1.92mA 1.92mA	0.072A/µs 120~1200A 19.2mA 15~150V 2.5mV 120~1200A 19.2mA 000W 006Ω 000A 0VA x757.3mm 2x757.3mm		

Cooling : Advanced Fan Cooled

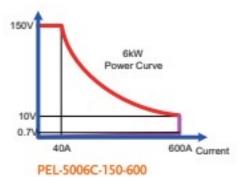
Input AC Power: 100-240 Vac ±10% , 50/60Hz, Single-phase

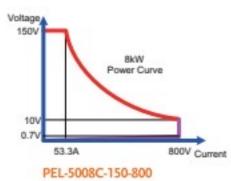
Note st1 : The power rating specifications at ambient temperature = 25 °C

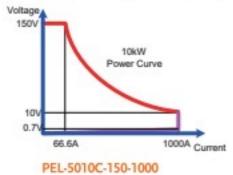
Note *2 : The range is automatically or forcing to range II only in CC Mode

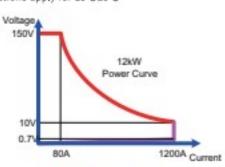
Note *3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S.

Note *4 : Operating temperature range is 0-40°C * all specifications apply for 25°C±5°C









010C-150-1000 PEL-5012C-150-1200

SPECIFICATIONS											
MODEL	PEL-5015C	-150-1500	PEL-5018C	-150-1800	PEL-50200	-150-2000	PEL-50240	C-150-2000			
Power°1	15k	W	18	kW	20	kW	24	kW			
Current	0 150A	0 1500A	0 ~ 180A	0 - 1800A	0 ~ 200A	0 - 2000A	0 200A	0 ~ 2000A			
Voltage Min. Operating Voltage	0.7V @	15004	0.77/ 6	0 ~ > 1800A	150V	2000A	0.71/ 6	2000A			
Protections	0.77 8	1300M	0.77 8	7 1800M	0.77 6	2000A	0.77 8	y 2000A			
Over Power Protection (OPP)				10	05%						
Over Current Protection (OCP)					04%						
Over Voltage Protection (OVP)					05%						
Over Temp Protection (OTP) Constant Current Mode				907	C±5°C						
Range ⁵²	150A	1500A	180A	1800A	200A	2000A	200A	2000A			
Resolution	2.4mA	24mA	2.88mA	28.8mA	3.2mA	32mA	3.2mA	32mA			
Accuracy*3				± 0.05% of (Set	tting + Range)						
Constant Resistance Mode).					
Range	6000Ω~0.1Ω	0.1Ω~0.0005Ω	5000Ω~0.0833Ω	0.0833Ω~0.0004Ω	4500Ω~0.075Ω	0.075Ω~0.0004Ω	4500Ω~0.075Ω	0.075Ω~0.0004Ω			
Resolution Accuracy	166.666µS	1.667μΩ	200µS	1.389μΩ +0.2% of (Set	222.22µS tting + Range)	1.25μΩ	222.22µS	1.25μΩ			
Constant Voltage Mode				10.270 01 (56)	tting + Kange)						
Range				15	50V						
Resolution					imV						
Accuracy				± 0.05% of (Se	etting + Range)						
Constant Power Mode Range	1500W	15000W	1800W	18000W	2000W	20000W	2400W	24000W			
Resolution	24mW	240mW	28.8mW	288mW	2000W 32mW	320mW	38.4mW	384mW			
	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of			
Accuracy	(Setting+Range)	(Setting+Range)		(Setting+Range)		(Setting+Range)	(Setting+Range)	(Setting+Range)			
Constant Voltage Mode + Co											
Range Resolution	150V	1500A	150V	1800A 28.8mA	150V	2000A	150V	2000A			
Accuracy	2.5mV	24mA	2.5mV		2.5mV tting + Range)	32mA	2.5mV	32mA			
Constant Voltage Mode + Co	enstant Power Mode	e		2 11070 01 (00	renig + Nange/						
Range	150V	15000W	150V	18000W	150V	20000W	150V	24000W			
Resolution	2.5mV	240mW	2.5mV	288mW	2.5mV	320mW	2.5mV	384mW			
Accuracy				± 1.0% of (Se	tting + Range)						
Surge Test Surge & Normal current	0-15	004	0_	1800A	0-20	100A	0-20	000A			
Surge time											
Surge step	10-1000ms 10~1000ms 10~1000ms 10~1000ms										
			1-7								
MPPT Mode											
MPPT Mode Algorithm				P.E	%o						
MPPT Mode Algorithm Load mode				P.E.	%O	e					
MPPT Mode Algorithm Load mode P&O interval			1	P.E.	%o	s					
MPPT Mode Algorithm Load mode			1	P.E.	%O	S					
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode				P& C 000ms-60000ms 0.010-9.999 / 99.9	&O CV ; resolution 1000m						
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution				P8 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01	&O CV ; resolution 1000m 99 / 999.9 / 9999m						
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy	0.0364. 2.2544	0.2604.72.546.0		P8 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ	&O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms µs / 1ms + 50ppm	5	0.0484.241	0.484.204/			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate	0.036A~2.25A/µs	0.360A~22.5A/μs	0.0432A~2.7A/μs	P8 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs	&O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/µs	0.48A~30A/μs	0.048A~3A/μs	0.48A~30A/µs			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy	0.036A~2.25A/μs 0.009A/μs	0.360A~22.5A/μs 0.09A/μs		P& C000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs	&O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs	5	0.048A~3A/μs 0.012A/μs	0.48A~30A/μs 0.12A/μs			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution			0.0432A~2.7A/μs 0.0108A/μs	P& C 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs	&O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/µs	0.48A~30A/μs	0.012A/µs				
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range	0.009A/μs 0~150A	0.09A/μs 150~1500A	0.0432A~2.7A/μs 0.0108A/μs 0~180A	P8 0000ms~60000ms; 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs	&O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical)	0.48A~30A/μs 0.12A/μs 200~2000A	0.012A/μs 0~200A	0.12A/μs 200~2000A			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution	0.009A/µs	0.09A/µs	0.0432A~2.7A/μs 0.0108A/μs	P& C 0000ms~60000ms 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs	&O CV ; resolution 1000m P9 / 999.9 / 9999m: 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.048Α~3Α/μs 0.012Α/μs (typical)	0.48Α~30Α/μs 0.12Α/μs	0.012A/µs	0.12A/μs			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement	0.009A/μs 0~150A	0.09A/μs 150~1500A	0.0432A~2.7A/μs 0.0108A/μs 0~180A	P8 0000ms~60000ms; 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs	&O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical)	0.48A~30A/μs 0.12A/μs 200~2000A	0.012A/μs 0~200A	0.12A/μs 200~2000A			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution	0.009A/μs 0~150A	0.09A/μs 150~1500A	0.0432A~2.7A/μs 0.0108A/μs 0~180A	P8 0000ms~60000ms; 0.010~9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs	&O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical)	0.48A~30A/μs 0.12A/μs 200~2000A	0.012A/μs 0~200A	0.12A/μs 200~2000A			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution	0.009A/μs 0~150A 2.4mA	0.09A/μs 150~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA	P8 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA	&O CV ; resolution 1000m 09 / 999.9 / 9999m: 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA	0.48A~30A/μs 0.12A/μs 200~2000A 32mA	0.012A/μs 0~200A 3.2mA	0.12A/μs 200~2000A 32mA			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy	0.009A/μs 0~150A 2.4mA	0.09A/μs 150~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA	P8 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA	&O CV ; resolution 1000m 99 / 999.9 / 9999m; 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA	0.48A~30A/μs 0.12A/μs 200~2000A 32mA	0.012A/μs 0~200A 3.2mA	0.12A/μs 200~2000A 32mA			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV	0.09A/µs 150~1500A 24mA 15~150V 2.5mV	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV	P& 0000ms~60000ms; 0.001 / 0.01 1µs / 10µs / 100; 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re	&O CV ; resolution 1000m e9 / 999.9 / 9999m: 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range)	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV	0.12A/μs 200~2000A 32mA 15~150V 2.5mV			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV	0.09A/µs 150~1500A 24mA 15~150V 2.5mV	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV	P8 0000ms-60000ms 0.000ms-60000ms 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re	&O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range)	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV	0.12A/μs 200~2000A 32mA 15~150V 2.5mV			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV	0.09A/µs 150~1500A 24mA 15~150V 2.5mV	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV	P8 0000ms-60000ms 0.000ms-60000ms 0.001 / 0.01 1µs / 10µs / 100µs 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Ref	&O CV ; resolution 1000m e9 / 999.9 / 9999m: 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range)	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV	0.12A/μs 200~2000A 32mA 15~150V 2.5mV			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0-150A 2.4mA	0.09A/µs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV	P8 0000ms-60000ms 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re	&O CV ; resolution 1000m 99 / 999.9 / 9999m 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0~200A 3.2mA	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA	0.12A/μs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV	0.09A/µs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV	P8 C0000ms-60000ms 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re 180~1800A 28.8mA ± 0.05% of (Re	&O CV ; resolution 1000m 99 / 999.9 / 9999m; 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0-200A 3.2mA eading + Range)	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA	0.12A/μs 200~2000A 32mA 15~150V 2.5mV			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0-150A 2.4mA	0.09A/µs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV	P8 C0000ms-60000ms 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re 180~1800A 28.8mA ± 0.05% of (Re	&O CV ; resolution 1000m 99 / 999.9 / 9999m 1 / 0.1 / 1ms μs / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0~200A 3.2mA	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA	0.12A/μs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Ceneral	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0~150A 2.4mA	0.09A/µs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV	P& COMMS—60000ms COMMS—600000ms COMMS—60000ms COMMS—60000ms COMMS—60000ms COMMS—600000ms COMMS—6000000ms COMMS—6000000ms COMMS—6000000ms COMMS—6000000ms COMMS—6000000ms COMMS—60000000ms COMMS—600000000ms COMMS—6000000000ms COMMS—600000000000000000000000000000000000	&O CV ; resolution 1000m P9 / 999.9 / 9999m: 1 / 0.1 / 1ms ps / 1ms + 50ppm 0.048A~3A/ps 0.012A/ps (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) Pading + Range	0.48A~30A/µs 0.12A/µs 200~2000A 32mA 15~150V 2.5mV	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA	0.12A/μs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0-150A 2.4mA	0.09A/μs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV 0-180A 2.88mA	P& COMMS—60000ms (COMMS—60000ms - 60000ms - 60000ms - 60000ms (COMMS—60000ms (COMMS—60000ms (COMMS—60000ms - 60000ms - 600000ms - 60000ms - 600000ms - 6000000ms - 600000000ms - 600000000000000000000000000000000000	&O CV ; resolution 1000m 99 / 999.9 / 9999m; 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0-200A 3.2mA eading + Range)	0.48A~30A/µs 0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0-200A 3.2mA	0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0~150A 2.4mA	0.09A/μs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV 0-180A 2.88mA	P8 C0 0000ms-60000ms 3 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Recover) 180~1800A 28.8mA ± 0.05% of (Recover)	&O CV ; resolution 1000m 99 / 999.9 / 9999m; 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0-200A 3.2mA eading + Range)	0.48A~30A/µs 0.12A/µs 200~2000A 32mA 15~150V 2.5mV	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0-200A 3.2mA	0.12A/μs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0-150A 2.4mA 1500	0.09A/μs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV 0-180A 2.88mA	P8 C0 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re 180~1800A 28.8mA ± 0.05% of (Re 004Ω 004Ω 004Ω 004Ω 004Ω 004Ω	&O CV ; resolution 1000m 99 / 999.9 / 9999m; 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 2000 ading + Range) ading + Range) 2000 ading + Range)	0.48A~30A/µs 0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA 240 0.00 20	0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Load ON Voltage Load OFF Voltage Power Consumption	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0~150A 2.4mA 1500	0.09A/μs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV 0-180A 2.88mA 180 0.000 184	P δ C 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1 μs / 10 μs / 100 μ 0.432A~27A/μs 0.108A/μs 66.7 μs 180~1800A 28.8 mA 15~150V 2.5 mV ±0.025% of (Re 180~1800A 28.8 mA ± 0.05% of (Re 00W ± 0.06% of (Re 00A 0.25 ~ 0~6	&O CV ; resolution 1000m 99 / 999.9 / 9999m 1 / 0.1 / 1ms µs / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0-200A 3.2mA eading + Range) 200 eading + Range)	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA 240 0.00	0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 000W			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Ceneral Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD)	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0~150A 2.4mA 1500 132 760.6x481	0.09A/μs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA 00W	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV 0-180A 2.88mA 180 0.00 184	P δ C 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1 μs / 10 μs / 10 0 μ 0.432A~27A/μs 0.108A/μs 66.7 μs 180~1800A 28.8 mA 15~150V 2.5 mV ±0.025% of (Re 180~1800A 28.8 mA ± 0.05% of (Re 00W ± 0.06% of (Re 00A 0.25 ~ 0 ~ 6 00VA	&O CV ; resolution 1000m 99 / 999.9 / 9999m 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/μs 0.012A/μs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0-200A 3.2mA eading + Range) 200 eading + Range)	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 00W	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA 240 0.00 20 170 886.6x481	0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 000W			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Ceneral Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxD(Nx included Rath Mount Rx,wheels)	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0-150A 2.4mA 1500 132 760.6x481 656.6x445.	0.09A/μs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA 00W 05Ω 00A 0VA x757.3mm 2x757.3mm	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV 0-180A 2.88mA 180 0.00 184 132 760.6x481 656.6x445	P8 C0 000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re 180~1800A 28.8mA ± 0.05% of (Re 00W ± 0.06% of (Re 004Ω 00A 0.25 ~ 60VA 1×757.3mm 2×757.3mm 2×757.3mm	8-O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0-200A 3.2mA 200 eading + Range) 200 cading + Range) 0.00 200 62.5V 62.5V 62.5V 62.6×445	0.48A~30A/µs 0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 00W	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA 240 0.00 20 170 886.6x481 782.6x445	0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 000W			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Congresion Accuracy Power Read Back Range (5 Digital) Accuracy Congresion Accuracy Congresion Congresion Congresion Current Coad ON Voltage Power Consumption Dimension (HxWxD) HxWxD(Nx included Rath Mount Rx,wheels) Weight	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0-150A 2.4mA 1500 132 760.6x481 656.6x445.	0.09A/μs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA 00W	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV 0-180A 2.88mA 180 0.00 184 132 760.6x481 656.6x445	P8 C0 000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re 180-1800A 28.8mA ± 0.05% of (Re 00W ± 0.06% of (Re 004Ω 00A 0.25 ~ 0 ~ 6 00VA 1x757.3mm 4 kg	8-O CV ; resolution 1000m 89 / 999.9 / 9999m: 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0-200A 3.2mA 200 eading + Range) 200 cading + Range) 0.00 200 62.5V 62.5V 62.5V 62.5V 62.6×445. 140.	0.48A~30A/μs 0.12A/μs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 00W	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA 240 0.00 20 170 886.6x481 782.6x445	0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 000W			
MPPT Mode Algorithm Load mode P&O interval Dynamic Mode Timing Thigh & Tlow Resolution Accuracy Slew Rate Resolution Min. Rise Time Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Conserved C	0.009A/μs 0~150A 2.4mA 0~15V 0.25mV 0-150A 2.4mA 1500 132 760.6x481 656.6x445.	0.09A/μs 150~1500A 24mA 15~150V 2.5mV 15~1500A 24mA 00W 05Ω 00A 0VA x757.3mm 2x757.3mm	0.0432A~2.7A/μs 0.0108A/μs 0~180A 2.88mA 0~15V 0.25mV 0-180A 2.88mA 180 0.00 184 132 760.6x481 656.6x445	P8 C0 0000ms-60000ms 0.010-9.999 / 99.9 0.001 / 0.01 1µs / 10µs / 100µ 0.432A~27A/µs 0.108A/µs 66.7µs 180~1800A 28.8mA 15~150V 2.5mV ±0.025% of (Re 180~1800A 28.8mA ± 0.05% of (Re 00W ± 0.06% of (Re 004Ω 00A 0.25 ~ 0 ~ 6 00VA 1x757.3mm 4 kg 0~4	8-O CV ; resolution 1000m 99 / 999.9 / 9999m: 1 / 0.1 / 1ms us / 1ms + 50ppm 0.048A~3A/µs 0.012A/µs (typical) 0~200A 3.2mA 0~15V 0.25mV eading + Range) 0-200A 3.2mA 200 eading + Range) 200 cading + Range) 0.00 200 62.5V 62.5V 62.5V 62.6×445	0.48A~30A/µs 0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 00W	0.012A/μs 0~200A 3.2mA 0~15V 0.25mV 0~200A 3.2mA 240 0.00 20 170 886.6x481 782.6x445	0.12A/µs 200~2000A 32mA 15~150V 2.5mV 200~2000A 32mA 000W			

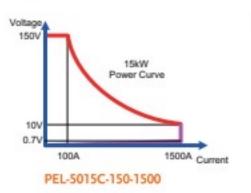
Cooling : Advanced Fan Cooled

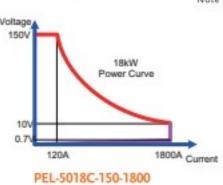
Input AC Power: 100~240 Vac ±10% ' 50/60Hz, Single-phase

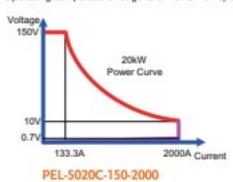
Note *2 : The range is automatically or forcing to range II only in CC Mode

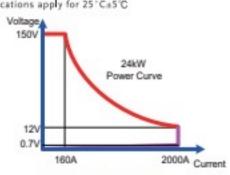
Note *3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S.

Note *4 : Operating temperature range is 0–40 °C * all specifications apply for 25 °C a5 °C









PEL-5024C-150-2000

High Power DC Electronic Load

SPECIFICATIONS											
MODEL	PEL-5006	5C-600-420	PEL-5008	C-600-560	PEL-5010	C-600-700	PEL-5012	C-600-840			
Power*1		W		kW		kW		kW			
Current Voltage	0 ~ 42A	0 420A	0 - 56A	0 ~ 560A	0 ~ 70A 600V	0 - 700A	0 84A	0 840A			
Min. Operating Voltage Protections	10V 6	® 420A	10V @	560A		700A	10V @	840A			
Over Power Protection (OPP)					5%						
Over Current Protection (OCP) Over Voltage Protection (OVP)					4%						
Over Temp Protection (OTP)					5% ±5°C						
Constant Current Mode				,,,,,							
Range*2	42A	420A	56A	560A	70A	700A	84A	840A			
Resolution Accuracy*3	0.672mA	6.72mA	0.896mA	8.96mA + 0.05% of /Se	1.12mA etting + Range)	11.2mA	1.334mA	13.44mA			
Constant Resistance Mo	ode		2 2	1 0.0370 01 (30	tting + kangej		ji	90			
Range	85712Ω~1.42853Ω	1.42853Ω-0.02384Ω	64284Ω~1.0714Ω	1.0714Ω-0.01788Ω		0.85712Ω~0.014304Ω	42856Ω-0.714267Ω	0.714267Ω~0.01192Ω			
Resolution	11.6669µS	23.84μΩ	15.5559µS	17.88μΩ	19.4449µS	14.304μΩ	23.3339µS	11.92μΩ			
Accuracy Constant Voltage Mode				±0.2% of (Set	ting + Kange)						
Range				60	0V						
Resolution					mV						
Accuracy Constant Power Mode		± 0.05% of (Setting + Range)									
Range	600W	6000W	800W	8000W	1000W	10000W	1200W	12000W			
Resolution	9.6mW	96mW	12.8mW	128mW	16mW	160mW	19.2mW	192mW			
Accuracy	± 0.2% of (Setting+Range)		± 0.2% of (Setting+Range)	± 0.1% of (Setting+Range)	± 0.2% of (Setting+Range)	± 0.1% of (Setting+Range)	± 0.2% of (Setting+Range)	± 0.1% of (Setting+Range)			
Constant Voltage Mode			coord	7.504	5001	7004	5001	0.00			
Range Resolution	600V 10mV	420A 6.72mA	600V 10mV	560A 8,96mA	600V 10mV	700A 11.2mA	600V 10mV	840A 13.44mA			
Accuracy			101111		tting + Range)	11.2.1114	101117	12.441114			
Constant Voltage Mode											
Range Resolution	600V 10mV	6000W 96mW	600V 10mV	8000W 128mW	600V 10mV	10000W 160mW	600V 10mV	12000W 192mW			
Accuracy	101114	30mw	TOMY		tting + Range)	Toomw	TOTAL	192mw			
Surge Test	30	det v	1 100	tions the		Johnson to		Tapone -			
Surge & Normal current Surge time		120A 000ms		000ms		700A 000ms		340A 000ms			
Surge step	10~1	oooms	10~1		~5	oooms	10-1	oooms			
MPPT Mode				500							
Algorithm Load mode					&O						
P&O interval					; resolution 1000m	is .					
Dynamic Mode											
Timing Thigh & Tlow				0.010-0.000 / 00.0	99 / 999.9 / 9999m						
Resolution					1 / 0.1 / 1ms	3					
Accuracy				1µs / 10µs / 100	μs / 1ms + 50ppm						
Slew Rate Resolution	0.0288~1.8A/μs 0.0072A/μs	0.288A~18A/µs	0.0288A~1.8A/µs	0.288A~18A/µs		0.336A~21A/µs	0.0384A~2.4/µs	0.384A~24A/µs			
Current	0.0072A/µs	0.072A/µs	0.0072A/μs	0.072A/µs	0.0084A/µs	0.084A/µs	0.0096A/µs	0.096A/µs			
Range	0~42A	42~420A	0~56A	56~560A	0~70A	70~700A	0~84A	84~840A			
Resolution	0.672mA	6.72mA	0.896mA	8.96mA	1.12mA	11.2mA	1.334mA	13.34mA			
Measurement Voltage Read Back								V			
Range (5 Digital)	0~60V	60~600V	0~60V	60~600V	0~60V	60~600V	0~60V	60~600V			
Resolution	1mV	10mV	1mV	10mV	1mV	10mV	1mV	10mV			
Accuracy Current Read Back				±0.025% of (Re	ading + Range)						
Range (5 Digital)	0-42A	42-420A	0-56A	56-560A	0-70A	70-700A	0-84A	84-840A			
Resolution	0.672mA	6.72mA	0.896mA	8.96mA	1.12mA	11.2mA	1.334mA	13.34mA			
Accuracy Power Read Back				±0.05% of (Rea	ading + Range)						
Range (5 Digital)	60	00W	800	oow	100	00W	120	00W			
Accuracy					ading + Range)						
General	0.0	2200	0.00	700		420	0.00	1300			
Typical Short Resistance Maximum Short Current		239Ω 20A		79Ω 0A		43Ω 0A		120Ω 0A			
Load ON Voltage			30	0.4 -	100V						
Load OFF Voltage					100V						
Power Consumption Dimension (HxWxD))VA x757.3mm	92(571 6v481	VA x757.3mm	920 571,6x481x		920 571.6x481x	NAME AND ADDRESS OF THE OWNER, WHEN PERSON O			
HxWxD[Not included Rack Mount Kit, wheels]		2x757.3mm		2x757.3mm	467.6x445.2		467.6x445.2				
Weight	62	2 kg	77.	5 kg		8 kg	92	kg			
Temperature*4					10°C						
Safety & EMC					E .						

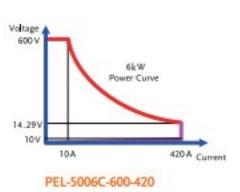
Cooling: Advanced Fan Cooled

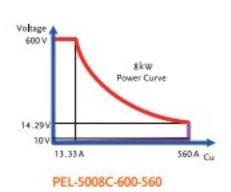
Input AC Power: 100~240 Vac ±10% , 50/60Hz, Single-phase

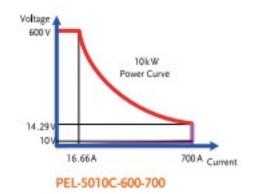
Note ± 1 : The power rating specifications at ambient temperature = 25 $^{\circ}$ C

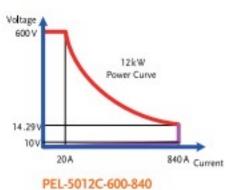
Note *2 : The range is automatically or forcing to range II only in CC Mode Note *3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S.

Note *4 : Operating temperature range is 0~40 °C * all specifications apply for 25 °C±5 °C









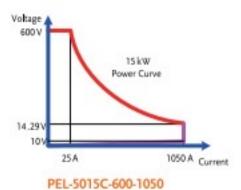
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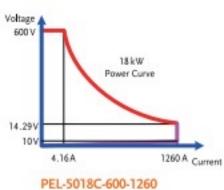
SPECIFICATIONS										
MODEL	PEL-501	5C-600-1050	PEL-5018	C-600-1260	PEL-5020C	-600-1400	PEL-5024C-600-1680			
Power*1		kW		kW		kW	24k W			
Current Voltage	0 ~ 105A	0 ~ 1050A	0 - 126A	0 - 1260A	0 ~ 140A	0 ~ 1400A	0 - 168A	0 ~ 1680A		
Min. Operating Voltage	10V @	1050A	10V @	0 ~ 0 1260A	10V @	14004	10V @	1680A		
Protections	104.6	1030A	104.6	1200A	104.6	1400A	104.6	TOOVA		
Over Power Protection (OPP)				105	5%					
Over Current Protection (OCP)				104						
Over Voltage Protection (OVP)				105						
Over Temp Protection (OTP)				90°C	±5°C					
Constant Current Mode Range*2	1054	10504	1264	12504	1404	14004	1604	16804		
Resolution	105A 1.68mA	1050A 16.8mA	126A 2.016mA	1260A 20.16mA	140A 2.24mA	1400A 22.4mA	168A 2.688mA	1680A 26.88mA		
Accuracy*3	1.001117	10.01111	2.0101111		etting + Range)	22.4117	2.0001115	20.001114		
Constant Resistance Mod	de	A.	30 00				00			
Range	34284.8~0.571413Ω	0.571413~0.009536Ω	28570.67~0.476178Ω	0.476178~0.007947Ω	25713.6~0.42856Ω	0.42856~0.007152Ω	21428~0.357133Ω	0.357133~0.00596Ω		
Resolution	29.1674µS	9.536μΩ	35.0009µS	7.947μΩ	38.8899µS	7.152μΩ	46.6679µS	5.96μΩ		
Accuracy				±0.2% of (Set	tting + Range)					
Constant Voltage Mode					014					
Range Resolution	600V 10mV									
Accuracy				± 0.05% of (Se						
Constant Power Mode			100 TE	1 0.0370 01 (30	tting + kange)					
Range	1500W	15000W	1800W	18000W	2000W	20000W	2400W	24000W		
Resolution	24mW	240mW	28.8mW	288mW	32mW	320mW	38.4mW	384mW		
Accuracy	± 0.2% of	± 0.1% of	± 0.2% of	± 0.1% of	± 0.2% of	± 0.1% of	± 0.2% of	± 0.1% of		
	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)		
Constant Voltage Mode		1050A	600V	1260A	600V	1400A	6001/	1680A		
Range Resolution	600V 10mV	16.8mA	10mV	20.16mA	10mV	22.4mA	600V 10mV	26.88mA		
Accuracy	TOMY	10.01116	TOMY	± 1.0% of (Set		22.4IIIA	101114	20.00IIIA		
Constant Voltage Mode -	Constant Powe	er Mode		2 110/0 01 (00)	- manger					
Range	600V	15000W	600V	18000W	600V	20000W	600V	24000W		
Resolution	10mV	240mW	10mV	288mW	10mV	320mW	10mV	384mW		
Accuracy				± 1.0% of (Set	tting + Range)					
Surge Test Surge & Normal current	0.1	0504	0.11	1004	0.1	1004	0.1	C004		
Surge time		050A 000ms		260A 000ms		400A 000ms		680A 000ms		
Surge step	10~10	Jovins	10-10		~5	Joonis	10-11	0001115		
MPPT Mode				-						
Algorithm				P8	ko					
Load mode					V					
P&O interval			1	000ms~60000ms;	resolution 1000m	15				
Dynamic Mode Timing										
Thigh & Tlow				0.010~9.999 / 99.9	9 / 999 9 / 9999m					
Resolution					/ 0.1 / 1ms	3				
Accuracy		Pa	3.0		is / 1ms + 50ppm			ur .		
Slew Rate	0.0432A-2.7A/µs	0.432A-27A/µs	0.048A-3A/µs	0.48A-30A/µs	0.0528A-3.3A/µs	0.528A-33A/µs	0.0576A-3.6A/µs	0.576A-36A/µs		
Resolution	0.0108A/µs	0.108A/µs	0.012A/µs	0.12A/µs	0.0132A/µs	0.132A/µs	0.0144A/µs	0.144A/µs		
Current										
Range Resolution							U 150V	168-16800		
Resolution	0~105A	105~1050A	0~126A	126~1260A	0~140A	140~1400A	0~168A	168~1680A		
Measurement	1.68mA	105~1050A 16.8mA	0~126A 2.016mA	126~1260A 20.16mA	0~140A 2.24mA	140~1400A 22.4mA	2.688mA	26.88mA		
Measurement Voltage Read Back										
Voltage Read Back										
	1.68mA	16.8mA	2.016mA	20.16mA	2.24mA	22.4mA	2.688mA	26.88mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy	1.68mA 0~60V	16.8mA 60~600V	2.016mA 0~60V	20.16mA 60~600V 10mV	2.24mA 0~60V	22.4mA 60~600V	2.688mA 0~60V	26.88mA 60~600V		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back	1.68mA 0~60V 1mV	16.8mA 60~600V 10mV	2.016mA 0~60V 1mV	20.16mA 60~600V 10mV ±0.025% of (Re	2.24mA 0~60V 1mV rading + Range)	22.4mA 60~600V 10mV	2.688mA 0~60V 1mV	26.88mA 60~600V 10mV		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital)	0~60V 1mV	16.8mA 60~600V 10mV	0~60V 1mV	20.16mA 60~600V 10mV ±0.025% of (Re	0~60V 1mV eading + Range)	22.4mA 60~600V 10mV	2.688mA 0~60V 1mV	26.88mA 60~600V 10mV		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution	1.68mA 0~60V 1mV	16.8mA 60~600V 10mV	2.016mA 0~60V 1mV	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA	0~60V 1mV ading + Range) 0~140A 2.24mA	22.4mA 60~600V 10mV	2.688mA 0~60V 1mV	26.88mA 60~600V 10mV		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy	0~60V 1mV	16.8mA 60~600V 10mV	0~60V 1mV	20.16mA 60~600V 10mV ±0.025% of (Re	0~60V 1mV ading + Range) 0~140A 2.24mA	22.4mA 60~600V 10mV	2.688mA 0~60V 1mV	26.88mA 60~600V 10mV		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution	0~60V 1mV 0~105A 1.68mA	16.8mA 60~600V 10mV	0~60V 1mV 0~126A 2.016mA	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA	0~60V 1mV ading + Range) 0~140A 2.24mA	22.4mA 60~600V 10mV 140~1400A 22.4mA	0~60V 1mV 0~168A 2.688mA	26.88mA 60~600V 10mV		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back	0~60V 1mV 0~105A 1.68mA	16.8mA 60~600V 10mV 105~1050A 16.8mA	0~60V 1mV 0~126A 2.016mA	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re	0~60V 1mV eading + Range) 0-140A 2.24mA ading + Range)	22.4mA 60~600V 10mV 140~1400A 22.4mA	0~60V 1mV 0~168A 2.688mA	26.88mA 60~600V 10mV 168~1680A 26.88mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General	0~60V 1mV 0~105A 1.68mA	16.8mA 60~600V 10mV 105~1050A 16.8mA	2.016mA 0~60V 1mV 0-126A 2.016mA	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re	2.24mA 0~60V 1mV eading + Range) 0~140A 2.24mA ading + Range)	22.4mA 60~600V 10mV 140~1400A 22.4mA	2.688mA 0~60V 1mV 0~168A 2.688mA	26.88mA 60~600V 10mV 168~1680A 26.88mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance	0~60V 1mV 0~105A 1.68mA	16.8mA 60~600V 10mV 105~1050A 16.8mA	0~60V 1mV 0-126A 2.016mA	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re 00W ± 0.06% of (Re	0~60V 1mV eading + Range) 0~140A 2.24mA ading + Range)	22.4mA 60~600V 10mV 140~1400A 22.4mA	0~60V 1mV 0~168A 2.688mA	26.88mA 60~600V 10mV 168~1680A 26.88mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current	0~60V 1mV 0~105A 1.68mA	16.8mA 60~600V 10mV 105~1050A 16.8mA	0~60V 1mV 0-126A 2.016mA	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re 00W ± 0.06% of (Re	2.24mA 0~60V 1mV eading + Range) 0-140A 2.24mA ading + Range) 2000 ading + Range)	22.4mA 60~600V 10mV 140~1400A 22.4mA	0~60V 1mV 0~168A 2.688mA	26.88mA 60~600V 10mV 168~1680A 26.88mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage	0~60V 1mV 0~105A 1.68mA	16.8mA 60~600V 10mV 105~1050A 16.8mA	0~60V 1mV 0-126A 2.016mA	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re 00W ± 0.06% of (Re	2.24mA 0~60V 1mV eading + Range) 0-140A 2.24mA ading + Range) 2000 ading + Range) 0.00 140	22.4mA 60~600V 10mV 140~1400A 22.4mA	0~60V 1mV 0~168A 2.688mA	26.88mA 60~600V 10mV 168~1680A 26.88mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage	0~60V 1mV 0~105A 1.68mA	16.8mA 60~600V 10mV 105~1050A 16.8mA	2.016mA 0~60V 1mV 0~126A 2.016mA	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re 00W ± 0.06% of (Re	2.24mA 0~60V 1mV eading + Range) 0~140A 2.24mA ading + Range) 2000 ading + Range) 0.00 140	22.4mA 60~600V 10mV 140~1400A 22.4mA 00W	2.688mA 0~60V 1mV 0~168A 2.688mA 2.40	26.88mA 60~600V 10mV 168~1680A 26.88mA 000W		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption	0~60V 1mV 0~105A 1.68mA	16.8mA 60~600V 10mV 105~1050A 16.8mA	2.016mA 0~60V 1mV 0~126A 2.016mA 180 0.00 120	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re 000W ± 0.06% of (Re 080Ω 50A 0.4 ~ 0 ~	2.24mA 0~60V 1mV eading + Range) 0-140A 2.24mA ading + Range) 2000 ading + Range) 0.00 140 100V	22.4mA 60~600V 10mV 140~1400A 22.4mA 00W	2.688mA 0~60V 1mV 0~168A 2.688mA 2.40	26.88mA 60~600V 10mV 168~1680A 26.88mA 000W		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage	0~60V 1mV 0~105A 1.68mA 1.68mA	16.8mA 60~600V 10mV 105~1050A 16.8mA	2.016mA 0~60V 1mV 0~126A 2.016mA 180 0.00 120 132 760.6x481	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re 00W ± 0.06% of (Re	2.24mA 0~60V 1mV eading + Range) 0-140A 2.24mA ading + Range) 2000 ading + Range) 0.00 140 100V 100V 170 886.6x481	22.4mA 60~600V 10mV 140~1400A 22.4mA 00W	2.688mA 0~60V 1mV 0~168A 2.688mA 2.40 0.00 16. 170 886.6x481	26.88mA 60~600V 10mV 168~1680A 26.88mA 000W		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxDNxiindudel Rack Mount Elywheels) Weight	0~60V 1mV 0~105A 1.68mA 150 0.00 109 132 760.6x481 656.6x445	16.8mA 60~600V 10mV 105~1050A 16.8mA 000W 096Ω 50A	2.016mA 0~60V 1mV 0~126A 2.016mA 180 0.00 120 132 760.6x481 656.6x445.	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re 000W ± 0.06% of (Re 80Ω 50A 0.4 ~ 0 ~ 0VA x757.3mm	2.24mA 0~60V 1mV eading + Range) 0-140A 2.24mA ading + Range) 2000 ading + Range) 0.00 140 100V 100V 170 886.6x481	22.4mA 60~600V 10mV 140~1400A 22.4mA 00W 72Ω 100A 0VA x757.3mm 2x757.3mm	2.688mA 0~60V 1mV 0~168A 2.688mA 240 170 886.6x481 782.6x445.	26.88mA 60~600V 10mV 168~1680A 26.88mA 00W 060Ω 80A		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxDiki included Rack Wount Silvebelss	0~60V 1mV 0~105A 1.68mA 150 0.00 109 132 760.6x481 656.6x445	16.8mA 60~600V 10mV 105~1050A 16.8mA 000W 096Ω 50A 20VA 1x757.3mm 2x757.3mm	2.016mA 0~60V 1mV 0~126A 2.016mA 180 0.00 120 132 760.6x481 656.6x445.	20.16mA 60~600V 10mV ±0.025% of (Re 126~1260A 20.16mA ± 0.05% of (Re 00W ± 0.06% of (Re 180Ω 50A 0.4 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0	2.24mA 0~60V 1mV eading + Range) 0~140A 2.24mA ading + Range) 2000 ading + Range) 140 100V 100V 170 886.6x445	22.4mA 60~600V 10mV 140~1400A 22.4mA 00W 72Ω 100A 0VA x757.3mm 2x757.3mm	2.688mA 0~60V 1mV 0~168A 2.688mA 240 170 886.6x481 782.6x445.	26.88mA 60~600V 10mV 168~1680A 26.88mA 00W 060Ω 80A 0VA x757.3mm 2x757.3mm		

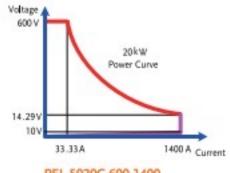
Cooling : Advanced Fan Cooled

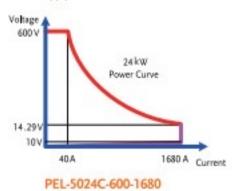
Input AC Power: 100~240 Vac ±10% , 50/60Hz, Single-phase

- Note ± 1 : The power rating specifications at ambient temperature = 25 °C
- Note ± 2 : The range is automatically or forcing to range II only in CC Mode
- Note ± 3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S.
- Note *4 : Operating temperature range is 0~40°C * all specifications apply for 25°C±5°C









PEL-5020C-600-1400

Simply Reliable | Good Will Instrument Co., Ltd.

High Power DC Electronic Load

SPECIFICATIONS										
MODEL	PEL-5006C	-1200-240	PEL-50080	C-1200-320	PEL-50100	-1200-400	PEL-50120	C-1200-480		
Power*1	6 k			W		kW		kW		
Current	0 ~ 24A	0 ~ 240A	0 ~ 32A	0 ~ 320A	0 ~ 40A	0 ~ 400A	0 ~ 48A	0 ~ 480A		
Voltage Min. Operating Voltage	15V @	240A	15V @	0 ~ 1 320A		400A	15V @	480A		
Protections				1970	NAME OF THE PARTY			9		
Over Power Protection (OPP) Over Current Protection (OCP)				105						
Over Voltage Protection (OVP)				104						
Over Temp Protection (OTP)				90°C:						
Constant Current Mode	244	2.22								
Range°2 Resolution	24A 0.384mA	240A 3.84mA	32A 0.512mA	320A 5.12mA	40A 0.64mA	400A 6.4mA	48A 0.768mA	480A 7.68mA		
Accuracy ⁶³	0.3041114	2.041114	0.3121117	± 0.05% of (Set)		0.41114	0.70011170	7.001117		
Constant Resistance Mo										
Range Resolution	30KΩ-5Ω 3.333μS	5Ω-0.0625Ω 83.334μΩ	22.5KΩ-3.75Ω 4.444μS	3.75Ω-0.0468Ω 62.5μΩ	18KΩ-3Ω 5.5555μS	3Ω-0.0375Ω 50μΩ	15KΩ-2.5Ω 6.6666μS	2.5Ω-0.0312Ω 41.667μΩ		
Accuracy	3.333µ3	65.554µ12	4,444µ3	±0.2% of (Set		30µ12	0.0000µ3	41.007µ12		
Constant Voltage Mode								1		
Range	1200V									
Resolution Accuracy	20mV ± 0.05% of (Setting + Range)									
Constant Power Mode				= 0.03% Of (Se	ting + range)		J			
Range	600W	6000W	800W	8000W	1000W	10000W	1200W	12000W		
Resolution	9.6mW	96mW	12.8mW	128mW	16mW	160mW	19.2mW	192mW		
Accuracy	± 0.1% of (Setting+Range)	± 0.1% of (Setting+Range)	± 0.1% of (Setting+Range)	± 0.1% of (Setting+Range)	± 0.1% of (Setting+Range)	± 0.1% of (Setting+Range)	± 0.1% of (Setting+Range)	± 0.1% of (Setting+Range)		
Constant Voltage Mode										
Range	1200V	240A	1200V	320A	1200V	400A	1200V	480A		
Resolution Accuracy	20mV	3.84mA	20mV	5.12mA ± 1.0% of (Set	20mV	6.4mA	20mV	7.68mA		
Constant Voltage Mode	+ Constant Power	er Mode		± 1.0/6 01 (Set	iting + Kange/		2			
Range	1200V	6000W	1200V	8000W	1200V	10000W	1200V	12000W		
Resolution	20mV	96mW	20mV	128mW	20mV	160mW	20mV	192mW		
Accuracy Surge Test				± 1.0% of (Set	ting + Kange)					
Surge & Normal current	0~2	40A	0~3	20A	0~4	00A	0~4	80A		
Surge time	10~10	00ms	10~10	000ms	10~10	100ms	10~1000ms			
Surge step MPPT Mode				1-	~5					
Algorithm	Ī			P8	0					
Load mode	1/4			C	٧					
P&O interval			1	000ms~60000ms ;	resolution 1000m	s				
Dynamic Mode Timing										
Thigh & Tlow				0.010~9.999 / 99.9	19 / 999.9 / 9999m	s		1		
Resolution					1 / 0.1 / 1ms					
Accuracy Slew Rate	0.0192A~1.2A/µs	0.192A-12A/µs	0.0192A~1.2A/µs		us / 1ms + 50ppm 0.0224A-1.4A/µs	0.224A-14A/µs	0.0256A~1.6A/µs	0.256A~16A/µs		
Resolution	0.0048A/µs	0.048A/µs	0.0048A/µs	0.048A/µs	0.0056A/µs	0.056A/µs	0.0236A~1.6A/μs	0.064A/µs		
Current										
Range	0~24A	24~240A	0~32A	32~320A	0~40A	40~400A	0~48A	48~480A		
Resolution				F 33 - 4			0.768mA	7.68mA		
Measurement	0.384mA	3.84mA	0.512mA	5.12mA	0.64mA	6.4mA	0.7001111	110011111		
Measurement Voltage Read Back	0.384mA	J.OHIIA	0.512mA	5.12mA		6.4mA				
Voltage Read Back Range (5 Digital)	0~120V	120~1200V	0~120V	120~1200V	0.64mA 0~120V	120~1200V	0~120V	120~1200V		
Voltage Read Back Range (5 Digital) Resolution	201			120~1200V 20mV	0.64mA 0~120V 2mV		s.			
Voltage Read Back Range (5 Digital)	0~120V	120~1200V	0~120V	120~1200V 20mV	0.64mA 0~120V	120~1200V	0~120V	120~1200V		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital)	0~120V	120~1200V	0~120V	120~1200V 20mV ±0.025% of (Re	0.64mA 0~120V 2mV eading + Range)	120~1200V	0~120V	120~1200V		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution	0~120V 2mV	120~1200V 20mV	0~120V 2mV	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA	120~1200V 20mV	0~120V 2mV	120~1200V 20mV		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy	0~120V 2mV	120~1200V 20mV 24~240A	0~120V 2mV	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA	0.64mA 0~120V 2mV eading + Range)	120~1200V 20mV 40~400A	0~120V 2mV	120~1200V 20mV 48~480A		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution	0~120V 2mV 0~24A 0.384mA	120~1200V 20mV 24~240A	0~120V 2mV 0~32A 0.512mA	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA	120~1200V 20mV 40~400A 6.4mA	0~120V 2mV 0~48A 0.768mA	120~1200V 20mV 48~480A		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy	0~120V 2mV 0~24A 0.384mA	120~1200V 20mV 24~240A 3.84mA	0~120V 2mV 0~32A 0.512mA	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA eading + Range)	120~1200V 20mV 40~400A 6.4mA	0~120V 2mV 0~48A 0.768mA	120~1200V 20mV 48~480A 7.68mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General	0~120V 2mV 0~24A 0.384mA	120~1200V 20mV 24~240A 3.84mA	0~120V 2mV 0~32A 0.512mA	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA ading + Range)	120~1200V 20mV 40~400A 6.4mA	0~120V 2mV 0~48A 0.768mA	120~1200V 20mV 48~480A 7.68mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy	0~120V 2mV 0~24A 0.384mA	120~1200V 20mV 24~240A 3.84mA	0~120V 2mV 0~32A 0.512mA	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA ading + Range)	120~1200V 20mV 40~400A 6.4mA	0~120V 2mV 0~48A 0.768mA	120~1200V 20mV 48~480A 7.68mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage	0~120V 2mV 0~24A 0.384mA	120~1200V 20mV 24~240A 3.84mA	0~120V 2mV 0~32A 0.512mA	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re 00W ± 0.06% of (Re	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA ading + Range) 1000 eading + Range)	120~1200V 20mV 40~400A 6.4mA	0~120V 2mV 0~48A 0.768mA	120~1200V 20mV 48~480A 7.68mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage	0~120V 2mV 0~24A 0.384mA 600	120~1200V 20mV 24~240A 3.84mA	0~120V 2mV 0~32A 0.512mA 800	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re 00W ± 0.06% of (Re	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA ading + Range) 1000 eading + Range) 0.03 40 - 240V	120~1200V 20mV 40~400A 6.4mA	0~120V 2mV 0~48A 0.768mA	120~1200V 20mV 48~480A 7.68mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption	0~120V 2mV 0~24A 0.384mA 600 24	120~1200V 20mV 24~240A 3.84mA	0~120V 2mV 0~32A 0.512mA 800	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re 00W ± 0.06% of (Re 00A 0.96 ~	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA ading + Range) 1000 eading + Range) 0.03 40 - 240V 240V	120~1200V 20mV 40~400A 6.4mA	0~120V 2mV 0~48A 0.768mA	120~1200V 20mV 48~480A 7.68mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxD(Not included Rack Mount Et,wheeld)	0~120V 2mV 0~24A 0.384mA 600 0.06 24	120~1200V 20mV 24~240A 3.84mA	0~120V 2mV 0~32A 0.512mA 800 0.04 32 571.6x481	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re 00W ± 0.06% of (Re	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA ading + Range) 1000 eading + Range) 0.03 40 - 240V 240V	120~1200V 20mV 40~400A 6.4mA 00W 75Ω 00A	0~120V 2mV 0~48A 0.768mA 120 0.03 48	120~1200V 20mV 48~480A 7.68mA		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxD(Not included Rack Mount Et, wheeky Weight	0~120V 2mV 0~24A 0.384mA 600 0.06 24 510 445.6x481 341.6x445.	120~1200V 20mV 24~240A 3.84mA 0W 25Ω 0A	0~120V 2mV 0~32A 0.512mA 800 0.04 32 571.6x481 467.6x445	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re 00W ± 0.06% of (Re 00A 0.96 ~ 0 ~ 0VA x757.3mm 2x757.3mm	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA ading + Range) 1000 eading + Range) 0.03 40 240V 240V 2571.6x481 467.6x445.	120~1200V 20mV 40~400A 6.4mA 00W 75Ω 0A 0VA x757.3mm	0~120V 2mV 0~48A 0.768mA 120 0.03 48 920 571.6x481 467.6x445.	120~1200V 20mV 48~480A 7.68mA 00W		
Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxD(Not included Rack Mount Et,wheeld)	0~120V 2mV 0~24A 0.384mA 600 0.06 24 510 445.6x481 341.6x445.	120~1200V 20mV 24~240A 3.84mA 0W 25Ω 0A 0VA x757.3mm 2x757.3mm	0~120V 2mV 0~32A 0.512mA 800 0.04 32 571.6x481 467.6x445	120~1200V 20mV ±0.025% of (Re 32~320A 5.12mA ±0.05% of (Re 00W ± 0.06% of (Re 00A 0.96 ~ 0 ~ 0VA x757.3mm 2x757.3mm	0.64mA 0~120V 2mV eading + Range) 0~40A 0.64mA ading + Range) 1000 eading + Range) 240V 240V 920 571.6x481: 467.6x445.: 84.8	120~1200V 20mV 40~400A 6.4mA 00W 75Ω 0A 0VA x757.3mm	0~120V 2mV 0~48A 0.768mA 120 0.03 48 920 571.6x481 467.6x445.	120~1200V 20mV 48~480A 7.68mA 00W		

Cooling: Advanced Fan Cooled

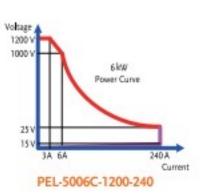
Input AC Power: 100~240 Vac ±10% , 50/60Hz, Single-phase

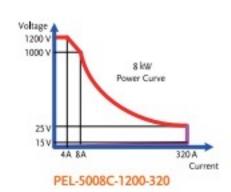
Note *1 : The power rating specifications at ambient temperature = 25°C

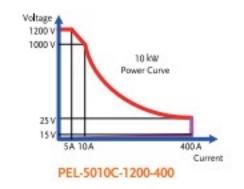
Note *2 : The range is automatically or forcing to range [] only in CC Mode

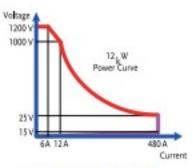
Note ± 3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S.

Note *4 : Operating temperature range is 0–40 $^{\circ}\text{C}^{\ \circ}$ all specifications apply for 25 $^{\circ}\text{C}_{\pm}5\,^{\circ}\text{C}$









PEL-5012C-1200-480

THE RESERVE TO SHARE THE PARTY OF THE PARTY										
MODEL	PEL-5015C		PEL-5018C-1200-720		PEL-5020C-1200-800		PEL-5024C-1200-960			
Power*1	15 k			kW	20k W		24kW			
Current Voltage	0 - 60A	0 - 600A	0 - 72A	0 - 720A 0 - 1	0 – 80A	0 800A	0 – 96A	0 – 960A		
Min. Operating Voltage	15V @	6004	15V @	720A	15V @	8004	15V @	960A		
Protections	137 6	000A	134.6	77200	137 6	8000	134.6	700A		
Over Power Protection (OPP)				105	5%					
Over Current Protection (OCP)				104	1%					
Over Voltage Protection (OVP)	4			104						
Over Temp Protection (OTP)				90°C:	±5°C					
Constant Current Mode		7001	701	7001	***	2004	241	0.04		
Range*2 Resolution	60A 0.96mA	600A 9.6mA	72A 1.152mA	720A 11.52mA	80A 1.28mA	800A 12.8mA	96A 1.536mA	960A 15.36mA		
Accuracy*3	0.96MA	9.0MA	1.132MM	± 0.05% of (Se		12.6MA	1.330mA	13.30MA		
Constant Resistance Mod	de			2 0.0370 01 (00	ting + nange)			100		
Range	12Ω~2Ω	2Ω~ 0.0250Ω	10ΚΩ~1.666Ω	1.666Ω~0.0208Ω	9ΚΩ~1.5Ω	1.5Ω~0.0187Ω	7.5ΚΩ~1.25Ω	1.25Ω~0.0156Ω		
Resolution	8.3333µS	33.334μΩ	10µS	27.778μΩ	11.111µ\$	25μΩ	13.333µS	20.834μΩ		
Accuracy				±0.2% of (Set	ting + Range)					
Constant Voltage Mode					0.000					
Range	1200V									
Resolution	20mV ± 0.05% of (Setting + Range)									
Accuracy Constant Power Mode				± 0.05% 01 (Se	tting + Kange)					
Range	1500W	15000W	1800W	18000W	2000W	20000W	2400W	24000W		
Resolution	24mW	240mW	28.8mW	288mW	32mW	320mW	38.4mW	384mW		
Accuracy	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of	± 0.1% of		
			(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range)	(Setting+Range		
Constant Voltage Mode +										
Range	1200V	600A	1200V	720A	1200V	800A	1200V	960A		
Resolution Accuracy	20mV	9.6mA	20mV	3.2mA	20mV	3.84mA	20mV	15.36mA		
Constant Voltage Mode +	Constant Power	r Mode		± 1.0% of (Set	ting + Kange)					
Range	1200V	15000W	1200V	18000W	1200V	20000W	1200V	24000W		
Resolution	20mV	240mW	20mV	288mW	20mV	320mW	20mV	384mW		
Accuracy				± 1.0% of (Set	ting + Range)					
Surge Test						2	0			
Surge & Normal current	060			20A	0-8			60A		
Surge time	10-10	00ms	10~10	000ms		00ms	10~10	000ms		
Surge step MPPT Mode				1-	-5					
Algorithm	(1)			D.S	20					
Load mode					V					
P&O interval			1	000ms-60000ms;	resolution 1000m	5				
Dynamic Mode	20									
Timing										
Thigh & Tlow			(
	0.010-9.999 / 99.99 / 9999ms									
Resolution					/ 0.1 / 1ms					
Resolution Accuracy	0.02004 3.04/1/2	0.200A 10A luc	0.0324.24/05	1μs / 10μs / 100μ	ıs / 1ms + 50ppm	A 2524 . 224 /us	0.03844 2.444	0.3844 244/00		
Resolution Accuracy Slew Rate	0.0288A~1.8A/μs		0.032A-2A/µs	1μs / 10μs / 100μ 0.32A-20A/μs	o.0352A~2.2A/μs	0.352A-22A/µs	0.0384A-2.4A/µs			
Resolution Accuracy	0.0288A~1.8A/μs 0.0072A/μs	0.288A-18A/μs 0.072A/μs	0.032A-2A/μs 0.008A/μs	1μs / 10μs / 100μ	ıs / 1ms + 50ppm	0.352A-22A/μs 0.088A/μs	0.0384A~2.4A/μs 0.0096A/μs	0.384A-24A/μs 0.096A/μs		
Resolution Accuracy Slew Rate Resolution				1μs / 10μs / 100μ 0.32A-20A/μs	o.0352A~2.2A/μs					
Resolution Accuracy Slew Rate Resolution Current Range Resolution	0.0072A/μs	0.072A/μs	0.008A/μs	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs	0.0352A-2.2A/μs 0.0088A/μs	0.088A/µs	0.0096A/μs	0.096A/µs		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement	0.0072A/μs 0~60A	0.072A/μs 60~600A	0.008A/µs 0~72A	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A	0.0352A~2.2A/µs 0.0088A/µs	0.088A/µs 80~800A	0.0096A/μs 0~96A	0.096A/μs 96~960A		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back	0.0072A/μs 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA	0.0352A~2.2A/μs 0.0088A/μs 0.0088A 0.80A 1.28mA	0.088A/μs 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA	0.096A/µs 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital)	0.0072A/μs 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA	0.0352A~2.2A/μs 0.0088A/μs 0.0088A 0~80A 1.28mA	0.088A/μs 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA	0.096A/μs 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution	0.0072A/μs 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV	0.0352A~2.2A/μs 0.0352A~2.2A/μs 0.0088A/μs 0~80A 1.28mA 0~120V 2mV	0.088A/μs 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA	0.096A/µs 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy	0.0072A/μs 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV	0.0352A~2.2A/μs 0.0088A/μs 0.0088A 0~80A 1.28mA	0.088A/μs 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA	0.096A/μs 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back	0.0072A/μs 0~60A 0.96mA 0~120V 2mV	0.072A/μs 60~600A 9.6mA 120~1200V 20mV	0.008A/μs 0~72A 1.152mA 0~120V 2mV	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re	0.0352A~2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range)	0.088A/μs 80~800A 12.8mA 120~1200V 20mV	0.0096A/μs 0~96A 1.536mA 0~120V 2mV	0.096A/μs 96~960A 15.36mA 120~1200V 20mV		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy	0.0072A/μs 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV	0.0352A~2.2A/μs 0.0352A~2.2A/μs 0.0088A/μs 0~80A 1.28mA 0~120V 2mV	0.088A/μs 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA	0.096A/μs 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy	0.0072A/μs 0~60A 0.96mA 0~120V 2mV	0.072A/μs 60~600A 9.6mA 120~1200V 20mV	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Ref	0.0352A~2.2A/μs 0.0352A~2.2A/μs 0.0088A/μs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA	0.088A/μs 80~800A 12.8mA 120~1200V 20mV	0.0096A/μs 0~96A 1.536mA 0~120V 2mV	0.096A/µs 96~960A 15.36mA 120~1200V 20mV		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading -	0.0352A-2.2A/µs 0.0352A-2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range)	0.088A/μs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA	0.096A/µs 96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital)	0.0072A/μs 0~60A 0.96mA 0~120V 2mV	0.072A/μs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading -	0.0352A-2.2A/µs 0.0352A-2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range)	0.088A/μs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA	0.096A/µs 96~960A 15.36mA 120~1200V 20mV		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading -	0.0352A-2.2A/µs 0.0352A-2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range)	0.088A/μs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA	0.096A/µs 96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0.	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Red 72~720A 11.52mA .05% of (Reading + 0.06% of (Red	0.0352A~2.2A/µs 0.0352A~2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range)	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA	0.096A/µs 96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0.002	1µs / 10µs / 100µ 0.32A-20A/µs 0.08A/µs 72~720A 11.52mA 120~1200V ±0.025% of (Re 72~720A 11.52mA .05% of (Reading +	0.0352A~2.2A/µs 0.0352A~2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV 2ding + Range) 0~80A 1.28mA - Range) 2000 ading + Range)	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA	96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0.	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V ±0.025% of (Re 72~720A 11.52mA .05% of (Reading -	0.0352A~2.2A/µs 0.0352A~2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV 2ding + Range) 0~80A 1.28mA - Range) 200 ading + Range)	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA	0.096A/µs 96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA	0.072A/μs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0.002	1µs / 10µs / 100µ 0.32A-20A/µs 0.08A/µs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading + 0.06% of (Re	0.0352A~2.2A/µs 0.0352A~2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV 2ding + Range) 0~80A 1.28mA - Range) 2000 ading + Range)	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA	96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Power Read Back Range (5 Digital) Accuracy Ceneral Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA 1500 1320	0.072A/μs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0. 1800	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading + 0.06% of (Re	0.0352A-2.2A/µs 0.0352A-2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range) 200 ading + Range) 0.01 80 - 240V 240V	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA 240 0.01 96	96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy Current Power Read Back Range (5 Digital) Accuracy Ceneral Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD)	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA 1500 1320 760.6x481x	0.072A/µs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0. 1800 1800 132 760.6x481:	1µs / 10µs / 100µ 0.32A-20A/µs 0.08A/µs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading + 0.06% of (Re 09Ω 0A 0.96 ~ 0 ~ 0.96 ~ 0	0.0352A-2.2A/µs 0.0352A-2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range) 0.01 80 - 240V 240V 240V	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA 00W	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA 240 0.01 96	0.096A/μs 96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA 00W		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxD Not included Park Moont Cit, wheelig	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA 1500 1320 760.6x481x 656.6x445.2	0.072A/µs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA 00W	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0. 1800 1800 72 72 132 760.6x481 656.6x445.3	1µs / 10µs / 100µ 0.32A-20A/µs 0.08A/µs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading + 0.06% of (Re 09Ω 0A 0.96 ~ 0.9	0.0352A-2.2A/µs 0.0352A-2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range) 0.01 80 - 240V 240V 240V 170 886.6x445.3	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA 00W 88Ω 00A 0VA 2757.3mm 2x757.3mm	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA 240 0.01 96 170 886.6x481 782.6x445.	0.096A/μs 96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA 00W 57Ω 0A 0VA x757.3mm 2x757.3mm		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxD]Nx included Pack Mount Eturheeld) Weight	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA 1500 1320 760.6x481x	0.072A/µs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA 00W	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0. 1800 1800 132 760.6x481:	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading + 0.06% of (Re 09Ω 0A 0.96 ~ 0 ~ 0.96 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~	0.0352A~2.2A/µs 0.0352A~2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range) 200 ading + Range) 0.01 80 - 240V 240V 170 886.6x481 782.6x445.1	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA 00W 88Ω 00A 0VA 2757.3mm 2x757.3mm	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA 240 0.01 96	0.096A/μs 96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA 00W 57Ω 0A 0VA x757.3mm 2x757.3mm		
Resolution Accuracy Slew Rate Resolution Current Range Resolution Measurement Voltage Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Current Read Back Range (5 Digital) Resolution Accuracy Power Read Back Range (5 Digital) Accuracy General Typical Short Resistance Maximum Short Current Load ON Voltage Load OFF Voltage Power Consumption Dimension (HxWxD) HxWxD Not included Park Moont Cit, wheelig	0.0072A/μs 0~60A 0.96mA 0~120V 2mV 0~60A 0.96mA 1500 1320 760.6x481x 656.6x445.2	0.072A/µs 60~600A 9.6mA 120~1200V 20mV 60~600A 9.6mA 00W	0.008A/μs 0~72A 1.152mA 0~120V 2mV 0~72A 1.152mA ±0. 1800 1800 72 72 132 760.6x481 656.6x445.3	1μs / 10μs / 100μ 0.32A-20A/μs 0.08A/μs 72~720A 11.52mA 120~1200V 20mV ±0.025% of (Re 72~720A 11.52mA .05% of (Reading + 0.06% of (Re 09Ω 0A 0.96 ~ 0 ~ 0.96 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~ 0 ~	0.0352A~2.2A/µs 0.0352A~2.2A/µs 0.0088A/µs 0~80A 1.28mA 0~120V 2mV eading + Range) 0~80A 1.28mA - Range) 200 ading + Range) 0.01 80 - 240V 240V 170 886.6x481 782.6x445 140.	0.088A/µs 80~800A 12.8mA 120~1200V 20mV 80~800A 12.8mA 00W 88Ω 00A 0VA 2757.3mm 2x757.3mm	0.0096A/μs 0~96A 1.536mA 0~120V 2mV 0~96A 1.536mA 240 0.01 96 170 886.6x481 782.6x445.	96~960A 15.36mA 120~1200V 20mV 96~960A 15.36mA 00W		

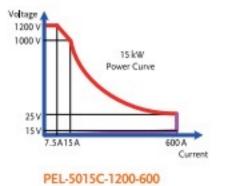
Cooling: Advanced Fan Cooled

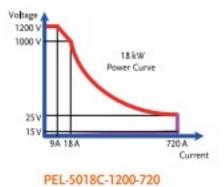
Input AC Power: 100~240 Vac ±10%, 50/60Hz, Single-phase

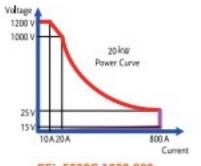
Note *2 : The range is automatically or forcing to range II only in CC Mode

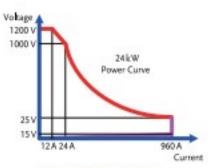
Note *3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S.

Note *4 : Operating temperature range is 0~40°C * all specifications apply for 25°C±5°C









PEL-5020C-1200-800

PEL-5024C-1200-960





PEL-503-80-50



PEL-507-80-140





FEATURES

- * 5-digit Digital Voltage, Current and Power Meter
- Simultaneous Display of Voltage, Current, and Watts
- * Short-circuit Time Can be Set During Short-circuit Test
- * Automatic Test Function of Overcurrent Protection/Overpower Protection
- * The Battery Discharge Test Function Can Set the Discharge Stop Voltage(Vbatt), Discharge Capacity(AH, WH) and Stop Discharge Time
- * Surge Test Can Simulate Boot Overshoot Current and Transient Current From Hot Plugging
- * Constant Current, Constant Resistance, Constant Voltage, Constant Power and Dynamic Mode
- * Overvoltage, Overcurrent, Overpower, Over Temperature Protection and Reverse Polarity Detection
- * Voltage Polarity Display Can be set to Positive Value"+" or Negative Value"-"
- * Communications Interface: RS232, USB

The PEL-500 series single-channel electronic load has a total of 5 models and provides 0~80V/ 0~500V voltage operating ranges and 250~700W power operating range. The series can be applied to R&D, quality control, ATE system and production test, including voltage source/current source test; switching power supply transient response; constant voltage mode for current limiting test; battery simulation; and battery discharge test.

The PEL-500 series provides a 5-digit digital display of voltage, current and power. Users can monitor the measurement data of the DUT at the same time. In order to facilitate users to evaluate whether the DUT can withstand the overshoot current, the PEL-500 series provides Surge test, which can simulate the boot overshoot current and the transient current from hot plugging. The built-in battery discharge test function can determine the conditions for stopping the discharge according to the test requirements of the DUT, including setting the discharge stop voltage (Vbatt), discharge capacity (AH, WH) and stop discharge time.

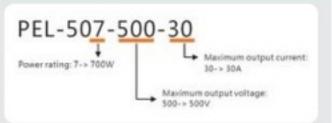
Users can set the loading voltage/unloading voltage of the PEL-500 series for testing according to the characteristics of the DUT. When the output voltage of the DUT rises to the loading voltage value, the loading starts. When the output voltage drops to the unloading voltage, the loading ends. Users can use the GO/NG function to pre-set the judgment conditions according to the function and specifications of the DUT. The PEL-500 series will automatically generate the judgment results according to the set judgment conditions during the test.

Under the safety test requirements of the power supply, the PEL-500 series not only provides the Short test function, but also provides the automatic test function of overcurrent protection/overpower protection to simplify users' complicated manual operation and verify the OCP/OPP of the DUT's action points. The generated measurement results help users confirm whether the actual operating action points of the DUT for OCP/OPP are within the measurement regulations.

In addition to the function of providing load current waveforms to the oscilloscope via the BNC output terminal of Imonitor, the PEL-500 series also provides overvoltage, overcurrent, overpower and over temperature protection, and reverse polarity detection. When any one of them generates a trigger action, The PEL-500 series will have protective or reminding measures to protect the PEL-500 from damage due to abnormal operating ranges.

ORDERING INFORMATION

PEL-503-80-50 80V/50A/250W DC Electronic Load PEL-504-80-70 80V/70A/350W DC Electronic Load PEL-504-500-15 500V/15A/350W DC Electronic Load PEL-507-80-140 80V/140A/700W DC Electronic Load PEL-507-500-30 500V/30A/700W DC Electronic Load



OPTIONAL ACCESSORIES

GTL-238 RS-232 Cable, 9-pin, M-F Type, 1000mm GTL-246 USB Cable, USB 2.0, A-B Type, 1200mm

Note: * Regarding the product delivery date, please contact your regional sales representative.





GTL-238 RS-232 Cable, 9-pin, M-F Type, 1000mm



Rear Panel





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Mod	el	PEL-50	3-80-50	PEL-50	4-80-70	PEL-504	-500-15	PEL-507	-80-140	PEL-507	7-500-30
INPUT RATINGS											
Power(Watt)			0 W	0.70) W	350		700 W		1837	0 W
Current(Ampere)) A		A	15 A		140 A) A
Voltage(Volt)			٥v		V	500		80 V			0 V
Min. Operating Voltag	ge	1.00	@ 50A	1.2V (D 70A	6V @	15A	0.9V @	140A	3V @) 30A
PROTECTIONS											
Over Power Protection			2.5W		7.5W	≒367		≒735W			35W
Over Current Protection			2.5A		3.5A	≒15		≒14			1.5A
Over Voltage Protection			34V		4V	≒52		≒8			25V
Over Temp. Protection	n(OTP)	Y	ES	Y	ES	YE	S	YE	S	Y	ES
CC Mode				lu .							
Range			~50.4A	0~7.02~70.2A 0.117mA/1.17mA		0~1.5~15A 0.025mA/0.25mA		0~14.04			-30A
Resolution		0.084m	A/0.84mA	0.117mA	/1.17mA			0.234mA	/2.34mA	0.05mA	/ 0.5mA
Accuracy						±0.1% of (SETT	ING + RANGE)				
CR Mode											
Range		0.016–1.6–96000Ω		0.0114–1.14–68400Ω 19μΩ/0.014619mSiemens		0.4-40-2400000Ω		0.0057-0.57-34200Ω		0.2–20–1200000Ω	
Resolution		26.666μΩ/0.01	0416mSiemens	19μΩ/0.0146	19mSiemens	666.667μΩ/0.416μSiemens		9.5μΩ/29.239μSiemens		333.334μΩ/0	.833µSiemens
Accuracy						±0.2% of (SETT	ING + RANGE)				
CV Mode			0117		0114		F0004		9117		50011
Range			1~81V		~81V	0~60~		0-8.1			-500V
Resolution		0.135m\	//1.35mV	0.135mV	/1.35mV	1mV/10mV		0.135mV	/1.35mV	1mV/10mV	
Accuracy						±0.05% of (SET)	TING + RANGE)				
CP Mode		0. 25 02	~250.2W	0~35.04	150 AVI/	0.35.04	350 497	0.70.02	700 200	0.70.02	700 201/
Range			~230.2W 5A, r2:50A)		7A, r2:70A)	0~35.04~350.4W (Imax=r1:1.5A, r2:15A)		0~70.02~700.2W (Imax=r1:14A, r2:140A)		0~70.02~700.2W (Imax=r1:3A, r2:30A)	
Resolution		0.417mW	//4.17mW	0.584mW	/5.84mW	0.584mW		1.167mW/11.67mW		1.17mW	/117mW
Accuracy						±0.5% of (SETTING + RANGE)					
Dynamic Mode											
THIGH/TLOW						10µS to 9	9.999 Sec				
Resolution		0.001/0.01/0.1/1mS									
Slew rate L H		0.032~2A/µs 0.0464~2.90A/		2.90A/µs	1~62.5mA/µs		0.0096~0.6A/µs		2~125mA/µs		
		3.2-20	0mA/μs	4.64-290mA/µs		10-625	mA/μs	0.096-	6A/µs	20-125	0mA/μs
Accuracy	•					±5%±	:10µs				
Measurement											
	Range (5 Digital)	0~8.1	1~81V	0~8.1~81V		0~60~	500V	0~8.1	~81V	0~60-	~500V
Voltage Read Back	Resolution	0.135mV/1.35mV		0.135mV	/1.35mV	1mV/	10mV	0.135mV	/1.35mV	1mV/	10mV
	Accuracy					±0.025% of (REA	DING+ RANGE)				
	Range (5 Digital)	0~5.04	-50.4A	0~7.02	~70.2A	0~1.5	~15A	0~14.04	-140.4A	0~3-	-30A
Current Read Back	Resolution	0.084m	A/0.84mA	0.117mA/1.17mA		0.025mA/0.25mA		0.234mA/2.34mA		0.05mA/ 0.5mA	
	Accuracy	19		(1) (1)		±0.1% of (READ	DING+ RANGE)	1	57		807
	Range (5 Digital)	25W	250W	3500	350W						
Power Read Back	Resolution	0.001W		35W	330W	35W	350W	70W	700W	70W	700W
(5)	Accuracy		0.01W	0.001W	0.01W	35W 0.001W	350W 0.01W	70W 0.001W	700W 0.01W	70W 0.001W	700W 0.01W
Surge Test	,		0.01W				0.01W				
			0.01W			0.001W	0.01W				
Surge & Normal curre			0.01W 50A	0.001W		0.001W	0.01W DING+ RANGE)		0.01W	0.001W	
		0-		0.001W	0.01W	0.001W ±0.1% of (READ	0.01W DING+ RANGE) SA	0.001W	0.01W 40A	0.001W	0.01W
Surge & Normal curre Surge time Surge step	ent	0 1010	50A	0.001W 0-7	0.01W	0.001W ±0.1% of (READ 0–1	0.01W DING+ RANGE) SA 00ms	0.001W 0-1-	0.01W 40A 00ms	0.001W 0- 10-10	0.01W
Surge & Normal curre Surge time	ent	0 1010	50A 000ms	0.001W 0-7	0.01W 70A 000ms	0.001W ±0.1% of (READ 0–1	0.01W DING+ RANGE) SA 00ms	0.001W 0-1- 10~10	0.01W 40A 00ms	0.001W 0- 10-10	0.01W 30A 000ms
Surge & Normal curre Surge time Surge step	ent	0-10-10 10-10	50A 000ms ~5	0.001W 0-7 10-10 1-	0.01W 70A 000ms ~5	0.001W ±0.1% of (READ 0-1 10-10	0.01W DING+ RANGE) 5A 00ms	0.001W 0-1- 10~10 1~	0.01W 40A 00ms -5	0.001W 0 1010 1-	0.01W 30A 000ms ~5
Surge & Normal curre Surge time Surge step Battery Discharge T	ent	0-10-10 10-10	50A 000ms ~5	0.001W 0-7 10-10 1-	0.01W 70A 000ms	0.001W ±0.1% of (READ 0–1 10–10	0.01W DING+ RANGE) 5A 00ms	0.001W 0-1- 10-10	0.01W 40A 00ms -5	0.001W 0 1010 1-	0.01W 30A 000ms ~5
Surge & Normal curre Surge time Surge step Battery Discharge T UVP	ent	0-10-10 10-10	50A 000ms ~5	0.001W 0-7 10-10 1-	0.01W 70A 000ms ~5	0.001W ±0.1% of (READ 0-1 10-10	0.01W DING+ RANGE) 5A 00ms -5	0.001W 0-1- 10~10 1~	0.01W 40A 00ms -5	0.001W 0 1010 1-	0.01W 30A 000ms ~5
Surge & Normal curre Surge time Surge step Battery Discharge T UVP	ent	0-10-10 10-10	50A 000ms ~5	0.001W 0-7 10-10 1-	0.01W 70A 000ms ~5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999	0.01W DING+ RANGE) 5A 00ms -5	0.001W 0-1- 10~10 1~	0.01W 40A 00ms -5	0.001W 0 1010 1-	0.01W 30A 000ms ~5
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity	ent	0-10-10 10-10	50A 000ms ~5 81V 199 Sec	0.001W 0-7 10-10 1-	0.01W 70A 000ms ~5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999	0.01W DING+ RANGE) 5A 00ms -5 00V 99 Sec 0.1~19999.9WH	0.001W 0-1- 10~10 1~	0.01W 40A 00ms -5	0.001W 0 1010 1- 05 1999	0.01W 30A 000ms ~5
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy	ent	0-10-10 10-10	50A 000ms ~5 81V 199 Sec 0.1-	0.001W 0-3 10-10 1- 0-8 1~999	0.01W 70A 000ms ~5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/	0.01W DING+ RANGE) ISA 00ms IS 00V 99 Sec 0.1~19999.9WH	0.001W 0-1- 10~10 1~ 0-8 1~9999	0.01W 40A 00ms -5	0.001W 0 1010 1- 05 1999	0.01W 30A 000ms ~5
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage	ent	0-10-10 10-10	50A 000ms ~5 81V 199 Sec 0.1-	0.001W 0-7 10-10 1- 0-8 1-999	0.01W 70A 000ms ~5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/ 0.4-1	0.01W DING+ RANGE) SA 000ms -5 00V 99 Sec 0.1~19999.9WH 100V NG + RANGE)	0.001W 0-1- 10~10 1~ 0-8 1~9999	0.01W 40A 00ms -5	0.001W 0-1 10-10 1- 0-5 1-999	0.01W 30A 000ms ~5 000V 99 Sec
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy	est	0-10-10 10-10	50A 000ms ~5 81V 199 Sec 0.1-	0.001W 0-3 10-10 1- 0-8 1-999	0.01W 70A 000ms -5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/ 0.4-1	0.01W DING+ RANGE) SA 000ms -5 00V 99 Sec 0.1~19999.9WH 100V NG + RANGE)	0.001W 0-1- 10~10 1~ 0-8 1~9999	0.01W 40A 00ms -5	0.001W 0-1 10-10 1- 0-5 1-999	0.01W 30A 000ms ~5 000V 99 Sec
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate	est	0 1010 1- 0 1999	50A 000ms ~5 81V 199 Sec 0.1-	0.001W 0-3 10-10 1- 0-8 1-999	0.01W 70A 000ms ~5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-9999 0.1~19999.9AH/ 0.4-1 1% of (SETTIN 0~10 0.05% of (SETTIN	0.01W DING+ RANGE) SA 000ms -5 000V 99 Sec 0.1~199999.9WH 100V NG + RANGE) 00V ING + RANGE)	0.001W 0-1- 10~10 1~ 0-8 1~9999	0.01W 40A 00ms -5	0.001W 0	0.01W 30A 000ms ~5 000V 99 Sec
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy	est	0 1010 1- 0 1999	50A 000ms ~5 81V 99 Sec 0.1-	0.001W 0-3 10-10 1- 0-8 1-999	0.01W 70A 000ms -5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/ 0.4-1 1% of (SETTIN 0~10 0.05% of (SETT	0.01W DING+ RANGE) SA 00oms -5 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 100V ING + RANGE)	0.001W 0-1- 10~10 1- 0-8 1~9991 0.1-	0.01W 40A 00ms -5	0.001W 0	0.01W 30A 000ms ~5 000V 99 Sec
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate	est	0 1010 1- 0 1999	50A 000ms ~5 81V 99 Sec 0.1-	0.001W 0-3 10-10 1- 0-8 1-999	0.01W 70A 000ms -5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-9999 0.1~19999.9AH/ 0.4-1 1% of (SETTIN 0~10 0.05% of (SETTIN	0.01W DING+ RANGE) SA 00oms -5 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 100V ING + RANGE)	0.001W 0-1- 10~10 1- 0-8 1~9991 0.1-	0.01W 40A 00ms -5	0.001W 0	0.01W 30A 000ms ~5 000V 99 Sec
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate Current Monitor	est d)	0-10-10 1-0-10 1-999	50A 000ms ~5 81V 99 Sec 0.1-	0.001W 0-3 10-10 1- 0-8 1~999 -25V 7.02	0.01W 70A 000ms -5	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/ 0.4-1 1% of (SETTIN 0~10 0.05% of (SETT	0.01W DING+ RANGE) SA 000ms -5 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 00V ING + RANGE) A/V Ile: 10V NG + RANGE)	0.001W 0-1- 10~10 1- 0-8 1~9991 0.1-	0.01W 40A 000ms -5 31V 99 Sec	0.001W 0-1 10-10 1-0-5 1~999 0.4-	0.01W 30A 000ms ~5 000V 99 Sec
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate Current Monitor Accuracy	est d)	0-1 10-10 1-999 5.04	50A 000ms ~5 81V 199 Sec 0.1- 0~2	0.001W 0-3 10-10 1- 0-8 1~999 -25V 7.02	0.01W 70A 000ms -5 31V 99 Sec	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/ 0.4-1 1% of (SETTIN 0-10 0.05% of (SETTIN 0.5% of (SETTIN	0.01W DING+ RANGE) SA 000ms S 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 00V ING + RANGE) A/V Ile: 10V NG + RANGE) S7Ω	0.001W 0-1- 10~10 1- 0-8 1~9999 0.1- 0~2	0.01W 40A 00ms -5 -11V 99 Sec -25V -5A/V	0.001W 0-1 10-10 1-999 0.4- 0-1 3.4	0.01W 30A 000ms ~5 000V 99 Sec
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate Current Monitor Accuracy Typical Short Resistan	est d)	0-1 10-10 1-999 5.04	50A 000ms ~5 81V 199 Sec 0.1- 0~2	0.001W 0-3 10-10 1- 0-8 1~999 -25V 7.02	0.01W 70A 70A 70Oms -5 81V 99 Sec	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-9999 0.1~19999.9AH/ 0.4-1 1% of (SETTIN 0~10 0.5% of (SETTIN 0.5% of (SETTIN 0.5% of (SETTIN 0.5% of (SETTIN 0.36	0.01W DING+ RANGE) SA 00oms -S 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 00V ING + RANGE) A/V Ile: 10V NG + RANGE) S7Ω SA	0.001W 0-1- 10-10 1- 0-8 1-9999 0.1- 0-2 14.04	0.01W 40A 00ms -5 -11V 99 Sec -25V -5A/V	0.001W 0-1 10-10 1-999 0.4- 0-1 3.4	0.01W 30A 000ms ~5 600V 99 Sec 100V
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate Current Monitor Accuracy Typical Short Resistan Max. short Current	est d)	0-1 10-10 1-999 5.04	50A 000ms ~5 81V 199 Sec 0.1- 0~2	0.001W 0-3 10-10 1- 0-8 1~999 -25V 7.02	0.01W 70A 70A 70Oms -5 81V 99 Sec	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/ 0.4-1 1% of (SETTIN 0.05% of (SETTIN 0.5% of (SETTIN 0.5% of (SETTIN 0.36	0.01W DING+ RANGE) SA 000ms -5 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 00V ING + RANGE) A/V Ide: 10V NG + RANGE) 67 Ω 6A 10%, 50/60Hz	0.001W 0-1- 10-10 1- 0-8 1-9999 0.1- 0-2 14.04	0.01W 40A 00ms -5 -11V 99 Sec -25V -5A/V	0.001W 0-1 10-10 1-999 0.4- 0-1 3.4	0.01W 30A 000ms ~5 600V 99 Sec 100V
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate Current Monitor Accuracy Typical Short Resistan Max. short Current Power input	est d)	0-1 10-10 1-999 5.04	50A 000ms ~5 81V 199 Sec 0.1- 0~2	0.001W 0-7 10-10 1- 0-8 1-999 -25V 7.02	0.01W 70A 70A 70Oms -5 81V 99 Sec	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/ 0.4- 1% of (SETTIN 0.05% of (SETTIN 0.5% of (SETTIN 0.36 15 115/230 Vac±	0.01W DING+ RANGE) SA 000ms -5 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 00V ING + RANGE) A/V Ide: 10V NG + RANGE) 67 Ω 6A 10%, 50/60Hz	0.001W 0-1- 10-10 1- 0-8 1-9999 0.1- 0-2 14.04	0.01W 40A 000ms -5 31V 99 Sec 25V -5A/V -53Ω 0A	0.001W 0-1 10-10 1-999 0.4- 0-1 3.4	0.01W 30A 000ms ~5 600V 99 Sec 100V
Surge & Normal curre Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate Current Monitor Accuracy Typical Short Resistan Max. short Current Power input Interface (Standard)	est d)	0-10-10 1-10-10 1-2999 5.04	50A 000ms ~5 81V 199 Sec 0.1- 0~2	0.001W 0-3 10-10 1- 0-8 1-999 -25V 7.02	0.01W 70A 000ms -5 81V 99 Sec	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1-999 0.1~19999.9AH/ 0.4- 1% of (SETTIN 0.05% of (SETTIN 0.5% of (SETTIN 0.36 15 115/230 Vac±	0.01W DING+ RANGE) SA 000ms -5 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 00V ING + RANGE) A/V Ile: 10V NG + RANGE) 57Ω SA 10%, 50/60Hz RS232	0.001W 0-1- 10-10 1- 0-8 1-9999 0.1- 0-2 14.04	0.01W 40A 000ms -5 11V 39 Sec 25V -5V -5A/V -60	0.001W 0-1 10-10 1- 0-5 1-999 0.4- 0-1 3 /	0.01W 30A 30A 300ms ~5 600V 99 Sec 100V
Surge & Normal currer Surge time Surge step Battery Discharge T UVP Time Capacity Others Load ON Voltage Accuracy Load OFF Voltage Accuracy Imonitor (Non-isolate) Current Monitor Accuracy Typical Short Resistant Max. short Current Power input Interface (Standard) Power Consumption	est d)	0-1 10-10 1- 0-1 1-999 5.04 0.0 5.04	50A 000ms ~5 81V 199 Sec 0.1- 0~2	0.001W 0-3 10-10 1- 0-8 1~999 -25V 7.02 40 205 x 123	0.01W 70A 000ms -5 81V 99 Sec	0.001W ±0.1% of (READ 0-1 10-10 1- 0-5 1~999 0.1~19999.9AH/ 0.4-1 1% of (SETTIN 0.05% of (SETTIN 0.05% of (SETTIN 0.36 15 115/230 Vac± USB/6	0.01W DING+ RANGE) SA 000ms -5 000V 99 Sec 0.1~19999.9WH 100V NG + RANGE) 00V ING + RANGE) A/V Ile: 10V NG + RANGE) 57Ω SA 10%, 50/60Hz RS232	0.001W 0-1- 10~10 1- 0-8 1~9999 0.1- 0-2 14.04 205 x 231	0.01W 40A 000ms -5 11V 39 Sec 25V -5V -5A/V -60	0.001W 0-1 10-10 1- 0-5 1~999 0.4- 0~1 3 /	0.01W 30A 000ms ~5 000V 99 Sec 100V 00V



AEL-5000 Series





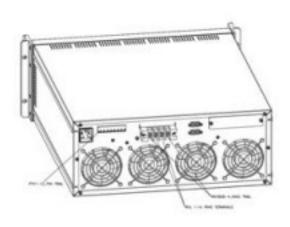


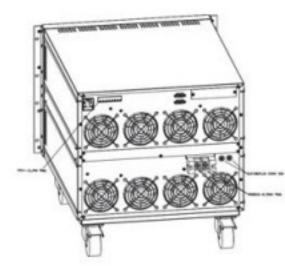




FEATURES

- * Turbo Mode (Multiplier Mode) Can Withstand up to 2 Times the Rating Current and Power of the Electronic Load in a Short Period of Time
- * Operating Mode: CC, linear CC, CR, CV, CP and AC Rectifier Loads
- * Measurement Items: Voltage Value(Vrms, Vpeak, Vmax., Vmin), Current Value(Irms, Ipeak, Imax., Imin.), Watt Value, Volt-ampere Value(VA), Frequency Value, Crest Factor, Power Factor, Voltage Total Distortion(V THD, VH), Current Total Distortion (I THD, IH), Etc
- * Eight Units Connected in Parallel up to 180kW for Single-phase and 540kW for Three-phase
- * Support Loading and Unloading Angle Control, Loading and Unloading Angle Control Can be set at the Full Range of 0-359 Degrees
- * Support Positive Half Cycle or Negative Half Cycle
- * Support SCR/TRIAC Current Phase Modulation Waveform, 90-degree Trailing Edge and Leading Edge
- * Support the Capacitive Load (Inrush Current)when the Power Supply is Turned on and the Transient Current (Surge Current) Test when the Load is Suddenly Connected (Hot Plug-in) During Operation
- * Crest Factor Range: 1.414-5.0
- * Power Factor Range: 0.1~1.0 Leading or Trailing
- * Frequency Range: DC, 40-440Hz (AEL-5003-480-18.75/AEL-5004-480-28: DC, 40~70Hz), and 800Hz and 1kHz Need to be Customized
- * Optional Control Interfaces: GPIB, RS-232, USB, LAN





GW Instek launches 20 models of the AEL-5000 series AC/DC electronic loads depending on the power range. The power range of a single unit is from 1875W to 22500W, and up to 8 units can be connected in parallel. The maximum power of single-phase parallel connection can reach 180kW, and the total power of 3-phase can reach 540kW, which are suitable for UPS, Inverter/Breaker, AC Power Source, Battery, Fuse/Breaker, DC Power Source and other applications.

The AEL-5000 series has built-in precision measurement circuits such as 16-bit A/D and DSP to provide accurate measurement items, which include voltage root mean square value (Vrms), current root mean square value (Arms), and watt value (Watt), volt-ampere (VA), crest factor (CF), power factor (PF), total harmonic distortion (THD), voltage total harmonic distortion (VTHD), current total harmonic distortion (ITHD), peak current (Ipeak), maximum current (Amax), minimum current (Amin), maximum voltage (Vmax), minimum voltage (Vmin), time measurement. In addition, built-in test modes include UPS Efficiency, PV Inverter Efficiency, UPS Back-up time, Battery Discharge time, UPS transfer time, Fuse/Breaker Trip/Non-Trip, short circuit simulation, OCP, OPP and other test modes.

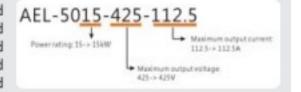
The AEL-5000 series has the Turbo mode (ON or OFF can be selected) design, which can increase the current and power of the electronic load by 2 times in one second. For test applications that require transient high power and large current such as transient overload test of protective components or short circuit of Fuse/Breaker and AC power supply, OCP and OPP tests etc.. The Turbo mode provides the most economical solution.

The AEL-5000 series also supports the Load On startup function (pre-set Load On). When the inverter or uninterruptible power supply is turned on, the series directly loads the set load current to verify that whether startup of the inverter or uninterrupted power supply connecting to the electrical appliance is stable. At the same time, the Load On start function can also set positive half cycle or negative half load to verify whether the output voltage of the inverter or uninterruptible power supply remains stable when the actual electrical appliance only has a positive half cycle or negative half cycle load current. Control load angle and unload angle can also be set (range 0-359 degrees) to verify the stability of the transient response of the inverter or uninterruptible power supply when the appliance is plugged in and unplugged. In addition, the series also supports SCR/TRIAC current phase modulation waveform, 90 degree Trailing Edge and Leading Edge settings.

For the application of the adjustable bandwidth (BW) function, when the bandwidth of the DUT does not match the bandwidth of the AEL-5000 series, there will be oscillations. Users can reduce the BW setting value accordingly to meet the response speed of the DUT. Inrush Current verifies whether the transient response of the inverter output voltage is stable when the electrical appliance is turned on (Inrush Current) and when the electrical appliance is suddenly connected (Surge

The entire series of AEL-5000 provides over-voltage warning, over-current, over-power, and over-temperature protection. Analog Input terminal can control constant current, constant power and other working modes through external voltage. Vmonitor/Imonitor terminal is used to connect external voltage/current monitoring device. In addition, a variety of optional control interfaces are provided such as GPIB, RS-232, USB, and LAN to meet the needs of system integration.

ORDERING INFORMATION



STANDARD ACCESSORIES

AEL-5000 Series operation manual HD-DSUB: 15pin MALE to MALE 150cm x 1 PTV1-12 PIN TRML : Please refer to Fig.1 x 6

AEL-5002-xxx-18.75/AEL-5003-xxx-28/AEL-5004-xxx-37.5

PVL 1-4 RING TERMINALS : Please refer to Fig.4 x 2 RNYBS8-4 RING TRML: Please refer to Fig.5 x 2

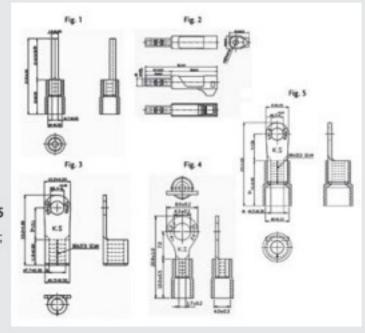
AEL-5006-xxx-56/AEL-5008-xxx-78/AEL-5012-xxx-112.5/ AEL-5015-xxx-112.5/AEL-5019-xxx-112.5/AEL-5023-xxx/112.5

SLS10B RED PLUG CONN 20A RED: Please refer to Fig.2; The terminal is used for Vsense x 1

SLS10B BLK PLUG CONN 20A BLK: Please refer to Fig.2;

The terminal is used for Vsense x 1

RNB S22-6 RING TRML, #4: Please refer to Fig.3 x 2



OPTIONAL ACCESSORIES

PEL-030 GPIB+RS-232 Card PEL-022 GPIB Card GTL-246 USB Cable, USB 2.0, A-B Type, 1200mm PEL-023 RS-232 Card

GTL-248 GPIB Cable, Double Shielded, 2000mm PEL-024 LAN Card GTL-250 GPIB Cable, Double Shielded, 600mm PEL-025 USB Card PEL-028 HANDLES, U-shaped handle (fixed to the bracket) (for AEL-5006/5008/5012/5015)

PEL-029 HANDLES Rack Accessories (for AEL-5002/5003/5004)

Note: * Regarding the product delivery date, please contact your regional sales representative.



AEL-5003-350-28 AEL-5004-350-37.5

AEL-5006-425-56

AEL-5002-350-18.75 AEL-5006-350-56 AEL-5012-350-112.5 AEL-5015-350-112.5 AEL-5019-350-112.5 AEL-5023-350-112.5 AEL-5008-350-75 AEL-5012-425-112.5 AEL-5015-425-112.5 AEL-5019-425-112.5 AEL-5023-425-112.5

AEL-5002-425-18.75 AEL-5008-425-75 AEL-5003-425-28

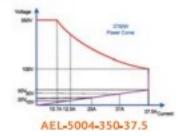
AEL-5004-425-37.5 AEL-5003-480-18.75 AEL-5004-480-28

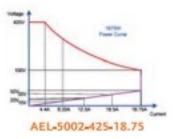
MODEL	Pov	wer (W)	Current(Ampere)			
MODEL	Turbo OFF	Turbo ON	Turbo OFF	Turbo ON	Voltage(Volt)	
AEL-5002-350-18.75	1875 W	3750W (x2)*	18.75 Arms / 56.25Apeak	37.5Arms/56.25Apeak (x2)*		
AEL-5003-350-28	2800W	5600W (x2)*	28 Arms / 84Apeak	56Arms/84Apeak (x2)*		
AEL-5004-350-37.5	3750 W	7500W (x2)*	37.5 Arms / 112.5Apeak	75.0Arms/112.5Apeak (x2)*	50~350Vrms / 500Vdc	
AEL-5002-425-18.75	1875 W	3750W (x2)*	18.75 Arms / 56.25Apeak	37.5Arms/56.25Apeak (x2)*		
AEL-5003-425-28	2800W	5600W (x2)*	28 Arms / 84Apeak	56Arms/84Apeak (x2)*		
AEL-5004-425-37.5	3750 W	7500W (x2)*	37.5 Arms / 112.5Apeak	75.0Arms/112.5Apeak (x2)*	50~425Vrms / 600Vdc	
AEL-5006-350-56	5600 W	11200W (x2)*	56.0 Arms / 168Apeak	112.0Arms/ 168Apeak (x2)*		
AEL-5008-350-75	7500 W	15000W (x2)*	75.0 Arms / 225Apeak	150.0Arms/225Apeak (x2)*		
AEL-5012-350-112.5	11250W	22500W (x2)*	112.5 Arms / 337.5Apeak	225Arms/337.5Apeak (x2)*		
AEL-5015-350-112.5	15000W	30000W (x2)*	112.5 Arms / 337.5Apeak	225Arms/337.5Apeak (x2)*		
AEL-5019-350-112.5	18750W	37500W (x2)*	112.5 Arms / 337.5Apeak	225Arms/337.5Apeak (x2)*		
AEL-5023-350-112.5	22500W	45000W (x2)*	112.5 Arms / 337.5Apeak	225Arms/337.5Apeak (x2)*	50~350Vrms / 500Vdc	
AEL-5006-425-56	5600 W	11200W (x2)*	56.0 Arms / 168Apeak	112.0Arms/ 168Apeak (x2)*		
AEL-5008-425-75	7500 W	15000W (x2)*	75.0 Arms / 225Apeak	150.0Arms/225Apeak (x2)*		
AEL-5012-425-112.5	11250W	22500W (x2)*	112.5 Arms / 337.5Apeak	225Arms/337.5Apeak (x2)*		
AEL-5015-425-112.5	15000W	30000W (x2)*	112.5 Arms / 337.5Apeak	225Arms/337.5Apeak (x2)*		
AEL-5019-425-112.5	18750W	37500W (x2)*	112.5 Arms / 337.5Apeak	225Arms/337.5Apeak (x2)*		
AEL-5023-425-112.5	22500W	45000W (x2)*	112.5 Arms / 337.5Apeak	225Arms/337.5Apeak (x2)*	50~425Vrms / 600Vdc	
AEL-5003-480-18.75	2800W	5600W (x2)*	18.75 Arms / 56.25Apeak	37.5Arms/56.25Apeak (x2)*		
AEL-5004-480-28	3750 W	7500W (x2)*	28 Arms / 84Apeak	56Arms/84Apeak (x2)*	50~480Vrms / 700Vdc	

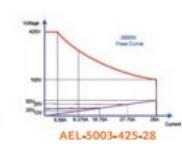
^{*} Power and current boost rate of Turbo ON

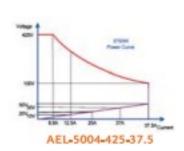
SPECIFICATI MODEL	ONS	AEL-5002-350-18.75	AEL-5003-350-28	AEL-5004-350-37.5	AEL-5002-425-18.75	AEL-5003-425-28	AEL-5004-425-37.5
Power (W) Current(Ampere)		1875 W 18.75 Arms / 56.25Apeak	2800W 28 Arms / 84Apeak	3750 W 37.5 Arms / 112.5Apeak	1875 W 18.75 Arms / 56.25Apeak	2800W 28 Arms / 84Apeak	3750 W 37.5 Arms / 112.5Apeak
Voltage(Volt) FREQUENCY Range			50-350Vrms / 500Vdc Hz(CC,CP Mode) , DC-440Hz(LIN,CR			50-425Vrms / 600Vdc Hz(CC,CP Mode) , DC-440Hz(UN,CF	Characterist Control of the Control
Over Power Protection		≈ 1968.75Wrms or Programmable	≒2940Wms or Programmable	= 3937.5Wmms or Programmable	≒ 1968.75'W/rms or Programmable	12940Wrms or Programmable	≒ 3937.5Wrms or Programmable
Over Current Protection Over Vlotage Protection		≒ 19.687 Arms or Programmable	≥ 29.4 Arms or Programmable ≥ 367.5 Vrms / 525Vdc	≒ 19.375 Arms, or Programmable	h 19.687 Arms or Programmable	≒ 29.4 Arms or Programmable ≒ 446.25 Vrms/630Vdc	≒ 39.375 Arms, or Programmable
Over Temp. Protection OPERATION MODE		6	Yes	9		Yes	
Constant Current Mode for 5 Range	ine-Wave	0-18.75A	0-28A	0-37.SA	0-18.75A	0-28A	0-37.5A
Resolution Accuracy		0.3125mA/16bits	0.5mA/16bits range) @ 50/60Hz , ± 0.5% of set	0.625mA/16bits	0.3125mA/16bits	0.5mA/T6bits ange) @ 50/60Hz , ± 0.5% of (sett	0.625mA/16bits
	le for Sine-Wave, Square	Wave or Quasi-Square Wave, PWM Wave 0-18.75A	0-28A	0-37.5A	0-18.75A	0-28A	0-37.5A
Resolution Accuracy		0.3125mA/16bits	0.5mA/16bits range) @ 50/60Hz , ± 0.5% of (set	0.625mA/16bits	0.3125mA/16bits	0.5mA/16bits ange) @ 50/60Hz , ± 0.5% of (sett	0.625mA/16bits
Constant Resistance Mode		3.2 ohm = 64k ohm	2.0 ohm = 40 k ohm	1.6 ohm = 32k ohm	3.2 ohm = 64k ohm	2.0 ohm = 40k ohm	1.6 ohm = 32k ohm
Range Resolution®1		0.0052083mS/16bits	0.0083333m5/16bits	0.010416m5/16bits	0.0052083mS/16bits	0.0083333mS/16bits	0.010416mS/16bits
Constant Voltage Mode		±0.2% of 1 setting + range 7 (8 50/60Hz.± (0.5% of setting + 2	2% of range 2 (g) DX, and 49UH2	±0.2% of (setting + range) @	50/60Hz , ± (0.5% of setting + 2)	% of range 1 @ LX, and #20Hz
Range Resolution			50-350Vrms / 500Vdc 0.01V			50-425V/rms / 600Vdc 0.1V	
Constant Power Mode		4	+(0.1% of setting + 0.1% of range)			#(0.1% of setting + 0.1% of range)	4
Range Resolution		1875W 0.1W	2800W 0.1W	3750W 0.1W	1875W 0.1W	2800W 0.1W	3750W 0.1W
CREST FACTOR (CC & CP M	ODE ONLY)	±0.5% of (sett	ing + range] @ 50/60Hz , ±2% of (s	etting + range)	±0.5% of [setti	ng + range) @ 50/60Hz , ±2% of (ss	tting + range]
Range Resolution) }	√2~5 0.1			√2~5 0.1	
POWER FACTOR (CC & CP)	HODE ONLY)		(0.5% / Irms) + 1% F.S.			(0.5 % / Irms) + 1 % F.5.	
Range Resolution			0-1 Lag or Lead 0.01			0–1 Lag or Lead 0.01	
Accuracy TEST MODE			1%F.S.			1%F.S.	
Operating Prequency			Non-Linear Mode Auto : 40-440Hz			Non-Linear Mode Auto ; 40–440Hz	
Current Range PF Range		0~18.75A	0-28A 0-1	0-37.5A	0~18.75A	0-28A 0-1	0~37.5A
Measuring Efficiency For PV: Payer Conditioners for THD	Systems, 80%		Resistive + Non-Linear Mode			Resistive + Non-Linear Mode	
Operating Frequency Current Range		0-18.75A	Auto ; 40-440Hz 0-28A	0-17.5A	0-18.75A	Auto ; 40~440Hz 0~28A	0-37.5A
Resistive Range UPS Bade-Up Function(CC,U	NAMA	3.2 ohm ~ 64k ohm	2.0 ohm ~ 40k ohm	1.6 ohm ~ 32k ohm	3.2 ohm ~ 64k ohm	2.0 ohm ~ 40 k ohm	1.6 ohm ~ 32k ohm
UVP (VTH) UPS Back-Up Time	injugury		50~350Vrms / 500Vdc 1~99999 Sec. (>27H)			50-425Vrms / 600Vdc 1-99999 Sec. (>27H)	
Bettery Discharge Function(C UVP (VTH)	CLUNICA(CP)					50-425Vrms / 600Vdc	
Battery Discharge Time			50~350Vrms / 500Vdc 1~99999 Sec. (>27H)			1-99999 Sec. (>27H)	
Current Range		0-18.75A	0-28A	0-37.5A	0-18.75A	0-28A	0-37.5A
UVP (VTH) Time Range			2.5V			2.5V	
Fuee Test Mode	Turbo OFF(CC1-3)	18.75Arms	28.0Arms	37.5Acms	18.75Arms	28.0Arms	37.5Arms
Max. Current	Turbo ON(CC3) Turbo ON(CC1-2)	37.5Arms (x2) *3	56.0Acms (x2) *3	75.0Arms (x2) **	37.5Arms (x2) +3	56.0Arms (s2) ^3	75.0Arms (x2) "3
Trip & Non-Trip Time	Turbo OFF(Time1~3) Turbo ON(Time1~2)		0.01-333.33 Sec. 0.01-0.5 Sec.			0.01-333.33 Sec. 0.01-0.5 Sec.	
OFF Time	Turbo ON(Time3)		0.01-600.00 Sec. 0.1-999.9 Sec.	<u> </u>		0.01-600.00 Sec. 0.1-999.9 Sec.	
Meas. Accuracy Repeat Cycle			60.003 Sec. 0-59959	1		±0.003 Sec. 0-99999	
Short/OPP/OCP Test Function Short Time	Turbo OFF		0.1-105ec. or Cont.			0.1-10Sec. or Cont.	
OPP/OCP Step Time	Turbo ON Turbo OFF		0.1~1Sec. 100ms	1		0.1~1Sec. 100ms	
	Turbe ON Turbo OFF	18.75Arms	100ms, up to 10 Steps 28.0Arms	37.5Acms	18.75Arms	100ms, up to 10 Steps 28.0Arms	37.5Arms
OCP Istop	Turbo ON Turbo OFF	37.5Arms 1875W	56.0Arms 2800W	75.0Acms 3750W	37.5Arms 1875W	\$6.0Arms 2800W	75.0Arms 3750W
OPP Pstop Programmeble Innush Curren	Turbo ON et Simulation: letert - lete	3750W	5600W	7500W	3750W	5600W	7500W
Istart, Inrush Start Current Inrush Step Time		0-37.5A	0–56A 0.1ms–100ms	0-75A	0-37.5A	0-56A 0.1ms-100ms	0-75A
Istop, Inrush Stop Current Programmable Surge Current	Simulation: \$1/17 . \$2	0-18.75A	0-28A	0-37.5A	0-18.75A	0-28A	0-37.5A
S1 and S2 Current T1 and T2 Time		0-37.5A	0-56A 0.01-0.5Sec.	0~75A	0-37.5A	0-56A 0.01-0.5Sec.	0-75A
S3 Current T3 Time		0-18.75A	0-28A 1-9.99Sec. or Cont.	0-37.5A	0-18.75A	0-28A 0.01-9.99Sec. or Cont.	0-37.5A
MEASUREMENTS VOLTAGE READBACK V ME	TER	0.0				AND ADDRESS OF CORE	
Range Resolution	and the same of th		500V 0.01V			600V 0.01V	
Accuracy			a0.05% of (reading + range)			a0.05% of (reading + range) Vrms,V Maa/Min,+/-Vpk	
Parameter CURRENT READBACK A ME	TER	9 9754	Vrms,V Max/Min,+/-Vpk	10 107	0.0104		10 354
Range Resolution		9.375Arms/18.75Arms 0.2mA/0.4mA	14Arms/28Arms 0.3mA/0.6mA	18.75Arms/37.5Arms 0.4mA/0.8mA	9.375Arms/18.75Arms 0.2mA/0.4mA	14Arms/28Arms 0.3mA/0.6mA	18.75Arms/37.5Arms 0.4mA/0.8mA
Accuracy Parameter		±0.	05% of (reading + range) @ 50/60 Irms,I Mux/Min,+/-lpk	Hz	±0	.05% of (reading + range) @ 50/60 lrms,l Max/Min,+/-lpk)Hz
WATT READBACK W METER Range		1875W	2800W	3750W	1875W	2800W	3750W
Resolution Accuracy #4		0.03125W ±0.5% of [reading	0.05W + range) @ 50/60Hz , ±2% of (read	0.0625W ing + range)		0.05W ding + range) @ 50/60Hz , ±2% of (
VA METER POWER FACTOR METER		Vm	nsiArms Correspond To Vrms and Ari	ms		msxArms Correspond To Virms and Ar	
Range Accuracy		5	+/- 0.000-1.000 ±(0.002=(0.001/PF)*F)			+/- 0.000-1.000 ±(0.002±(0.001/PF)*F)	
Frequency METER(Hz) Range			DC,40-440Hz			DC,40-440Hz	
Accuracy Other Parameter METER			0.1%			0.1%	
OTHERS	VA.	VAR, CF_I, Ipeak, Imax., Imin. Vmax., Vmi	in, IHD, VHD, ITHD, VTHD				
Start up Loading Load ON / OFF Angle			wer on loading during Inverter / UPS : programmed for the angle of load ON			ower on loading during Inverter / UPS programmed for the angle of load ON	
Half Cycle and SCR/TRIAC Li Master/Slave (3 Phase or Par			Trailing edge or Leading edge curren			Trailing edge or Leading edge currer Yes, 1 muster and upto 7 slave units	
External Programming Input		/	Yes, 1 master and upto 7 slave units F.S / 10Vdc, Resulction 0.1V			F.S / 10Vdc, Resulation 0.1V	
External SYNC Input Vmonitor (Isolated)			TTL +500V / +10V			TTL +600V / +10V	
Imonitor (Isolated) Interface (OPTION)		a56.25Apk / a10Vpk	±84Apk / ±10Vpk GPIB ; RS-232 ; LAN ; USB	±112.5Apk / ±10Vpk	a56.25Apk / a10Vpk	#84Apk / #10Vpk GPIB ; RS-232 ; LAN ; USB	±112.5Apk / ±10Vpk
MAX. Power Consumption		b	150VA			150VA 0 ~ 40 °C	(2)
Operation Temperature *2							
	mA)@50/60Hz;	-V*0.3;-V*2.2	-V*0.45; -V*3.3	-V=0.6; -V=4.4	-V*0.3;-V*2.2	-V*0.45; -V*3.3	-V*0.6; -V*4.4

AEL-5002-350-18.75 AEL-5003-350-28







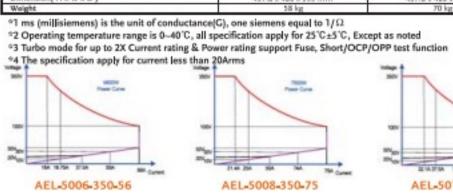


^{*} All specifications apply for 50/60Hz * All specifications subject to change without notice

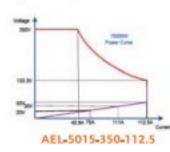
^{°1} ms (millisiemens) is the unit of conductance(G), one siemens equal to $1/\Omega$ °2 Operating temperature range is 0–40°C, all specification apply for 25°C±5°C, Except as noted °3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCP/OPP test function *4 The specification apply for current less than 20Arms

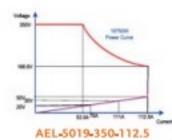
SPECIFICATION MODEL	ONS	AEL-5006-350-56	AEL-5008-350-75	AEL-5012-350-112 5	AEL-5015-250-112 5	AEL-5010-350-112 5	AEL-5023-350-112.5
Power (W) Current(Ampere)		5600 W 56 Arms / 168Apeak	7500 W 75 Arms / 225Apeak	11250W 112.5 Arms / 337.5Apeak	15000 W 112.5 Arms / 337.5Apeak	18750W 112.5 Arms / 137.5Apeak	22500W 112.5 Arms / 137.5Apeak
Voltage(Volt) FREQUENCY Range		de citto f reordices	To remo y ecorpean	50-350Vm	ns / 500Vdc DC-440Hz(UIN,CR,CV Mode)	The strains / servergees	Tracardina y sarcargeas
Over Power Protection		≒ 5880Wrms or Programmable	= 7875Wirms or Programmable	11812.5%/vms or Programmable	11812 SWrms or Programmable	h19687.5Wnms or Programmable	≒23625Wrms or Programmable
Over Current Protection Over Vlotage Protection		≒ 58.8 Arms, or Programmable	h 78.75 Arms, or Programmable	≈ 118.125 Arms or Programmable ≈ 367.5 V	≒ 118.125 Arms or Programmable rms/525Vdc	≒ 118.125 Arms or Programmable	≒ 118.125 Arms or Programmable
Over Temp. Protection OPERATION MODE				Y	es		
Constant Current Mode for Sin Range Resolution Accuracy	IN-Wave	0–56A 1mA/16bits	0-75A 1.25mA/16bits ± (0.1% of settin	0~112.5A 1.875mA/16bits g + 0.2% of range) @ 50,60Hz , ± 0.5	0~112.5A 1.875mA/16bits 5% of (setting + range db DC and 4	0~112.5A 1.875mA/16bits	0~112.5A 1.875mA/16bits
Linear Constant Current Mode Range	for Sine-Wave, Square-Wa	ve or Quasi-Square Wave, PWM Wave 0-56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A
Resolution Accuracy		1mA/16bits	1.25mA/16bits + (0.1% of setting	1.875mA/16bits + 0.2% of range) @ 50/604z , ± 0.5	1.875mA/16bits % of (setting + range) @ DC and 4	1.875mA/16bits 00Hz	1.875mA/16bits
Constant Resistance Mode Range		1 ohm = 20k ohm	0.8 ohm = 16k ohm	0.533 ohm = 10.666k ohm	0.533 ohm = 10.666k ohm	0.533 ahm = 10.666k ahm	0.533 ahm = 10.666k ohm
Resolution*1 Accuracy		0.016666mS/16bits	0.020632mS/16bits ±0.2% of settin	0.031248mS/16bits sg + range) @ 50/60Hz . ± (0.5% of se	0.031248mS/16bits sting + 2% of range) @ DC and 400	0.031248mS/16bits 4z	0.031248mS/16bits
Constant Voltage Mode Range Resolution					ns / 500Vdc		
Accuracy Constant Power Mode			0		range) @ 50/60Hz	0	.00
Range Resolution		5600W 0.1W	7500W 0.1W	11250W 1W	15000 W 1W	18750W 1W	22500W 1W
CREST FACTOR (OC & CP MO	DE CHEN)			#0.5% of (setting + range) @ 30/60Hz ,			
Range Resolution				0	2-5 1.1		
POWER FACTOR (CC & CP M	ODE ONLY)				m) + 1%F.S. g or Lead		
Range Resolution Accuracy		22 12 12 13		0	01 F.S.		
TEST MODE UPS Efficient Measurement				and the	ear Mode		
Operating Frequency Current Range		0-56A	0~75A	Auto ; 4 0~112.5A	0~440Hz 0~112.5A	0~112.5A	0~112.5A
PF Range Measuring Efficiency For PV 3 Proper Conditioners for THD 8	pierre,	e de la companie de l	4 2000	0- Resistive + No	-1 on-Linear Mode		NA (1982) NO.
Operating Frequency Current Range	439	0-56A	0-75A		0-440Hz 0-112.5A	0-112.5A	0-112.5A
Resistive Range UPS Bade-Up Function(CC,UN	In In	1 ohm = 20 k ohm	0.8 ohm ~ 16k ohm	0.533 ohm ~ 10.666k ohm	0.533 ahm ~ 10.666k ahm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm
UVP (VTH) UPS Back-Up Time	quyu'j				ns / 500Vdc iec. (>27H)		
Bettery Discharge Function(CC UVP (VTH)	LUN,OLO)				rs / 500V&c		
Battery Discharge Time UPS Transfer Time					iec. (>27H)		
Current Range UVP (VTH)		0-56A	0-75A		0-112.5A SV	0-112.5A	0-112.5A
Time range Fuee Test Islade	Turbo OFF(CC1-3)		×	0.15ms~	999.99ms		
Max. Current	Turbo ON(CC3) Turbo ON(CC1-2)	56Arms 112Arms (x2)*1	75Arms 150Arms (x2) *1	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (s2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3
Trip & Non-Trip Time	Turbo OFF(Time1~3) Turbo ON(Time1~2)	110,4110 (10)	- John College	0.01-33			
OFF Time	Turbo ON(Time3)	2 2		0.1-99			
Meas. Accuracy Repeat Cycle Short/OPP/OCP Test Function	_				9999		
Short Time	Turbo OFF Turbo ON				c. or Cont. 15ec.		
OPP/OCP Step Time	Turbo OFF Turbo ON	li e e e e e e e e e e e e e e e e e e e		10	0ms to 10 Steps		
OCP Intop	Turbo OFF Turbo ON	36Arms 112Arms	75Arms 150Arms	112.5Arms 225Arms	112.5Arms 225Arms	112.5Arms 225Arms	112.5Arms 225Arms
OPP Petop	Turbo OFF Turbo ON	5600W 11200W	7500W 15000W	11250W 22500W	19000W 10000W	18750W 17500W	22500W 45000W
Programmable Innush Current Istart, Innush Start Current Innush Step Time	Samulation: Intert - Intop /	0-112A	0-150A	0-225A	0-225A -100ms	0-225A	0-22SA
Istop, Inrush Stop Current Programmable Surge Current	Smalaton: \$1/11 = \$2/12	0-56A	0-75A	0-112.5A	0-112.5A	0-112.5A	0-112.5A
S1 and S2 Current T1 and T2 Time		0-112A	0~150A	0-225A 0.01-	0-225A 0.5Sec.	0-225A	0-225A
53 Current T3 Time		0-56A	0-75A	0-112.5A 0.01-9.995	0-112.5A Sec. or Cont.	0-112.5A	0-112.5A
MEASUREMENTS VOLTAGE READBACK V METE Range	IR .	0		44	507		
Resolution Accuracy				0.0	DIV ading + range)		
Parameter CURRENT READBACK A METI	ER			Vnms,V Mar	song + range) s/Min,+/-Vpk		
Range Resolution		28Arms/56Arms 0.6mA/1.2mA	37.SArms/7SArms 0.8mA/1.6mA	56.25Arms/112.5Arms 1.2mA/2.4mA	56.25Arms/112.5Arms 1.2mA/2.4mA	56.25Arms/112.5Arms 1.2mA/2.4mA	56.25Arms/112.5Arms 1.2mA/2.4mA
Parameter WATT READBACK W METER					+ range) @ 50/60Hz /Min.+/-lpk		
Range Resolution		5600W 0.1W	7500W 0.125W	11250W 0.1875W	15000W 0.25W	18750'W 0.3125W	22500W 0.375W
Accuracy *4 VA METER		50.1 99	W.1224	±0.5% of [reading + range] @ 50	I/60Hz , ±2% of (reading + range) and To Virins and Arms	0.21.224	4,3,24
Power Factor METER Range					10-1.000		
Accuracy Frequency METER(Hz)					.001/PF)*F)		
Range Accuracy Other Parameter METER					-440Hz 1%		
OTHERS			.VA, VAR, CF_L Ipeak, Im	ux., Imin. Vmax., Vmin., IHD, VHD, ITHD	, VTHD		
Start up Loading Load ON / OFF Angle				0 ~ 359 degree can be programmed for the			
Half Cycle and SCR/TRIAC Loa Master/Slave (3 Phase or Paral	lel Application)		Postive o	r Negative half cycle, 90' Trailing edge or I Yes, 1 master and	Leading edge current waveform can be po d upto 7 slave unit		
External Programming Input (6 External SYNC Input	OPTION)			Т	tesulation 0.1V		
Vmonitor (isolated) Imonitor (isolated)		±168Apk / ±10Vpk	a225Apk / a10Vpk	±337.5Apk / ±10Vpk	/ ±10V = 337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk	a337.5Apk / a10Vpk
Interface (OPTION) MAX. Power Consumption Operation Temperature "2	Section Section	270VA	270VA	390VA 0 ~ -	2 ; LAN ; USB 510VA	630VA	750VA
Current of Input Impedance(m @ 400Hz	A)@50/60Hz;	~V*0.9; ~V*6.6	~V*1.2;~V*8.8	~V*1.8;~V*13.2	~V*2.4 ; ~V*17.6	~V*3.0:~V*22	~V°3.6; ~V°26.4
Dimension(H x W x D) Weight	100 100	457.8 x 480 x 593 mm 58 kg	457.8 ± 480 ± 593 mm 70 kg	635.7 x 480 x 593 mm 105kg	813.5 x 480 x 593 mm 140kg	1283 x 600 x 600 mm 260kg	1283 x 600 x 600 mm 295kg
	unit of conductance!	G), one siemens equal to $1/\Omega$		cifications apply for 50/60Hz			

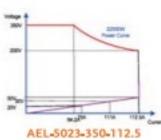
^{*} All specifications apply for 50/60Hz * All specifications subject to change without notice







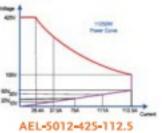


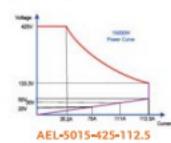


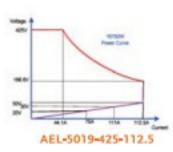
Simply Reliable Good Will Instrument Co., Ltd.

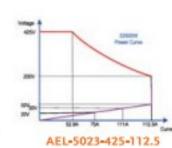
MODEL	IONS	AEL-5006-425-56	AEL-5008-425-75	AEL-5012-425-112.5	AEL-5015-425-112.5	AEL-5019-425-112	5 AEL-5023-425-1
ower (W) urrent(Ampere)		5600 W 56 Arms / 168Apeak	7500 W 75 Arms / 225Apeak	11250W 112.5 Arms / 337.5Apeak	15000 W 112.5 Arms / 337.5 Apeak	18750W 112.5 Arms / 337.5Apeak	22500W 112.5 Arms / 337.5Apeal
oltage(Volt) REQUENCY Range		30.0000 1.000 9000	Taranta y Lean police	50-425Vm	ns / 600Vdc DC-440Hz(LIN,CR,CV Mode)		
NOTECTIONS over Power Protection		to C460/Abross or December while	in 24 70 Monte of Department Ma			h10001 SWood of Brownship	P21625Wour or Business
ver Current Protection		≒ S880Wrms or Programmable ≒ S8.8 Arms, or Programmable	≒ 7875Wrms or Programmable ≒ 78.75 Arms, or Programmable	≒11812.5Wrms or Programmable ≒ 118.125 Arms or Programmable	≈15750'#/rms or Programmable ≈ 118.125 Arms or Programmable	≈19687.5Wrms or Programmable ≈ 118.125 Arms or Programmable	
ver Vlotage Protection ver Temp. Protection					rms/630Vdc es		
PERATION MODE onstant Current Mode for	Sine-Wave				410000000	0.0000000000000000000000000000000000000	2000
Range Resolution		0~56A 1mA/16bits	0~75A 1.25mA/16bits	0~112.5A 1.875mA/16bits	0~112.5A 1.875mA/16bits	0-112.5A 1.875mA/16bits	0-112.5A 1.875mA/16bits
Accuracy	de fee Sine Ways Same	-Wave or Quasi-Square Wave, PWM Wav	± 1 0.1% of set	ting + 0.2% of range @ 50/60Hz , ±			
Range Resolution	or to sine-wave, square	0-56A 1mA/16bits	0~75A 1.25mA/16bits	0~112.5A 1.875mA/16bits	0-112.5A 1.875mA/16bits	0-112.5A 1.875mA/16bits	0-112.5A 1.875mA/16bits
Accuracy		IMA/HORS		ting + 0.2% of range @ 50/60Hz , a			LaramA/Tebits
onatant Rusistance Mode Range	V	1 ohm – 20k ohm	0.8 ohm = 1£k ohm	0.533 ohm = 10.666k ohm	0.533 ohm = 10.666k ohm	0.533 ohm = 10.666k ohm	0.533 ohm = 10.666k ohr
Resolution*1 Accuracy		0.016666mS/16bits	0.020832m5/16bits ±0.2% of se	0.031248m5/16bits etting + range) @ 50/60Hz , ± (0.5% of	0.031248mS/16bits setting + 2% of range) @ DC and	0.031248mS/16bits 400Hz	0.031248mS/16bits
tange				50-425Vnn	ns / 600Vdc		
Resolution				0.	1V + range) @ 50/60Hz		
onatant Power Mode		5600W	7500W	11250W	15000 W	18750W	22500W
Range Resolution		0.1W	0.1W	1W	1W	1W	1W
REST FACTOR (CC & CP)	HODE ONLY)			±0.5% of (setting + range) @ 50/60H:	z , ±2% of [setting + range]		
lange tesolution		-			£-5		
OWER FACTOR (OC & CP	MODE ONLY				m) + 1%F.S.		
tange tesolution				0-1 Lag	or Lead		
COURSEY ST MODE					P.S.		
PS Efficient Measurement					ear Mode		
Operating Frequency Current Range		0~56A	0~75A	0~112,5A	0~440Hz 0~112,5A	0-112.5A	0-112.5A
F Range counting Efficiency For Pt	Systems,		63000	Desiration - Mo		<u> </u>	20 V V V V V V V V V V V V V V V V V V V
easuring Efficiency For Proper Conditioners for THE Operating Frequency	80%				n-Linear Mode 0-440Hz		
Current Range Resistive Range		0-56A 1 ahm ~ 20k ahm	0-75A 0.8 ohm ~ 16k ohm	0-112.5A 0.533 ohm ~ 10.666k ohm	0-112.5A 0.533 ohm ~ 10.666k ohm	0-112.5A 0.533 ohm ~ 10.666k ohm	0-112.5A 0.533 ohm ~ 10.666k oh
S Back-Up Function(CC,	LIN,CR,CP)	1 01sm ~ 20 g 01sm	0.8 onm = regionm			0.333 OHM ~ 10.066E OHM	0.533 onm = 10.0666 on
IVP (VTH) IPS Back-Up Time		<u> </u>		50-425Vm 1-99999 S	isc. (>27H)		
ittery Discharge Punction(JVP (VTH)	(ocultidad)			50-425Vm	ns / 600Vdc		
Nattery Discharge Time				1~99999 5	Sec. (>27H)		
Ourrent Range JVP (VTH)		0-56A	0-75A	0-112.5A	0-112.5A SV	0-112.5A	0-112.5A
ime range				0.15ms-			
use Test Mode	Turbo OFF(CC1-3)	56Arms	75Ams	112.5Ams	112.5Ams	112.5Arms	112.5Ams
Max. Current	Turbo ON(CCI) Turbo ON(CC1-2)	112Arms (x2)*5	150Arms (x2) ***	225Arms (s2) *3	225Arms (x2) *3	225Arms (x2) +3	225Arms (x2) +3
Trip & Non-Trip Time	Turbo OFF(Time1~3) Turbo ON(Time1~2)			0.01~33 0.01=0			
OFF Time	Turbo ON(Time3)	3		0.01-60			
Meas. Accuracy Repeat Cycle				±0.00	13 Sec. 9959		
hort/OPP/OCP Test Fund	Turbo OFF			0.1~10Se			
Short Time	Turbo ON			0.1-	1Sec.		
OPP/OCP Step Time	Turbo OFF Turbo ON		A 100 100 1	100ms, up	Oms to 10 Steps	A1 200000000000	45.17.000.000
OCP latop	Turbo OFF Turbo ON	56Arms 112Arms	75Arms 150Arms	112.5Arms 225Arms	112.5Arms 225Arms	112.5Arms 225Arms	112.5Arms 225Arms
OPP Pstop	Turbo OFF Turbo ON	5600W 11200W	7500W 15000W	11250W 22500W	15000W 30000W	18750W 37500W	22500W 45000W
tart, Innush Start Current	ent Simulation: latert - lat	ор / Тээр 0-112A	0-150A	0-225A	0-225A	0-225A	0-225A
rush Step Time		@		0.1 ms	-100ms		•
top, Inrush Stop Current Ogrammable Surge Curre	nt Simulation: \$1/11 - \$2		0-75A	0-112.5A	0-112.5A	0-112.5A	0-112.5A
and S2 Current and T2 Time		0-112A	0-150A	0-225A 0.01-	0-225A 0.55ec.	0~225A	0-22SA
Current Time		0-56A	0-75A	0-112.5A 0.01-9.99	0-112.5A Sec. or Cont.	0-112.5A	0-112.5A
EASUREMENTS	ETER			700.0100			
DLTAGE READRACK V MI		<i>l</i> .		50	10V		
OLTAGE READBACK V MI lange resolution		N.)1V		
tange tesolution accuracy				0.0 a0.05% of (re-	OlV ading + range)		
ange tesolution couracy arameter JIRRENT READBACK A MI	ETER			a0.05% of (re. Verns, V Mas	ading + range) i/Min,+/-Vpk		
ange esolution couracy arameter IRRENT READBACK A Mi lange	ETER	28Arms/56Arms 0.6mA/1.2mA	37.5Arms/75Arms 0.8mA/1.6mA	0.05% of (rei 20.05% of (rei Verms,V Max 56.25Aems/112.5Aems 1.2mA/2.4mA	ading + range) yMin,+j-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA	56.25Aems/112.5Aems 1.2mA/2.4mA	56.25Arms/112.5Arms 1.2mA/2.4mA
ange esolution couracy arameter JRRENT READBACK A Mi ange ecolution ccuracy	ETER			0.005% of (rei Vrms,V Max 56.25Arms/112.5Arms 1.2mA/2.4mA ±0.1% of (_reading +	ading + range) i/Min.+/-Vpk 56.25Aems/112.5Aems		
onge esolution couracy aramater IRRENT READBACK A Mi ange esolution couracy aramater ATT READBACK W METE	2	0.6mA/1.2mA	0.8mA/1.6mA	0.05% of (re 20.05% of (re Verms,V Mas 56.25Aerms/112.5Aerms 1.2mA/2.4mA ±0.1% of { reading :	ading + range) t/Min,+/-Vpk 56.2\$Aems/112.\$Aems 1.2mA/2.4mA + range) @ 50/60Hz /Min,+/-Ipk	1.2mAj2.4mA	1.2mA/2.4mA
ange esolution couracy arameter irrent READBACK A Mi enge esolution couracy arameter ATT READBACK W METE ange esolution	2			0.05% of (rei Vrms,V Max 56.25Arms/112.5Arms 1.2mA/2.4mA ±0.1% of { reading : lrms,1 Max 11250W 0.1875W	ading + range) y/Min,+/-Vpk 56.25Aems/112.5Aems 1.2mA/2.4mA + range] @ 50/60Hz /Min,+/-Ipk 15000W 0.25W		\$6.25Arms/112.5Arms 1.2mA/2.4mA 22500W 0.375W
inge isolution coursely incarnater in a coursely in a coursely in a coursely in a coursely in a METER	2	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W	0.005% of (rei 20.05% of (rei 20.05% of (rei 20.05% of (rei 20.05% of (reading throat) Man 20.1% of (reading throat) 20.1875W 20.1875W 20.5% of (reading throat) @ 50	ading + range) y/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range) @ 50/60Hz /Min,+/-Ipk 15000W	1.2mA/2.4mA 18750W	1.2mA/2.4mA 22500W
inge ciolution couracy iramoter RRENT READBACK A Milinge resolution couracy iramoter	2	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W	0.05% of (rei 20.05% of (rei 20.05% of (rei 20.05% of (rei 20.05% of (reading + 20.1% of (reading + 20.1% of (reading + 20.1% of (reading + 20.5% of (reading + range) ® 50	ading + range) y/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range 1 @ 50/60Hz /Min,+/-Ipk 15000W 0.25W 0.00Hz, ±5% of (reading + range) and To Virms and Arms	1.2mA/2.4mA 18750W	1.2mA/2.4mA 22500W
inge coursey in a course of the course of th	2	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W	0.05% of (rei 20.05% of (rei 20.05% of (rei 20.05% of (rei 20.05% of (reading + 20.1% of (reading + 20.1% of (reading + 20.1% of (reading + 20.5% of (reading + range) ® 50	ading + range) y/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range) @ 50/60Hz /Min,+/-lpk 15000W 0.25W y/60Hz , ±3% of (reading + range) and To Vrms and Arms	1.2mA/2.4mA 18750W	1.2mA/2.4mA 22500W
inge isolution i	2	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W	0.05% of (re: 20.05% of (re: Verms,V Max 56.25Aerms,(112.5Aerms 1.2mA/2.4mA ±0.1% of { reading - lerms,1 Max 11250W 0.1875W ±0.5% of { reading + range } @ 50 Verms,4Arms Correspon +/- 0.00 ±/0.002±(0	ading + range) i/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range) @ 50/60Hz /Min,+/-lpk 15000W 0.25W 0/60Hz , ±3% of (reading + range) ind To Vrms and Arms 00–1.000 .001/PF)+F] -440Hz	1.2mA/2.4mA 18750W	1.2mA/2.4mA 22500W
inge coursey in a course of the course of th	2	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W 0.125W	0.05% of (rei	ading + range) i/Min,+/-Vpk 56.25Aems/112.5Aems 1.2mA/2.4mA + range] @ 50/60Hz /Min,+/-Ipk 15000W 0.25W (/60Hz , ±5% of (reading + range) and To Vrms and Arms 10–1.000 .001/PF)*F] -440Hz	1.2mA/2.4mA 18750W	1.2mA/2.4mA 22500W
single esolution coursely aramater in READBACK A Milange esolution coursely aramater in READBACK Williams are security aramater in READBACK WIMETER angle esolution coursely 14 A METER were Factor METER angle coursely in READBACK WIMETER angle esoursely in READBACK WIMETER angle coursely meters in READBACK WIMETER angle coursely meters in READBACK WIMETER in READBACK WIMETER Angle coursely meters in READBACK WIMETER IN READ	2	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W 0.125W	0.05% of (re. Verns, V Mas 56.25Aerms/112.5Aerms 1.2mA/2.4mA	ading + range) I/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range) @ 50/60Hz /Min,+/-lpk 15000W 0.25W 0/60Hz , £3% of (reading + range) ind To Vrms and Arms 10–1.000 .001/PF)*F] -440Hz HD, VTHD	1.2mA/2.4mA 18750W	1.2mA/2.4mA 22500W
ange esolution couracy aramater JERENT READBACK A Mi inge resolution couracy aramater ATT READBACK W METE ange esolution couracy 4 A METER mETER ange couracy equency METER[Hz] ange couracy ther Perameter METER HERS art up Loading	2	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W 0.125W VA, VAR, CF_I, Ipeak,	0.05% of (re. Verns, V Mas 56.25Aerms/112.5Aerms 1.2mA/2.4mA	ading + range) i/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range) @ 50/60Hz /Min,+/-Ipk 15000W 0.25W 0/60Hz , ±5% of { reading + range } ind To Virins and Arms 10–1.000 .001/PF)*F} -440Hz ID, VTHD ring Inverter / UPS start up	1.2mA/2.4mA 18750W 0.3125W	1.2mA/2.4mA 22500W
tange tendution coursely terameter JERRENT READBACK A Militage tendution coursely terameter ATT READBACK W METE tange tendution coursely tange coursely tange tendution coursely tange tendution ten	R	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W 0.123W VA, VAR, CF_I, Ipeak,	0.05% of (re	ading + range) i/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA range] @ 50/60Hz /Min,+/-Ipk 15000W 0.25W 160Hz , ±396 of (reading + range) and To Vrms and Arms 10–1.000 1001/PF)*F] 440Hz 196 40, VTHD ring Inverter / UPS start up are angle of load ON and load OFF loading angling dge current wiveform can be p	1.2mA/2.4mA 18750W 0.1125W	1.2mA/2.4mA 22500W
ange esolution couracy aramater JERENT READBACK A Mi intege resolution couracy aramater ATT READBACK W METE ange esolution couracy at a METER weer Factor METER ange couracy equency METER(Hz) ange couracy ther Perameter METER HERS art up Loading atter/Stave (3 Phase or Paternal Programming Input	R Loading	0.6mA/1.2mA 5600W	0.8mA/1.6mA 7500W 0.123W VA, VAR, CF_I, Ipeak,	36.25Aerrs/112.5Aerrs 1.2mA/2.4mA 20.1% of { reading : lerrs,1 Max 20.1% of { reading : lerrs,1 Max 20.5% of { reading + range } @ 50 Vints,4 mis Correspo 4/5-0.002±(0 DC,40-0. Imax, limin, Vinax, Vinin, 1HD, VHD, ITH Yes , Power on loading du 0 ~ 359 degree can be programmed for the riving auther and F.S. / 10vde, 8 F.S. / 10vde, 8	ading + range) i/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range) @ 50/60Hz /Min,+/-lpk 15000W 0.25W i/60Hz , ±5% of { reading + range } ind To Vrms and Arms 10–1.000 .001/PF)*F] -440Hz HD, VTHD ring Inverter / UPS start up ire angle of load ON and load OFF loading edge current waveform can be p desplotion 0.1V	1.2mA/2.4mA 18750W 0.1125W	1.2mA/2.4mA 22500W
ange esolution couracy parameter JERENT READBACK A Mi inge esolution couracy parameter ATT READBACK W METE ange esolution couracy parameter ATT READBACK W METE ange couracy equency METER ange couracy equency METER(Hz) ange couracy equency METER(Hz) ange couracy ther Parameter METER HERS ant up Loading ad ON / OFF Angle off Cycle and SCR/TRIAC I anter/Stave [3 Phase or Paternal SYNC Input formal SYNC Input nonitor (Isolated)	R Loading	0.6mA/1.2mA 5600W 0.1W	0.8mA/1.6mA 7500W 0.125W VA, VAR, CF_I, Ipeak, Postive o	0.005% of (re. Verms, V Max 56.25Aems/112.5Aems 1.2mA/2.4mA ±0.1% of { reading + lems, I Max 0.1875W 0.1875W ±0.5% of { reading + range } @ 50 Verms, Aems Correspo Verms, Aems Correspo ±1/0.002±10 0.0000000000000000000000000000000000	ading + range) i/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA range] @ 50/60Hz /Min,+/-Ipk 15000W 0.25W 160Hz , ±396 of (reading + range) ind To Vinns and Arms 10–1.000 1001/PF)*F] -440Hz 196 4D, VTHD ring Inverter / UPS start up ire angle of load ON and load OFF loadin cading edge current waveform can be p d upto 7 slave unit leaufotion 0.1V TL / ±10V	1.2mAj2.4mA 18750W 0.3125W 18 regrammed	1.2mA/2.4mA 22500W 0.375W
ange esolution couracy aramater JERENT READBACK A Mi inge esolution couracy aramater ATT READBACK W METE ange esolution couracy ange esolution couracy **4 A METER wer Factor METER ange couracy quency METER[Hz] ange couracy her Parameter METER HERS art up Loading and ON / OFF Angle aft ON / OFF Angle aft Up Loading anter/Slave (3 Phase or Pa ster/Slave (1	R Loading	0.6mA/1.2mA 5600W 0.1W a.168Apk / a.10Vpk	VA, VAR, CF_I, Ipeak, Postive o	0.005% of (rei	ading + range) i/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range) @ 50/60Hz /Min,+/-lpk 15000W 0.25W /60Hz , ±5% of (reading + range) and To Vrms and Arms 10–1.000 .001/PF)*F] -440Hz 4D, VTHD ring Inverter / UPS start up re angle of load ON and load OFF loading edge current waveform can be pl d upto 7 slave unit lesufotion 0.1V TL / ±10V ±337.5Apk / ±10Vpk z ; LAN ; USB	1.2mA/2.4mA 18750'a/ 0.3125W/ *E rogrammed a337.5Apk / a10Vpk	1.2mA/2.4mA 22500W 0.375W a537.5Apk / a10Vpk
tange tendution coursely transater JERENT READBACK A Mi tange tesolution coursely transater ATT READBACK W METE tange teconicion coursely transater A METER tange teconicy tequency METER(Hz) tange teconicy ther Parameter METER there and ON / OFF Angle	R Loading	0.6mA/1.2mA 5600W 0.1W	0.8mA/1.6mA 7500W 0.125W VA, VAR, CF_I, Ipeak, Postive o	0.005% of (re: 20.05% of (re: Verms,V Max 56.25Aerms/112.5Aerms 1.2mA/2.4mA ±0.1% of { reading + lerms,I Max 11250W 0.1875W/ ±0.5% of { reading + range }	ading + range) i/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range 1 @ 50/60Hz /Min,+/-Ipk 15000W 0.25W /60Hz , ±5% of { reading + range } ind To Vrms and Arms 10–1.000 .001/PF)*F} -440Hz 196 4D, VTHD ring Inverter / UPS start up re angle of load ON and load OFF loading dupto 7 slave unit less/form can be p desp/form can be p form can be p desp/form can be p desp/form can be p desp/form can be p form can be p desp/form can be p form can be p desp/form can be p form can be p desp/form can be p form can be p desp/form can be p de	1.2mAj2.4mA 18750W 0.3125W 18 regrammed	1.2mA/2.4mA 22500W 0.375W
tange tendution coursely transater JERENT READBACK A Mi tange tesolution coursely transater ATT READBACK W METE tange tendution coursely transater ATT READBACK W METE tange tendution coursely tendution coursely the Tester METER tange coursely ther Parameter METER art up Loading and ON / OFF Angle aff Cycle and SCR/TRIAC I anter/Stave (3 Phase or Parameter ternal SYNC Input ternal COPTION) AX. Power Consumption	Loading traffel Application	0.6mA/1.2mA 5600W 0.1W a.168Apk / a.10Vpk	VA, VAR, CF_I, Ipeak, Postive o	a0.05% of (rei a0.05% of (rei Verms,V Max 56.25Aems/112.5Aems 1.2mA/2.4mA ±0.1% of (reading sizems,) Max 11250W 0.1875W ±0.5% of (reading + range) @ 50 VermsoArms Correspo VermsoArms Correspo ±(0.002±)0 DC,40- 0. Imax, Imin. Vmax, Vmin, IHD, VHD, ITI- Yes , Power on loading du 0 ~ 359 degree can be programmed for the Negative half cycle, 90' Trailing edge or 1 Yes, 1 master and F.S. / 10Veb, R T 4600V a337.5Apk / a10Vpk GP18 : RS-23:	ading + range) i/Min,+/-Vpk 56.25Arms/112.5Arms 1.2mA/2.4mA + range 1 @ 50/60Hz /Min,+/-Ipk 15000W 0.25W /60Hz , ±5% of { reading + range } ind To Vrms and Arms 10–1.000 .001/PF)*F} -440Hz 196 4D, VTHD ring Inverter / UPS start up re angle of load ON and load OFF loading dupto 7 slave unit less/form can be p desp/form can be p form can be p desp/form can be p desp/form can be p desp/form can be p form can be p desp/form can be p form can be p desp/form can be p form can be p desp/form can be p form can be p desp/form can be p de	1.2mA/2.4mA 18750'a/ 0.3125W/ *E rogrammed a337.5Apk / a10Vpk	1.2mA/2.4mA 22500W 0.375W a537.5Apk / a10Vpk

AEL-5006-425-56 AEL-5008-425-75









^{*1} ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Ω
*2 Operating temperature range is 0-40°C, all specification apply for 25°C±5°C, Except as noted
*3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCP/OPP test function
*4 The specification apply for current less than 20Arms

[°] Al specifications apply for 50/60Hz ° Al specifications subject to change without notice

SPECIFICATI MODEL		AEL-5003-480-18.75	AEL-5004-480-28			
Power (W) Current(Ampere)		2800W 3750 W 18.75 Arms / 56.25Apeak 28 Arms / 84Apeak 50–480Vrms / 700Vdc				
/oltage(Volt) -REQUENCY Range		50–480Vrm DC,40–70Hz/CC,CP Mode) .				
NOTECTIONS Over Power Protection	-	+2940Wirms or Programmable	≒ 3917.5Wrms or Programmable			
Over Current Protection Over Viotage Protection		≈ 19.687 Arms or Programmable ≈ 504Vrms				
PERATION MODE		Ye	1			
Constant Current Mode for S Range	ine-Wave	0-18.75A	0-28A			
Resolution Accuracy		0.3125mA/16bits ± (0.1% of setting + 0.2% of range) @ 50/60Hz	0.5mA/16bits , ± 0.5% of (setting + range) @ DC and 400Hz			
Linear Constant Current Mod Range	le for Sine-Wave, Square	Wave or Quasi-Square Wave, PWM Wave 0-18.75A	D-28A			
Resolution Accuracy		0.3125mA/16bits a: (0.1% of setting + 0.2% of range @ 50/60Hz	0.5mA/16bits , a 0.5% of (setting + range) @ DC and 400Hz			
Constant Resistance Mode Range		4 ohm = 30K ohm	2.5 ohm – 50K ohm			
Resolution*1 Accuracy		0.004166mS/16bits ±0.2% of (setting + range) @ 50/60Hz ,± (0.5	0.006666mS/16bits % of setting + 2% of range) @ DC and 400Hz			
Constant Voltage Mode Range		50-480Vrm				
Resolution Accuracy		0.01 4(0.1% of setting				
Constant Power Mode Range		2800°W	3750W			
Resolution Accuracy*4		0.1W ±0.5% of (setting + range) @ 50/	0.1W i0Hz . ±2% of (setting + range)			
CREST FACTOR (CC & CP M	ODE ONLY)	√2.				
Resolution Accuracy		0.5% / Irm	1.00			
POWER PACTOR (CC & CP)	NODE ONLY)	0-1 Lag				
Resolution Accuracy		0-1 Lig 0.0	1			
EST MODE		Non-Line	Miles and the second			
Operating Frequency Current Range		0-18.75A				
PF Range	-	0-	1			
Measuring Efficiency For PV: Poper Conditioners for THD	80%	Resistive + No				
Operating Frequency Current Range		0-18.73A Auto ; 40	0-28A			
Resistive Range UPS Beds-Up Function(CC,U	N,CR,CP)	4 ohm = 80k ohm	2.5 ohm ~ 50 k ohm			
UVP (VTH) UPS Back-Up Time	9.97.0032	50–480Vm 1–99999 St				
Beitery Discharge Function(C UVP (VTH)	C,UN,CR,CP)	50-480Vm				
Battery Discharge Time UPS Transfer Time		1-99999 54				
Current Range UVP (VTH)		0-18.75A 2.5	0~28A V			
Firms range		0.15ms-9	99.99ms			
Max. Current	Turbo OFF(CC1-3) Turbo ON(CC3)	18.75Arms	28.0Arms			
	Turbo ON(CC1-2) Turbo OFF(Time1-3)	37.5Aems (x2) *3 0.01–333	56.0Arms (x2) *3 33 Sec.			
Trip & Non-Trip Time	Turbo ON(Time1-2) Turbo ON(Time3)	0.01-0. 0.01-600				
OFF Time Meas. Accuracy		0.1-999.9 Sec. ±0.003 Sec.				
Repeat Cycle Short/OPP/OCP Test Puncti	on	0-99	999			
Short Time	Turbo OFF Turbo ON					
OPP/OCP Step Time	Turbo OFF Turbo ON	100 100ms, up 1				
OCP Istop	Turbo OFF Turbo ON	18.75Arms 37.5Arms	28.0Arms 56.0Arms			
OPP Patop	Turbo OFF Turbo ON	2900'W 5600'W	3750W 7500W			
Programmable Innush Current Istart, Innush Start Current			0-56A k			
Inrush Step Time Istop, Inrush Stop Current		0-18.75A 0.1ms-				
Programmable Surge Current \$1 and \$2 Current	t Simulation: 51/17 - 52	/T2 - 53/T3 0-37.5A	0-56A			
T1 and T2 Time 53 Current		0-18.75A 0.01-0				
T3 Time MEASUREMENTS		0-18.73A. 0.01-9.99S				
VOLTAGE READBACK V MET	TER	100	N/			
Resolution		70 0.01	25V			
Parameter	VED	±0.05% of (rea Vrms,V Max,				
CURRENT READBACK A ME Range	T CR	9.175Arms/18.75Arms	14Arms/28Arms			
Resolution Accuracy		0.2mA/0.4mA +0.05% of (reading 1				
Parameter WATT READBACK W METER		Inns,I Maxi				
Resolution		2300W 0.05W	3750W 0.0625W			
Accuracy*4 VA METER		±0.5% of (reading + range) @ 50) Vmms:Arms Correspon	bUHz , ±Z% of (reading + range) of To Vms and Ams			
Power Factor METER Range		#J- 0.00				
Accuracy Frequency METER(Hz)		±(0.002± 0.				
Range Accuracy		DC,45.				
Other Parameter METER	v	A, VAR, CF_I, Ipeak, Imas., Imin. Vmax., Vmin., IHD, VHD, ITH	D, VTHD			
OTHERS Start up Loading		Yes , Power on loading dur				
Load ON / OFF Angle Half Cycle and SCR/TRIAC Lo	oading	0 – 359 degree can be programmed for the Postive or Negative half cycle, 90" Trailing edge or L	angle of load ON and load OFF loading			
Master/Slave (3 Phase or Par	allel Application)	Yes, 1 master and F.S./10vdc, 8:	apto 7 slave units			
	(or more)	П	L			
External SYNC Input		4700V	±84Apk / ±10Vpk			
External SYNC Input Vmonitor (Isolated) Imonitor (Isolated)		±56.25Apk / ±10Vpk				
External SYNC Input Vmonitor (Isolated) Imenitor (Isolated) Interface (OPTION) MAX. Power Consumption		GPIB : RS-232 150	; LAN ; USB VA			
External Programming Input External SYNC Input Vimonitor (Isolated) Imenitor (Isolated) Interface (OPTION) MAX. Power Consumption Operation Temperature *2 Current of Input Impedance() 49 440Hz	mA]@50/60Hz;	GPIB ; RS-232	; LAN ; USB VA			

AEL-5003-480-18.75

- *2 Operating temperature range is 0-40°C, all specification apply for 25°C±5°C, Except as noted
 *3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCP/OPP test function
 *4 The specification apply for current less than 20Arms
 - * All specifications subject to change without notice

AEL-5004-480-28

PEL-022 GPIB Card



PEL-023 RS-232 Card



PEL-024 LAN Card



PEL-025 USB Card



PEL-028 HANDLES, U-shaped handle (for AEL-5006/5008/5012/5015)



PEL-029 HANDLES Rack Accessories (for AEL-5002/5003/5004)



High Power DC Electronic Load



PEL-5000G Series





FEATURES

- * 4U/6K High Power Density Design Also for Bench Testing
- * Turbo Mode Function, Which Allows 1.5 Times the Rated Power or Current to be Used Within Two Seconds
- * Turbo Mode can be Used with OCP/OPP/ BMS/Short Mode/Surge Mode/Hot Plug-In Testing
- * High Tolerance to Environmental Temperature, with 4k/5kW Models not Affected by Environmental Temperature in Power Usage
- * Can set the Power-on Status Value
- * Short Circuit Duration Can be set Within Short Circuit Test Voltage Meter Display Can be Configured as Polarity Positive ("+") or Negative("-")
- * Optional Interface : GPIB, RS232, USB, LAN
- * Protection function Testing for Battery BMS
- * Protection Against V, I, W, and °C

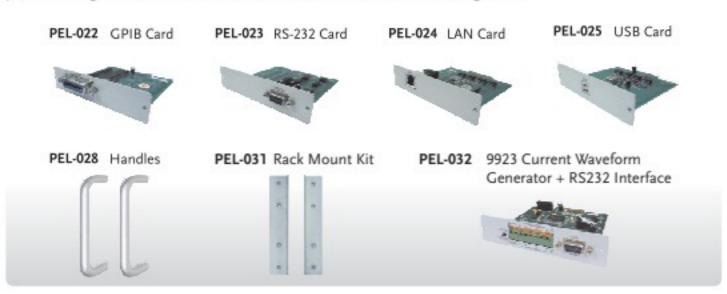
GW Instek PEL-5000G series single-channel electronic load provides 150V/ 600V/ 1200V models with a power range of 4.5.6kW. PEL-5000G can test and verify the specifications of batteries, electric vehicle chargers/charging stations, electric vehicle batteries and solar panels. PEL-5000G supports parallel connection for same voltage specification and different power models. PEL-5000G can support up to 8 units connected in parallel.

PEL-5000G Series has its own control and display panel, CC / CR / CV / CP /Dynamic modes. The new Turbo mode is designed for overload or protection testing, which includes OCP, OPP, Short for AC/DC or DC/DC power source; Over Charge/Discharge and Short for Battery BMS protection; and Blow/Not Blow testing for Fuse, Breaker or PTC Current Protection Components.

Support Short, OCCP and OCDP protection tests for battery BMS protection testing, the peak current before protection and protection response time are measured. The BMS, Fuse, OCP and OPP single-key test functions on the module make test more efficient. The SHORT duration setting and SHORT_VH, SHORT_VL setting function, also can measure Short Voltage and Current. PEL-5000G also provides Programmable LOAD ON/OFF voltage, GO/NG meter check, Voltage meter display" + "or"-" is selectable

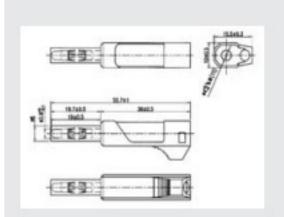
Dynamic can be simulated under CC, CP mode. The current Rise / Fall slew rate can be adjusted individually and there is an external signal input so that load can have a simulated Specific Load Current Waveform. PEL-5000G also provides 150 sets Store / Recall larger memory is much advance feature for each different application. The 150 sets test parameter and status storage function can call the storage memory real time in accordance with the auto sequence requirement, at any time to tune out the stored memory for use.

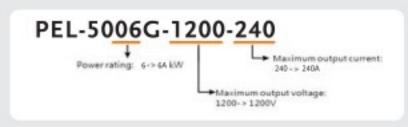
The communication interfaces supported by PEL-5000G include GPIB, RS232, USB, and LAN. The power, voltage and current of each model are shown in the following table:



ORDERING INFORMATION

PEL-5004G-150-400 150V/400A/4000W High Power DC Electronic Load PEL-5005G-150-500 150V/500A/5000W High Power DC Electronic Load PEL-5006G-150-600 150V/600A/6000W High Power DC Electronic Load PEL-5004G-600-280 600V/280A/4000W High Power DC Electronic Load PEL-5005G-600-350 600V/350A/5000W High Power DC Electronic Load PEL-5006G-600-420 600V/420A/6000W High Power DC Electronic Load PEL-5004G-1200-160 1200V/160A/4000W High Power DC Electronic Load PEL-5005G-1200-200 1200V/200A/5000W High Power DC Electronic Load PEL-5006G-1200-240 1200V/240A/6000W High Power DC Electronic Load





STANDARD ACCESSORIES

PEL-5000G Series operation manual BANANA PLUGS : Please refer to Fig.1 x 1 BNC - BNC CABLE: BNC to BNC CABLE, 1m x 1 HD-DSUB: 15PIN Parallel wire Parallel Wire x 1 PEL-028 HANDLES, U-shaped handle(fixed to the bracket) PEL-031 Rack Mount Kit For PEL-5000G

OPTIONAL ACCESSORIES

PEL-022	GPIB Card	GTL-246	USB Cable, USB 2.0, A-B Type, 1200mm
PEL-023	RS-232 Card	GTL-248	GPIB Cable, Double Shielded, 2000mm
PEL-024	LAN Card	GTL-250	GPIB Cable, Double Shielded, 600mm
PEL-025	USB Card	PEL-032	9923 Current Waveform Generator + RS232 Interface
PEL-030	GPIB+RS-232 Card		

Note: * Regarding the product delivery date, please contact your regional sales representative.

Rear Panel



MODEL	PEL-5004	G-150-400	50-400 PEL-5005G-150-500		PEL-5006G-150-600		
Poses* Correct Correct Correct Min. Operating Voltage Principles Corre Poses Protection(OPP) Dear Voltage Protection(OPP) Dear Voltage Protection(OPP) Dear Voltage Protection(OPP) Dear Voltage Protection(OPP) Correction Correct Mode Stage Of Correct Mode Stage Operating Protection(OPP) Description Correct Mode Stage Operating Protection(OPP) Description Correct Mode Stage Operating O	0 - 49W 0 - 400A	0 - slott max."	0-599	0 = 7.5kW max."	0 - 68W 0 - 600A	0 = 900 max."	
urrent okage	0 - 400A 0 -	0 ~ 600A mas." 150V g-400A	0 - 500A 0 -	0 - 750A max." 150V 8-500A	0 - 600A 0 -	0 - 900A max." 150V 9600A	
fin. Operating Voltage rotections	0.79	g-XXA	0.7%	p 500A	0.74	3400A	
tver Power Protection(OPP) tver Current Protection(OCP			11	9% 9%			
her Voltage Protection(OVP)			10				
orestant Current Mode	C - 40A	0 - 400A	0 - 55A	0 - 500A	T & 601	0 - 669A	
	0.64mA	6.49A		8 OmA etting + Range)	0 - 60A 0.96mA	9.6mA	
couracy creatant Resistance Mode		2 1000000000000000000000000000000000000					
enge restricion correct restant Veltage Mode	22,5k0 = 0,3750 44u5	63750 = 6.00180 625 ₉ 0 ± (0.2%(Vin / Setting) + 0.5% (U.S.)*5	1840 = 0.30 56x5	0.30 = 0.00150 5gfl ±:(0.2%(Vin / Setting) + 0.5% IF.S.)**	1360 = 0.210 67 ₂ S ± (0.2%(Ver / Setting) = 0.1% (F.S.)	0.25Q = 0.0012Q 4.167µQ	
curscy restant Voltage Mode	±(0.1%(Vin / Setting) = 0.1% (F.S.)	± (0.2%(Vin / Setting) + 0.5% IF.S.Y ⁶			±(0.2%(Vin / Setting) + 0.1% IF.S.)	± (0.2%(Vin / Setting) + 0.5% If.S.	
inge			0-	150v			
inge esslution contact restant Power Mode			x 6.00% of 5	(erry etting + Range)			
inge isolution	0 - 400W 6.4mW	600 - 669 64e/F	0 – 500W 8m/V	500 - SkW 80mW	0 - 600W 9.6mW	600 - 6VW 96mW	
solution country		StriW	+ 0.2% of (5	RomW etting + Rangej	9.6mW	96mW	
corace sestant Voltage Mode + Current Limit Mi sage sestation		400A	1509	500A	150V	600A	
	2.5mV ± 0.05% of (Setting + Range)	6.4 vA s 1.0% of (Setting + Range)	150V 2.5mV s 0.05% of (letting = Range)	BrsA a 1.0% of (Setting + Range)	2 SerV ± 0.05% of (Setting + Range)	9.6vsA s 1.0% of (Setting + Range)	
CATRON entant Voltage Mode + Fower Limit Mod	150V	40	1600	SVW	150V	69	
nge solution	2.5+V	64mW	2.5mV	MmW	2.5mV	96mW	
rho Mode " ort / OCP / OPP Test Function	a 0.05% of (Setting + Range) OFF	s 1.0% of Getting + Fange) ON	a 0.05% of (Setting + Range) OFF	s 1,0% of (Setting + Range) ON	a 0.05% of (Setting + Range) OFF	a 1,0% of (Setting + Range) ON	
ert / OCP / OPP Test Function sx. Current sx. Power	400A	600A	500A	756A	600A	900A 9000W	
ax. Power at Accuracy ¹⁰	4000W	6000W	5000W ± 1.0% of (Re		6000W		
ort Time	100 - 10000ms Continuous	100 - 2000ms	100 – 10000ms Continuous	100 - 2000ms	100 - 10000ms Continuous	100 - 2000ms	
tting, Accuracy next V Hi			Setting range - 0.00y - 19	(etc) (EOV / Benediction : 0.0025V			
sort V FE sort V Le CP Time (Tstep) etting, Accuracy	100ms	20ms	Setting range : 0.00V - 150 Setting range : 0.00V - 150 100ms	(80V / Resolution : 0.0025V (80V / Resolution : 0.0025V (80V / Resolution : 0.0025V (80V)	100ms	20ms	
CP ISTAR / ISTEP / ISTOP	Setting range : 0:00A - 400,00A / Resolution : 6.4mA	Setting range: 0.00A - 600.00A / Resolution: 9.6mA	Setting range : 0.00A - 500.00A / Resolution : 8.0mA	Setting range: 0:00A - 790:00A / Resolution: 12mA 100V / Resolution: 0:0025 V	Setting range : 0:00A - 600:00A / Resolution : 9:00mA	Setting range: 0.00A - 900:00A / Resolution: 14.4mA	
CP VTHI PP Time (Tatep) Elling, According PP PSTAR / PSTEP / PSTOP	100ms	20ms	Resolution : 8.0mA Setting range : 0.00V - 150 100ms	.00V / Resolution : 0.0025 V 20ms	100ms	20ms	
tting, Accuracy	Setting range: 0.00W - 4000.0W /	Setting range : 0.00W - 6000.0W /	Setting range : 0.00W - 5000.0W /	Transport AMM NAME (Setting range : 0.00W - 6000.0W / Execution : 96mW	L. Sattler cores - A PORT - NOVA PORT /	
PP PSTAR / PSTEP / PSTOP	Resolution : 64.0mW	Resolution : 96.0mW	Resolution : NI On W	Setting range : 0.00W - 7500.0W j Resolution : 120mW 100V / Resolution : 0.0025V	Resolution : 96mW	Setting range : 0.00W - 9000.0W / Resolution : 144mW	
MS Test Mode ² 7							
ios, Current ios, Accuracy ¹⁶	400A	600A	300A a3.0% of (Re 3.05ms-10ms.)	756A ading + Range)	E 600A	900A	
PP YTH PSTOP PSTOP BY YTH MS Feet Mode*) an, Current sea, Accessor ord seal Time sea, Accessor seat (FEE) seat (FEE) seat (FEE) seat (FEE) seat (FEE) seat (FEE)			0.05ms-10ms / I	Resolution : 0.07ms			
eting Accuracy	Setting range : 0.19A - 200.00A /	Setting range : 0.28A - 300.00A /	60. Setting range : 0.24A + 250.00A /	Sens T. Satting canno : 0 MA - 175 MA /	Setting range : 0.28A - 300.00A /	Carting canno : 0.454 - 450.004 /	
hetITH	Resolution : 6.4mA	Resolution : 9.6mA Setting range : 0.96A - 600.00A / Resolution : 9.6mA	Resolution : 8.0mA	Setting range : 0.16A - 375.00A / Resolution : 12mA Setting range : 1.20A - 750.00A / Resolution : 12mA	Resolution : 9.6mA	Setting range: 0.43A - 450.00A / Resolution: 14.4mA Setting range: 1.44A - 900.00A / Resolution: 14.4mA	
CP ISTAR	Resolution : 6.4mA	Resolution: 9.6mA	Resolution : 8.0mA	Resolution : 12mA	Resolution : 9,6mA	Resolution : 14.4mA	
CP TSTEP	0.05 - 10ms 11 - 1000ms	0.05 - 10ws	0.05 ~ 10ms 11 ~ 1000ms		0:05 - 10ms 11 - 1000ms		
O ISTAR OF TSTEP INN. ACCURACY OF ISTEP	a0.1ms / a0.5ms Setting range : 0.00A - 400.00A /	u0.5ms Setting range : 6.00A - 600.00A /	a0.1ms / a0.5ms Setting range : 0.00A - 500.00A /	40.5ms Setting range : 7.50A - 750.00A /	u0.1ms / u0.5ms Setting range : 0.00A - 600.00A /	u0.5ms Setting range : 9.00A - 900.00A /	
O'STIP	Resolution : 6.4mA	Resolution : 9.6mA	Resolution : 8.0mA	Resolution : 12mA	Resolution : 9.6mA	Resolution : 14.4mA	
CP ISTOP	Resolution : 6.4mA	Resolution : 9.6mA	Resolution : 8.0mA	Resolution : 12mA	Resolution : 9.6mA	Resolution : 14.4mA	
CP ITH	Setting range 0.1 M - 200 (05A Resolution 6.44A - 460 (05A Setting range 0.64A - 460 (05A Resolution 6.44A - 460 (05A 0.65 - 10m 11 - 100ms 6.44A - 460 (05A Resolution 6.44A - 460 (05A	Setting range: 6,004 - 600,004 / Basolution: 9,6mA Setting range: 0,964 - 600,004 / Basolution: 9,6mA Setting range: 0,294 - 300,004 / Basolution: 9,6mA	Setting range: 0.344 - 25000A; Rescholors: 6.0946 Setting range: 0.004 - 50000A; Rescholors: 1.0046 0.31 - 1000es 0.31 - 1000es 0.01 -	40.5 ms 40.5 ms Setting range (7.50A - 750.00A) Favolution (12 mA Setting range (1.20A - 750.00A) Favolution (12 mA Setting range (0.37A - 375.00A) Resolution (12 mA	Setting ranger (3.284 - 160.006/) Resolution (9.6m4 - 160.006/) Setting ranger (3.564 - 600.006/) Setting ranger (3.564 - 600.006/) Setting ranger (3.564 - 600.006/) Setting ranger (3.064 - 600.006/) Setting ranger (3.064 - 600.006/) Setting ranger (3.564 - 600.006/) Resolution (3.6m4 - 600.006/)	setting range: 9.00A - 900.00A / Brookston: 14.6mA Setting range: 1.44A - 900.00A / Resolution: 14.6mA Setting range: 1.44A - 900.00A / Resolution: 14.6mA Setting range: 0.44A - 450.00A / Brookston: 14.4mA	
rge Test Mode rge Current		600A	0-	750A 375A		900A	
ormal Current urge Time		300A 2000ms	0 10	171A 800ms -5		450A 000ms	
gry Test Middle orgo Caranta arranal Caranta a		~5				~5	
ode CC	Setting range: 0.05A - 40	00.00A / Resolution : 6.4mA 00.0W / Resolution : 64.0mW	Setting range: 0.00A - 50	0.00A / Resolution : 8.0mA 0.00A / Resolution : 80.5mW 1,00V / Resolution : 0.0025V 9999994 Resolution : 1s 999994 Resolution : 0.1AH 999994 Resolution : 0.1MH	Setting range: 0.00A - 600	0.00A / Resolution : 9.6mA 00.0W / Resolution : 56mW	
TOP Vultage (UVP)	Second range (Look - 40)	ALOW / RESOLUTION : \$4,000W	Setting range: 0.00V - 150	LOOV / Resolution : 0.0025V	Setting range: 0.00w - 600	UU.UW / RESOUDON: 99/1W	
IOP TIME IOP CAPAH			Setting range : OFF 1 - Setting range : OFF 0.1 - 1	99999s / Resolution : Ts 9999AH / Resolution : 0.1 AH			
			Setting range : OFF 0.1 + 1	1999WH / Resolution : 0.1WH			
ad mode			25 - 1000 ps / 2 - 6 10 ps /	/OP - 16			
ming			29 - 1000 yrs / 2 - 6	533ms / 66 – 999sec			
and mode string STEP ming sesturion mannic Mode ming							
			0.010-9.999 / 99.1	9 / 999.9 / 9999ens 1 / 0.1 / 1 tres 10 / 1 hp = 10ggens 0 1000-20000A / ys 0 000A / ys (bgccsi) otting (a10 ys			
resolution reserver	0.000000		0.001 / 0.0 1 pp / 10 pp / 100	1 / 0,1 / Ires I po / Ires = \$0ppm		ys	
ew Rate	0.0256-1.600A / ps 0.0064A / ps	0.2560-16.000A / pn 0.064A / pn	0.0320-2.000A / ym	0.3200-20.000A / pm	0.0084-2.406A / ps 0.0096A / ps	0.1840-24.000A / pn 0.096A / pn	
r, Rise Time			25 ps	(typical)			
ment			4[39-9/3				
spalution Conteg or Rate spalution S	0 ~ 40A 0.64mA	40 - 400A 6.4±A	0 – 56A 0.8+A	10 - 500A ErsA	0 = 60A 0.26mA	60 - 600A 3.6mA	
oof Key Parameter Son Voltage			Setting range: 0.35V - 6	2.50V / Resolution : 0.25V			
OoFF Voltage verage Time			Setting range: 0.000V - 62	2.50V / Resolution : 0.25V 259V / Resolution : 0.00(5V - 64 Fastert)			
On Voltage Soff Voltage erage Time # Res. Speed essurement					V/70010		
Rage Read Back Range (5 Digital)	0 - 15V 0.25eV	15 - 150V 2.5mV	0 - 15V 0.25mV	15 – 150V 2.5mV	0 - 13V 0.25eV	15 - 150V 2.5mV	
Accurac							
ursert Read Back Range (5 Digital) Resolution	0 - 45A 0.64mA	40 - 400A 6.41A	0 – 55A 0.8×A	leading + Kanger) 50 – 500A Brok	0 - 60A 0.76mA	60 - 600A 9.67A	
Accurac ower Read Back Range (5 Digital) Excelution		W.	4 0.05% of (R	Ersk rading + Range) iov Tru		ew .	
Resolution Accuracy			4 0.00% of (R	STW rading + Kange)			
Accoracy spical Short Resistance solimum Short Current and ON Voltage and OFF Voltage		8-0) 00A	T 1	(m)	1.2	indi MA	
aximum Short Current	- 1	00A	3	96A	0	8A	
ad OFF Voltage			11.5 5 0.25 - 0.25 - 1004sc - 2404sc , 47Hz	2.8V			
and OH Voltage and OFF Voltage oput Range & Power Consumption innession(H x W x D) regist emperation ¹ efety & CMC		***					
Avigne.		Ng	0-	. Ng 40°C	32	Sig	

The state of the proper rating specifications at embert temperature at 27°C.

184 - 11 The power rating specifications at embert temperature at 27°C.

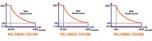
184 - 11 The specification of the properties of the properties of the power at 28°C.

184 - 11 The state of the power at 28°C.

184 - 11 The state of the properties of the properties of the properties of the power at 28°C.

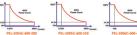
184 - 11 The temperature at 28°C.

185 - 11 The temperature a



SPECIFICATIONS						
MODEL		G-600-280	PEL-50050		PEL-5006C	0-500-420
owdr ⁴ urvend	0 - 45W 0 - 280A 0 -	0 - 620A max."	0 – 54W 0 – 330A	0 - 7.5VW max." 0 - 525A max."	0 - 420A	0 - 635A max."
eventhinge in Operating Yellage in Operating Yellag	100	136A	1800	5155A	1000	F426A
er Power Protection(OPP)			10	5%		
er Voltage Protection(OVP)			907	5%		
notant Current Mode	1 0.99	T A. 1854			0.474	D 0-4994
solution	0 – 28A 0.448mA	0 - 285A 4.45mA	0 - 35A 0.56mA	0 – 350A 3.6mA Hing + Rangel	0 – 42A 0.672mA	0 - 420A 6.72mA
nstant Resistance Mode	1286190 - 2,14350	2.14350 - 0.00330	162880 - 1,71490	1,7140 - 002850	857400 ~ 1.42900	1,42900 - 0,02380
nge solution		± (0.2%(Vin / Setting) + 0.5% IES.)				
notion! Voltage Mode	T AND DESCRIPTION OF THE PARTY	1 Albanter January - Control	6		L ANGESTELL PRINTER TO LOUIS AL	L DANGER J Married + 0.750.
ige solution			10 ± 0.05% of Si			
nstant Power Mode	0 - 400W	400 - 46W 64mW	0-500W 8xW		0.400W	600-64W
nge solution pursor	0 = 400W 6.6mW	64mW	8 mW = 0.1% of (Se	500-5kW 80wW tling = Range)	0.600W 9.6mW	600-6kW 96erW
notant Voltage Mode + Current Limit I	600V	285A	600V	355A	6007	420A
nge solution		4.45 v.A ± 1.0% of (Setting = Range)	10m/v s 0.05% of (Setting + Range)	5.6 mA ± 1.0% of (Setting + Range)	10mV + 0.05% of (Setting + Range)	6.72mA ± 1.0% of (Setting + Range)
oracy natant Voltage Mode + Power Limit M	630V 10mV	4VW 64mV	600V 10mV	SAW Block	600V 10mV	6V0 96mW
ge obtion						
or Mode " et / OCP / OPP Test Function	A 0.05% of (Setting + Range) OFF	a 1.0% of Getting = Range) ON	a 0.05% of (Setting - Range) OFF	ON	a 9.05% of (Setting + Range) OFF	ON
, Power	28GA 4000W	420A 6000W	355A 5000W	535A 7500W	420A 6000W	630A 9000W
LAccuracy ⁴ of Time	100 - 10000ms	100 - 2000ms	± 1.0% of (Re. 100 – 10000ms	oling + Europe) 100 - 2000ms	100 – 10000ma	100 ~ 2000ms
ting, Accuracy	Continuous	IW-AWES	Continuous		Continuous	IW- Awards
ting, Accuracy set V Hi set V Lo P Time (Tytep)		2	Setting range: 0.00V - 60 Setting range: 0.00V - 60	0.00V / Resolution : 0.01V 0.00V / Resolution : 0.01V	V 00000	A
P Time (Tylep) ting, Accuracy	100ms	20ms	100ms	23ms	100ms	20ms
P ISTAR / ISTEP / ISTOP	Setting range : 0.00A - 290.00A / Resolution : 4.48mA	Setting range : 0.05A - 439.05A / Resolution : 6.72mA	Setting range : 0:00A - 350,00A / Resolution : 5.6mA	Setting range : 0.00A - 525.00A / Resolution : 8.4mA	Setting range: 0.00A - 425:00A / Resolution: 6.72mA	Setting range : 0.00A - 633.00A Resolution : 10.08mA
P VTH P Time(Tstep) ting, Accuracy	100ms	20ms	Setting range : 0.00V - 60 100ms	23ms	100ms	20ms
ting, Accuracy P PSTAR / PSTEP / PSTOP	Setting range : 0.00W - 4000.0W /	Setting range : 0.00W - 6000.0W /	5000.0W / Setting range : 0.00W - 5000.0W /	Setting range : C:00W - 7500:0W /	Setting runge : 0.00W - 6000.0W /	Setting range : 0:00W - 9000.0W
9 VTH IS Test Mode*7	Resolution : 64.0mW	Resolution ; 96.0mW	Resolution : 80.0mW Setting range : 0.00V - 60	Setting range : 0:00W - 7500:0W / Resolution 120m/W 0:00V / Resolution : 0:01V	Resolution : 96mW	Resolution : 144mW
S Test Mode*7 x. Current		T 425A	J 355A	525A	435A	630A
ox. Current ren. Accuracy ¹⁰ ort test Time			355A a3.0% of (Res 0.55ms-10ms / R	ding + Range) esolution : 0.01/ms		
ses. Accuracy ting Accuracy	NAME OF THE PROPERTY OF THE PARTY.					Tartoria Sangara
HTI no	Setting range: 0.13A - 142.00A / Resolution: 4.48mA	Setting range : 0.26A - 210.06A / Resolution : 6.72mA	Setting range : 0.16A - 175.00A / Resolution : 5.6mA	Setting range: 0.25A - 262.50A / Resolution: 8.6mA Setting range: 0.84A - 525.00A /	Setting range : 0.20A - 210.00A / Resolution : 6.72mA	Setting range : 0.36A - 315.0 A Resolution : 10.08mA
PISTAR	Setting range (0.134 - 141304) Setting range (0.445 - 282304) Resolution (4.48mA) 0.05 - 10ms	Resolution (6.72 mA Setting range (0.61A - 420.00A) Resolution (6.72 mA	Brookstion : 5.6mA Setting range : 0.56A - 350.05A / Brookstion : 5.6mA 0.25 - 10ms	Setting range : 0.84A - 525.00A / Resolution : 8.4mA	Resolution : 6.72mA Setting range : 0.67A - 420.00A / Resolution : 6.72mA	Resolution : 10.08mA Setting range : 1.00A - 430.00 Resolution : 10.08mA
P TSTEP	0.05 – 10ms 11 – 1000ms	0.05 - 10ms		0.05 - 10ms	11 - 1000ms	0.05 ~ 10ms
us. Accuracy CP ISTEP	±0.1/ms / ±0.5/ms Setting range : 0.00A - 283.00A /	±0.5ms Setting range : 4.20A - 430.00A /	g0.1ms / g0.5ms Setting range : 0.00A - 350.00A /	g0.5ms Setting range : 5.25A + 525.00A /	±0.1ms / ±0.5ms Setting range : 0.00A - 420.00A /	s0.5ms Setting range : 6.30A + 630.00
e istoe	Resolution : 4.48mA Setting range : 0.44A - 280.00A /	Resolution : 6.72mA Setting range : 0.6TA - 430.00A /	Resolution ; 5.6mA Setting range : 0.56A - 350,00A /	Resolution : 8.4mA Setting range : 0.84A - 525.00A /	Resolution : 6.72mA Setting range : 0.67A - 420.00A /	Resolution : 10:06mA
PIN	0.05 = 10ms 11 = 1000ms 30.1ms / 105.1ms sit 0.1ms / 105.1ms Setting range (±.004 - 283.004 / Bissulution (±.48mA - 283.004 / Binsulution (±.48mA - 283.004 / Binsulution (±.48mA - 183.004 /	Brookston: 6.72mA Setting range: 0.618 - 620.008 / Brookston: 6.72mA Setting range: 0.288 - 270.008 / Brookston: 6.72mA	Resolution: 3.5mA Setting range: 0.56A - 350.00A / Resolution: 5.5mA Setting range: 0.17A - 175.00A / Resolution: 5.6mA	Resolution: 8.4mA Setting range: 0.84A - \$25.00A / Resolution: 8.4mA Setting range: 0.26A - 262.50A / Resolution: 8.4mA	Besolution: 6-72/nA Setting range: 0.67A - 620.00A / Resolution: 6-72/nA Setting range: 0.20A - 710.00A / Besolution: 6-72/nA	Resolution : 10.08mA Setting range : 0.30A - 315.00 Resolution : 10.08mA
rge Test Mode	Resolution : 4.48mA					
rge Current ernal Current rge Time	0-	426A 216A 800ms	0-2	535A 62.5A 000ms	0-	635A 315A 000ms
rge Time rge Step	10-:	5000ms - 5			10-2	000ms - 5
If teel Mode sele CC	Setting range : 0.00A - 28	DDA / Resolution : 4.45mA DDW / Resolution : 64.5mW	Setting range (0.00k+)55 Setting range (0.00k+)50 Setting range (0.00k+)600 Setting range (0.0F+) Setting range (0FF-0.1-)1 Setting range (0FF-0.1-)1	100A / Resolution : S.SrvA	Setting range 0.00A - 420	IOSA / Resolution 6.72mA 30.0W / Resolution 96mW
gg Step gg Step gg Step H teef Mode ele CC ole CP OF Voltage (UVF) OF Voltage (UVF)	Setting range: 0.00W - 400	ISDN / Resolution : 64.5mW	Setting range: 0.00W - 500 Setting range: 0.00V - 60	DOV / Resolution 85 Smile DOV / Resolution 0.01V	Setting range: 0.00% - 60	30.00 / Resolution : Mer/W
OP TIME OP CAP.WH			Setting range : OFF 0.1 - 11	99999s / Resolution : 1s P993AH / Resolution : E.TAH		
Q Lead Mode (remode only)			Setting range: CHF 0.1 + 79	999WH / Kessusson : S./WH		
OP CAP, WHI Q Lasel Mode (namode celly) ed Mode tring STEP ming solution			20 - 1000 as / 2 - 63	7 CP - TE		
nong solution marrie Mode			20 - 1000 ga / 2- 93 10 ga / 1	ms / Tsec		
nanc Moos ning gh & Tiper			223 230 100	A 1808 S 1800S		
			0.001 / 0.00 0.001 / 0.01 1 ys / 105 / 105 / 105 0.0024-1.405 / 105 0.0056A / ys	/01/106		
oursey w Rate	0.01792-1.126A / µs 0.00448A / µs	0.1792-11.200A / µs 0.0448A / µs	0.0224-1.400A / ps	0.2240-14.00A / ys	0.02588-1.680A / ys 6.00672A / us	0.2688-16.800A / ys 0.0672A / ys
solution n. Rise Time curacy			25 ps; +(5% of Se	hypical) Ting (=10 us		200100 300
red RP	0.284	T 95-1904			0.04	0.00
Olyton Ten Brown der	0 – 28A 0.45mA	28 - 280A 4.48mA	0 - 35A 0.56mA	35 - 356A 3.6mA	0 – 42A 0.63mA	42 – 425A 6.72mA
off Voltage			Setting range: 0.49 - 1 Setting range: 0.000 - 3 0- 1 - 4.6	90.0V / Resolution : 0.4V 9.60V / Resolution : 0.0VV		
rage Time Res. Speed			0-	G4 Faster()		
age Frad Buck Fange (5 Digital)	0 - 60V 1,00mV	60-600V 12-0vV			0 - 60V 1,00mV	60 - 600V 10:0mV
			0 ~ 60V 1.60mV a 0.035% of pt	60 – 600V 10.0mV rading + Rangel		
Accuracy rent Read Back Sange (5 Digital) Resolution	0 – 28A 0.448mA	28 - 280A 4.48wA	0 - 35A	35 - 336A	0 = 42A 0.672mA	42 - 435A 6.72mA
Accuracy wer Read Back Range (5 Digital)		20	1 5055C of (66	ading + Kange) W	6	
			± 0.50% of (%)	OW ading + Fange)		
neral pical Short Resistance	В:	PS-vill BDA			23.3	Ond
sireum Short Current of ON Voltage	2	IOX .	0.4	56 T00V F50V GSP(5) (590/A)(max.) mm x 745 mm	4	884
of OFF Voltage and Earner & Pleaser Consumeration			0 - 1 100Vac - 240Vac , 47Hz	9.6V - 63Hz ; 550VA(max.)		
ACCHECY ** seral coal Short Emistance consum Short Connect d CNV Voltage d CNV Voltage voltage of Short Consumption enological t at v a D) glet special Consumption enological t at v a D)		2.5kg		Yeg		i)kg





Note 1: 1 The power variety specifications at an ideas the respective 2°L°C.

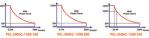
Note 2°L The regist is measurability for forcing to segal of early n°C. Cross doors in 0.1% E.S.

Note 3°L The regist is measurability for forcing to segal of early n°C. Cross doors in 0.1% E.S.

Note 3°L There regist investigate is negatification in valid only for the model PEL-60XCC with isoleting compared to the control of the c

SPECIFICATIONS							
MODEL		G-1200-160	PEL-50050	G-1200-200	PEL-5006G-1200-240		
(vote) votes v	0 - 46W 0 - 160A	0 - 64W max." 0 - 240A max."	0 - 306A	0 - 7.56W max." 0 - 300A max."	0 - 6kW 0 - 246A	0 - 919 max." 0 - 360A max."	
Ain, Operating Vultage	15V@	TEGA		E200A	1500	0.240A	
Over Power Protection(OPP)			10	es:			
Over Voltage Protection(OVP)			10	27%			
Constant Current Mode	0-16A	0 ~ 160A	0 - 25A			F 500	
lesolution	0.256mA	2.56nA		0 – 200A 3.2 n A letting + Eange)	0 = 24A 0.384=A	0 ~ 24GA 3.84mA	
ccuracy onstant Resistance Mode					10000000		
ange ecolution	450kg - 7.50 22 yS ± (0.196(Vin / Setting) + 0.196 IF.S.)	7.50 - 0.00330 125 ₆ 0 ±(0.2%(Vm / Setting) + 0.5% (F.S.)	3696 - 60 2.8 pS ± (0.1% (Vin / Setting) + 0.1% IE.S.)	60 - 0.0750 190yd ± (0.2%(Vin / Setting) + 0.5% (F.S.)	300iO - 50 33 pS ± 83.2% Nm / Settings + 0.1% IF.S.3	\$0 - 0.06250 83.34 ₆ 0 ± (0.2%(Vin / Setting) + 0.5% IF.	
onstant Voltage Mode	_ = (0.154/vin / Setting) + 0.156 (r.S.)	±(0.254(viii.) 5803(g) + 0.556 (r.5.)	1 = (0.75 (vin / String) + 0.75 (r.5.)		± (1.25(vin / Setting) + 0.1% if S.)	2 (0.2%(Vin / Sitting) + 0.3% (r.	
ange molution							
curacy sentant Power Mode large seolution				eting = Earge)			
ange esolution	0 - 400W 6.4mW	600 - 41/9' 64m/9'	0-500W SerW	500-SkW 80erW	0-400W 9.6mW	600-68W 96mW	
coursey"	lode		a 0.2% of (Se				
onstant Votage Mode + Current Limit Is ange esolution	1200V	160A 2.56mA ± 1.0% of (Setting + Range)	1300V 30mV ± 0.05% of (Setting + Range)	200A 3. 2mA a 1.0% of (Setting + Range)	1200V 20mV	240A 3.84mA	
postant Voltage Mode + Power Limit Mo	a 0.05% of (Setting + Range)	a 1.0% of (Setting + Range)			a 0.05% of (Setting + Range)	a 1.5% of (Setting + Range)	
irge isolution	1200V	45/8/ 64+/W	1300V 20mV	SAW SOWW	1200V 20xxV	SCV World	
toracy T	± 0.05% of (Setting + Range)	a 1.0% of (Setting = Range) ON	s 0.05% of (Setting = Range)	s 1.0% of (Setting + Range) ON	g 0.05% of (Setting + Range)	96,447 96,447 a 1.0% of (Setting + Range) ON	
ofto Mode " nent / OCP / OPP Test Function	16%	3454	1 994	1 1004	1 100	1604	
ax. Current ax. Power	4500W	6000W	5000W	7900W rading + Kanzel	6000W	9000W	
net Accuracy **	100 – 10000ms Continuoso	100 ~ 2000ms	a 1.0% of (Res	rading + Range) 100 - 2000ms	100 - 10000ms Continuous	100 - 2000ms	
	Continuous		Continuous ±5		Continuous		
otting, Accuracy nost V Hi nost V Le			Setting range: 0.25V - 12 Setting range: 0.000V - 12	500.0V / Resolution : 0.02V 200.0V / Resolution : 0.02V			
CP Time(Tstep) ttling, Accuracy	100ms		100ms	70%	100ms	20ms	
CP ISTAR / ISTEP / ISTOP	Setting range 0.00A - 160,00A / Resolution : 2.56mA	Setting range : 0.00A - 240,00A / Resolution : 3,84mA	Setting range : 0.00A - 200,00A / Resolution : 3.2mA	Setting range 0.00A - 300.00A / Resolution : 4.8mA	Setting range : 0.00A - 240.00A / Resolution : 3.84mA	Setting range : 0.00A - 360.00A ; Resolution : 5.76mA	
CP VTH PP Time(Tstep) Oling, Accuracy	160ms	20ms	Randution : 3.2mA Setting range : 0.00V - 120 100ms	Resolution : 4.8mA 90.80V / Resolution : 6.52V 20ms	100ms	20ms	
etting Accuracy	Setting range : 0:00W - 4000.DW /	Setting range : 0.00W - 6000.0W /	45 Setting range : 0.00W - 5000.0W /		Setting range : 0.00W - 6000.0W /	Setting range : 6.00W - 9000.0W	
PP PSTAR / PSTEP / PSTOP	Resolution : 64.0n/W	Resolution : 96.0mW	Firesolution : 80.0mW Setting range : 0.00V - 120	Setting range : 0.00W - 7500.0W / Resolution : 120mW 00.00V / Resolution : 0:02V	Resolution : 96wW	Resolution : 144mW	
PP VTH MS Test Mode*7 les. Current							
less, Current less, Accuracy ¹⁹ nort test Time	160A	240A	200A a3.0% of (Res 0.05ems-10ms / R	300A ading = Range)	240A	310A	
ort test Time ras. Accuracy			0.05ms-10ms / R ±0.0	esolution : 0.01ms 33ms			
iss. Accuracy itting Accuracy for ITH	Setting range : 0.07A - 80.00A /	Setting range : 0.11A - 120.00A /	60.0 Setting range : 0.05A - 100.00A /	05ms Setting range : 0.14A + 150:00A /	Setting range : 0.11A - 120.00A /	Setting range : 0.17A - 180.00A.)	
	Ferning Lange (1.00 to 30.00 tr) Ferning Congress (1.56 to 160.00 tr) Ferning Congress (1.55 to 160.00 tr) Ferning Lange (1.55 to 160.00 tr) 11 - 1800ms 40.1ms / 40.5ms Setting range (1.00 to 160.00 tr)	Resolution : 3.84mA Setting range : 0.38A - 240,00A / Resolution : 3.84mA	Resolution: 3.2mA	Resolution : 4.8mA Setting range : 0.48A - 300.00A / Resolution : 4.8mA	Persolution: 1.34mA Setting range: 0.34x-240.004 / Resolution: 3.54mA 0.05 - 50ms 11 - 1000ms 40.1mg / a0.5ms Setting range: 0.004 - 240.004 /	Resolution : 5.76mA Setting range : 0.57A - 360.00A Resolution : 5.76mA	
CP ISTAR	Exolution : 2,56mA	Resolution : 3.84mA	Setting range (0.53A - 200.00A) Resolution () 3.2mA 6.65 - 16ma 11 - 1000ms 40.1ms / 40.5ms Setting range (0.60A - 200.00A)	Resolution : 4.8mA	Resolution: 3.84mA	Resolution : 5.76mA	
ICP TSTEP	11 - 1000ms	0.05 ~ 10ms	11 - 1000ms	0.05 - 10res	11 – 1000ms	0.05 = 10ms	
fess. Accuracy ICP ISTEP	Setting range : 0.00A - 160.00A /	Setting range (2.40A - 740.00A / Resolution (3.84mA Setting range (3.84 - 740.00A / Resolution (3.84mA Setting range (3.84 - 740.00A / Resolution (3.84mA Setting range (3.15A - 720.00A / Resolution (3.84mA	Setting range : 0.00A - 200.00A /	#8 Sms Setting range (1.05A - 100-100A / Resolution (4.8mA Setting range (4.4mA - 100-100A / Resolution (4.8mA Setting range (6.15A - 150.00A / Resolution (4.8mA	Setting range : 0.00A - 242.00A /	s0.5ms Setting range : 3.60A - 360.00A y	
CPISTOP	Setting range: 0.03A - 160.00A / Setting range: 0.35A - 160.00A / Resolution: 2.56mA Setting range: 0.10A - 80.00A / Resolution: 2.56mA	Setting range : 0.38A - 240.00A /	Sensing range (0.00 m) 2 Jan A Sensing range (0.32 A - 200.00 A) Resolution (1.2 Jan A Sensing range (0.13 A - 100.00 A) Resolution (3.2 Jan A - 100.00 A)	Resolution : 4.8mA Setting range : 0.48A - 500:00A /	Resolution: 3.84mA Setting range: 0.38A-245.00A / Resolution: 3.84mA Setting range: 0.38A-120.00A / Ensolution: 3.84mA	Persolution: 5 76mA Setting range: 0.37A - 360.00A; Resolution: 5 76mA Setting range: 0.15A - 180.00A Resolution: 5 76mA	
отн	Resolution : 2.56mA Setting range : 0.10A - 80.00A /	Resolution : 3.84mA Setting range : 0.15A - 120.00A /	Resolution : 3.2mA Setting range : 0.10A - 100.00A /	Resolution : 4.8mA Setting range : 0.15A - 150.00A /	Resolution : 3.84mA Setting range : 0.10A - 120.00A /	Resolution : 5.76mA Setting range : 0.15A - 180.00A	
Ures Test Mode		Resolution : 3,84mA		Resolution : 4.8mA			
urge Test Mode urge Current ormal Current urge Time	0.0	AGA 176A	0-	305A 155A	0-	360A TBOX	
urge Time	10-3	100ms	16-2	500ms	10-1	5000ms	
ett teet Mode			Farra 6700 VD	NO Charles Charles			
rege tree rege Step iff test Mode side CC side CP side CP side CP side CP side CP side CP OP FANA OP FANA SIDE CAN AM SIDE CAN SIDE	Setting range : 0.00A - 16E Setting range : 0.00W - 4000	JDW / Resolution : 64.0m/W	Setting range: 0.004-300 Setting range: 0.000+300 Setting range: 0.000+100 Setting range: 0.000+100 Setting range: 0.000+101-11 Setting range: 0.000+0.1-11 Setting range: 0.000+0.1-11	0.0W / Resolution : 81 GmW	Setting range : 6:00W - 60	0.00A / Resolution : 3.54mA 00.0W / Resolution : Mer/W	
TOP TIME			Setting range OFF 1	99999s / Resolution : 1s			
TOP CAP,WH			Setting range : OFF 0.1 - 19	9999WH / Resolution : 0.1WH			
EQ Lead Mode (remode only)				777			
ed Mode etting STEP ming			20 = 1000 ps / 2 = 63	- 16 5535vs / 66 - 999sec Ins / Tsec			
mamic Mode			10 ps / 1	PHL / TSHC			
ming high & Your			0.010-9.999 / 99.3	99 / 999 3 / 9999+rg			
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urrent argo	0-16	14 - 1694			0-34	D - 1494	
solution of Key Parameter	0 - 16A 0.36mA	16 - 160A 2.56mA	0 - 25A 0.32vsA	29 - 200A 3.2+A	0 – 24A 0.38+vA	42 - 245A 3.84+A	
Jon Voltage			Setting range: TV - 21 Setting range: 0.000V - 2	50.0V / Resolution : TV 149.0V / Resolution : 0.02V - 64			
verage Time			Setting range: 0.000V - 2	045.0V / Resolution : 0.02V - 64 Fastest)			
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diage Read Back Range (5 Digital) Resolution	0 = 120V 2.00mV	120 - 1200v 30.0mV	0 = 120V 2.50mV	139 - 1399V 20.6e/V	0 – 120V 2.00mV	120 - 1200v 20.5e/V	
Accuracy urrent Read Back Fange (5 Digital)	0 – 16A 0.256mA	16 - 160A 2.56mA	0 - 25A	eading + Range) 29 – 200A	0 - 24A 0.384mA	24 - 243A 3.84mA	
			632mA ± 685% of (%)	3.2mA eading = Range)			
Accuracy ower Read Back Range (5 Digital) Baselution	- 6	9			6	kW .	
Accuracy "			* 0.00% of (Re	eading o Range)		V-000	
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taximum Short Current cod ON Voltage cod OFF Voltage sput Range & Power Consumption			100Vac - 240Vac , 47Hz	~ 63Hz ; \$50VA(max.)			
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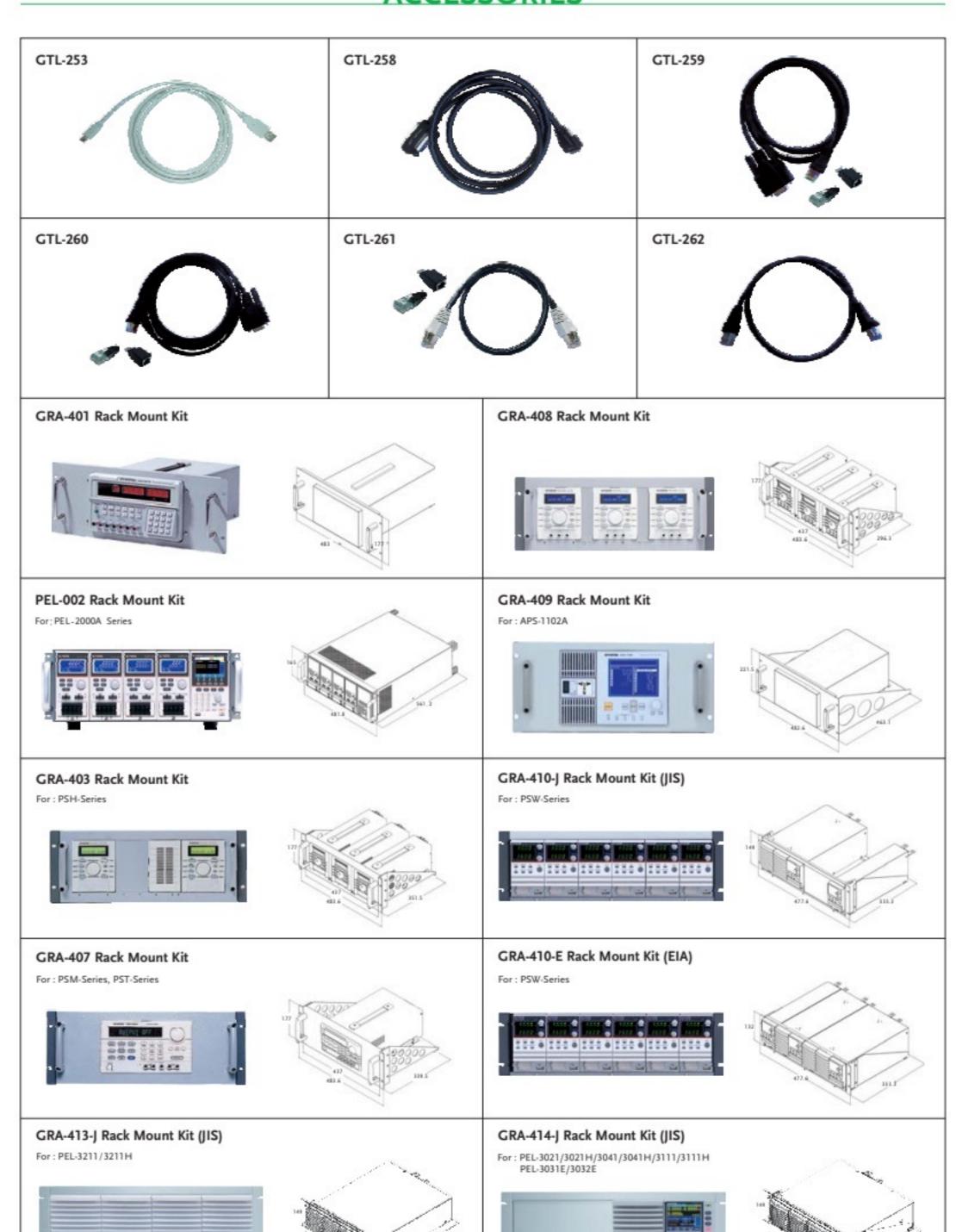


Simply Reliable | Good Will Instrument Co., Ltd.

MODEL	DESCRIPTION	ADDITION DEVICE
APS-001	GPIB Interface Card DESCRIPTION	APPLICABLE DEVICE APS-7000 Series
APS-001 APS-002	RS-232/USB Interface Card	APS-7000 Series APS-7050, APS-7100
APS-003	Output Voltage Capacity (0~600Vrms)	APS-7000 Series
APS-004	Output Frequency Capacity (45–999.9Hz)	APS-7000 Series
APS-007	RS-232 Interface Card	APS-7200, APS-7300
APS-008	Air Inlet Filter	ASR-3000 Series
ASR-001	Air Inlet Filter	ASR-2000 Series
ASR-002	External Three Phase Control Unit	ASR-2000 Series, ASR-3000 Series
GET-001	Extended Terminal with max.30A for 30V/80V/160V models	PSW-Series, PSW-Multi Series
GET-002	Extended Terminal with max.10A for 250V/800V models	PSW-Series, PSW-Multi Series
GET-003	Extended Universal Power Socket	ASR-2000 Series
GET-004	Extended European Power Socket	ASR-2000 Series
GET-005	Extended European Terminal with max.20A for 30V/80V/160V models	PSW-Series, PSW-Multi Series
GPS-001	Knob, Voltage/Current Protection Knob UL/CSA Power Cord, 3000mm	GPS-x303 Series, SPD-3606
GPW-001 GPW-002	VDE Power Cord, 3000mm	PSU-Series PSU-Series
GPW-002 GPW-003	PSE Power Cord, 3000mm	PSU-Series PSU-Series
GPW-005	Power cord, 3m, 105°C, UL/CSA type	ASR-3000 Series
GPW-006	Power cord, 3m, 105°C, VDE type	ASR-3000 Series
GPW-007	Power cord, 3m, 105°C, PSE type	ASR-3000 Series
GRA-401	Rack Mount Kit, 19", 4U Size	GPC-Series, GPR-M Series, PPE-3323, PPS-3635, PPT-Series, PEL-300
GRA-403	Rack Mount Kit, 19", 4U Size	PSH-Series
GRA-407	Rack Mount Kit, 19", 4U Size	PSM-Series
GRA-408	Rack Mount Kit, 19", 4U Size	PSS-Series
GRA-409	Rack Mount Kit, 19", 5U Size	APS-1102A
GRA-410-E	Rack Mount Kit (EIA), 19", 3U Size	PSW-Series, PSW-Multi Series
GRA-410-J	Rack Mount Kitt (JIS), 19", 3U Size	PSW-Series, PSW-Multi Series
GRA-413-E	Rack Mount Kitt (EIA), 19*, 3U Size	PEL-3211/3211H
GRA-413-J	Rack Mount Kitt (JIS), 19", 3U Size	PEL-3211/3211H
GRA-414-E	Rack Mount Kit (EIA), 19", 3U Size	PEL-3021(H)/3041(H)/3111(H), PEL-3000E Series
GRA-414-J GRA-418-E	Rack Mount Kit (JIS), 19", 3U Size Rack Mount Kit (EIA), 19", 3U Size	PEL-3021(H)/3041(H)/3111(H), PEL-3000E Series PSB-1000 Series
GRA-418-E GRA-418-J	Rack Mount Kit (EIA), 19", 30 Size Rack Mount Kit (JIS), 19", 3U Size	PSB-1000 Series PSB-1000 Series
	Rack Mount Kit (EIA), 19", 2U Size	PCS-10001
GRA-419-J	Rack Mount Kit (JIS), 19", 2U Size	PCS-1000I
GRA-423	Rack Mount Kit, 19", 2U Size	APS-7000/7000E Series
GRA-424	Rack Mount Kit, 19", 3U Size	PSB-2000 Series
GRA-428	Rack Mount Kit (EIA), 19", 3U Size	PSP-Series
GRA-429	Rack Mount Kit, 7U Size	APS-7200 Series
GRA-430	Rack Mount Kit, 9U Size	APS-7300 Series
GRA-431-J	Rack Mount Kit (JIS)	PFR-Series
GRA-431-E	Rack Mount Kit (EIA)	PFR-Series
GRA-439-J	Rack Mount Kit (JIS), 19°, 3U Size	ASR-2000 Series
GRA-439-E	Rack Mount Kit(EIA)), 19", 3U Size	ASR-2000 Series
GRA-441-J	Rack Mount Kit (JIS), 19", 3U Size Rack Mount Kit (EIA)), 19", 3U Size	PPX-Series PPX-Series
GRA-441-E GRA-442-J	Rack Mount Kit (JIS), 19", 3U Size	ASR-3000 Series
GRA-442-E	Rack Mount Kit (IIA)), 19", 3U Size	ASR-3000 Series
GRA-449-J	Rack Mount Kit (JIS), 19", 3U Size	GPP-Series, GPP-3060/6030
GRA-449-E	Rack Mount Kit (EIA), 19", 3U Size	GPP-Series, GPP-3060/6030
GRJ-1101	Module Cable (0.5m)	PSB-2000 Series
GRM-001	Slide Bracket 2pcs/set	PSU-Series PSU-Series
GTL-104A	Test Lead, U-type to Alligator Test Lead, Max. Current 10A, 1000mm	PFR/PSM/PSP/PST/GPC/GPD/GPP/GPR/GPS/GPE/PPT-Series, PPS-3635, SPD-3606, PPX-Series,
		GPP-3060/6030
GTL-105A	Test Lead, Alligator to Banana Test Lead, Max. Current 3A, 1000mm	
		PFR/PSS/PST/GPC/GPD/GPP/GPS/PPT-Series, PEL-2000B, PPE-3323, SPD-3606, PCS-1000I,
GTL-117	Test Lead, Banana to Probe Test Lead, 1200mm	PPX-Series
GTL-117 GTL-120	Test Lead, Banana to Probe Test Lead, 1200mm Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm	PPX-Series PPH-1503/1503D/1506D
	Test Lead, Banana to Probe Test Lead, 1200mm Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm	PPX-Series
GTL-120	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series
GTL-120 GTL-121	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series
GTL-120 GTL-121 GTL-122	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V)	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606,
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D,
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Temperature Probe Adapter(Thermal Coupling, K-Type), about 1000mm Test Lead, Banana to Probe Test Lead, 800mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series, GPP-3060/6030
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-204A GTL-204A GTL-205A GTL-207A GTL-218	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Temperature Probe Adapter(Thermal Coupling, K-Type), about 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR-Series PFR-Series PFR-Series PFR-Series PSS-10001, GSM-20H10 PSU/PSW/PEL-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-202 GTL-203A GTL-204A GTL-205A GTL-218 GTL-219	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Adapter(Thermal Coupling, K-Type), about 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/Series PCS-10001, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-205A GTL-205A GTL-207A GTL-219 GTL-219	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/Series PCS-10001, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-204A GTL-205A GTL-207A GTL-218 GTL-219 GTL-220 GTL-220	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Temperature Probe Adapter(Thermal Coupling, K-Type), about 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series, GPP-3060/6030 PPX-Series PCS-1000I, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series PSU/PSW/PEL-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-204A GTL-205A GTL-207A GTL-218 GTL-219 GTL-220 GTL-221 GTL-222	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PCS-1000I, GSM-20H10 PSU/PSW/PEL-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-202 GTL-203A GTL-204A GTL-205A GTL-218 GTL-219 GTL-220 GTL-221 GTL-222 GTL-223	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 400A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 400A, 1500mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PCS-1000I, GSM-20H10 PSU/PSW/PEL-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-202 GTL-203A GTL-204A GTL-205A GTL-219 GTL-219 GTL-220 GTL-221 GTL-222 GTL-223 GTL-223	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG;50A, 600V/sense wire_16AWG;20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PCS-1000I, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PSU-Series, APS-7000 Series, PEL-2000A(B) Series, ASR-2000 Series, ASR-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-203A GTL-204A GTL-205A GTL-205A GTL-218 GTL-219 GTL-220 GTL-221 GTL-222 GTL-223 GTL-223 GTL-232	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFX-Series, GPP-3060/6030 PPX-Series PCS-10001, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PSU-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-204A GTL-205A GTL-205A GTL-218 GTL-218 GTL-220 GTL-221 GTL-221 GTL-222 GTL-223 GTL-232 GTL-232 GTL-234	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PFR-Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PSU-Series PCS-1000I, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PSS-Series, APS-7000 Series, PEL-2000A(B) Series, ASR-2000 Series, ASR-3000 Series PSP-Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-204A GTL-205A GTL-205A GTL-207A GTL-218 GTL-219 GTL-220 GTL-221 GTL-222 GTL-223 GTL-223 GTL-234 GTL-238	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm RS-232C Cable, 9-pin, F-F Type, 1000mm RS-232C Cable, 9-pin, M-F Type, 1000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFX-Series, GPP-3060/6030 PPX-Series PCS-10001, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PSU-3000 Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-204A GTL-205A GTL-205A GTL-218 GTL-218 GTL-220 GTL-221 GTL-221 GTL-222 GTL-223 GTL-232 GTL-232 GTL-234	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 200A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, APS-7000 Series, PSB-1000 Series PFR-Series ASR-3000 Series AFG-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series, GPP-3060/6030 PX-Series, GPP-3060/6030 PX-Series PCS-1000I, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PSS-Series, APS-7000 Series, PEL-2000A(B) Series, ASR-2000 Series, ASR-3000 Series PSP-Series
GTL-120 GTL-121 GTL-122 GTL-123 GTL-130 GTL-134 GTL-137 GTL-201A GTL-201A GTL-203A GTL-203A GTL-205A GTL-205A GTL-219 GTL-219 GTL-220 GTL-221 GTL-222 GTL-223 GTL-223 GTL-223 GTL-232 GTL-238 GTL-238 GTL-238	Test Lead, O-type to O-type Test Lead, Max. 40A, 1200mm Sense Lead, O-type to free Lead, 1200mm Test Lead, U-type to Alligator Test Lead, Max. Current 40A, 1200mm Test Lead, O-type to O-type Test Lead, 1200mm Test Leads: 2 x red, 2 x black, for 250V/800V models, 1200mm Test Leads for Rear Panel, 1200mm, 10A, 16 AWG Output Power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V) Ground Lead, Banana to Banana, European Terminal, 200mm Sense Lead, Banana to Banana Lead, European Terminal, 200mm Test Lead, Banana to Alligator, European Terminal, Max. Current 3A, 1000mm Test Lead, Banana to Alligator, European Terminal, Max. Current 10A, 1000mm Test Lead, Banana to Probe Test Lead, 800mm Test Lead, O-type to O-type Test Lead, 800mm Test Lead, O-type to O-type Test Lead, Max. 200A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 1500mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 300A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm Test Lead, O-type to O-type Test Lead, Max. 400A, 3000mm RS-232C Cable, 9-pin, F-F Type, null modem, 2000mm RS-232C Cable, 9-pin, F-F Type, 1000mm USB Cable, USB 2.0, A-B Type (L Type), 1200mm	PPX-Series PPH-1503/1503D/1506D PEL-3000/3000H Series, PEL-2000A(B) Series PEL-2000A(B) Series PSH-Series, GPR-U Series, GPR-H Series PSW-Series, APS-7000 Series, PSB-1000 Series PSW-Series, PSW-Multi Series PFR-Series ASR-3000 Series AFC-200/100 Series, PSM Series, GPD-Series, GPP-Series, GPS-X303 Series, SPD-3606, PPX-Series, GPP-3060/6030 PSM-Series PSS/PST/GPD/GPP/GPS/SPS-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PFR/PSM/PSP/PSS/GPS/GPE/PPT/PST/GPD/GPP-Series, SPD-3606, PPH-1503/1503D/1506D, PPX-Series PCS-10001, GSM-20H10 PSU/PSW/PEL-3000 Series PSU/PSW/PSS-Series, APS-7000 Series, PEL-2000A(B) Series, ASR-2000 Series, ASR-3000 Series PSH-PSM/PSS-Series, APS-7000 Series, PEL-2000A(B) Series, ASR-2000 Series, ASR-3000 Series PSP-Series

MODEL	DESCRIPTION	APPLICABLE DEVICE
GTL-248	GPIB Cable, Double Shielded, 2000mm	PSB-2000 Series, PPH-1503, PSW/PSW-Multi/PSU/PSH/PSM/PSS/PPT-Series, APS-7000 Series,
	61	PEL-3000/3000H Series, PEL-3000E Series, PEL-2000A(B) Series, ASR-3000 Series, PEL-5000C Series,
CTI 240	France Unit Cable 200	AEL-5000 Series, PEL-5000G Series, GSM-20H10
GTL-249 GTL-250	Frame Link Cable, 300mm GPIB Cable, Double Shielded, 600mm	PEL-2000A(B) Series PSW/PSW-Multi/PSU/PSH-Series, PSB-2000 Series, APS-7000 Series, PEL-5000C Series, AEL-5000 Series
GTL-250	Frame Link Cable, 300mm	PEL-3000/3000H Series
GTL-258	GPIB Cable, 25 pins Micro-D Connector	PFR-Series, PPX-Series, ASR-2000 Series, PSU-Series
GTL-259	RS-232 Cable with DB9 Connector to RJ45	PPX-Series, PFX-Series, PSU-Series
GTL-260	RS-485 Cable with DB9 Connector to RJ45	PPX-Series, PFR-Series, PSU-Series
GTL-261	Serial Master Cable + Terminator, 0.5M	PSU-Series, PFR-Series, PSU-Series, PPX-Series
GTL-262	RS-485 Slave Cable	PPX-Series, PFR-Series, PSU-Series
GUG-001	GPIB-USB Adaptor, GPIB to USB Adaptor	GDS-3000 Series, PSW-Series, PSW-Multi Series
GUR-001A	RS232-USB Cable, 300mm	PSW-Series, PSW-Multi Series
GUR-001B	RS-232 to USB Adapter with #4-40 UNC Rivet Nut	PSW-Multi Series
PCS-001	Basic Accessory Kit	PCS-1000I
PEL-001	GPIB Card	PEL-2000A(B) Series
PEL-002	Rack Mount Kit, PEL-2000 Series Rack Mount Kit	PEL-2000A(B) Series
PEL-003	Panel Cover	PEL-2000A(B) Series
PEL-004	GPIB Card	PEL-3000/3000H Series, PEL-3000E Series
PEL-005	Connect Cu Plate	PEL-3000/3000H Series
PEL-006	Connect Cu Plate	PEL-3000/3000H Series
PEL-007	Connect Cu Plate	PEL-3000/3000H Series
PEL-008	Connect Cu Plate	PEL-3000/3000H Series
PEL-009	Connect Cu Plate	PEL-3000/3000H Series
PEL-010	Dust Filter	PEL-3000/3000H Series, PEL-3000E Series
PEL-011	Load Input Terminal Cover	PEL-3000/3000H Series
PEL-012	Terminal Fittings Kits	PEL-3000/3000H Series
PEL-013	Flexible Terminal Cover	PEL-3000/3000H Series
PEL-014 PEL-016	J1/J2 Protection Plug LAN Card	PEL-3000/3000H Series
PEL-016 PEL-018	LAN Card	PEL-2000A(B) Series PEL-3000/3000H Series, PEL-3000E Series
PEL-018	GPIB Card	PEL-3000/3000H Series, PEL-3000E Series PEL-5000C Series, AEL-5000 Series, PEL-5000G Series
PEL-022 PEL-023	RS-232 Card	PEL-5000C Series, AEL-5000 Series, PEL-5000G Series
PEL-024	LAN Card	PEL-5000C Series, AEL-5000 Series, PEL-5000G Series
PEL-025	USB Card	PEL-5000C Series, AEL-5000 Series, PEL-5000G Series
PEL-026	Hook Ring	PEL-5000C Series
PEL-027-1~4	Rack Mount Kit	PEL-5000C Series
PEL-028	HANDLES, U-shaped Handle(Fixed to the Bracket)	PEL-5000C Series, AEL-5000 Series
PEL-029	HANDLES Rack Accessories (for AEL-5002/5003/5004)	AEL-5000 Series
PEL-030	GPIB+RS-232 Card	PEL-5000C Series, AEL-5000 Series, PEL-5000G Series
PEL-031	Rack Mount Kit	PEL-5000G
PEL-032	9923 Current Waveform Generator + RS232 Interface	PEL-5000G
PPX-G	GPIB Interface(Factory Installed)	PPX-Series
PSB-001	GPIB Card	PSB-2000 Series, PSB-1000 Series
PSB-003	Parallel Connection Kit (for Horizontal Installation), Kit Includes: (PSB-007 Joint Kit, Horizontal	PSB-2000 Series, PSB-1000 Series
	bus bar x 2 , PSB-005 x1)	
PSB-004	Parallel Connection Kit (for Vertical Installation) Kit Includes: (PSB-007 Joint Kit, Verical bus bar	PSB-2000 Series, PSB-1000 Series
PSB-005	x 2, PSB-005 x 1) Parallel Connection Signal Cable	PSB-2000 Series, PSB-1000 Series
PSB-005	Serial Connection Signal Cable	PSB-2000 Series, PSB-1000 Series
PSB-007	Joint Kit: Includes 4 Joining Plates, [M3x6]screws x 4 ; [M3x8]screw x 2	PSB-2000 Series
PSB-008	RS232C Cable (PSB-2000 Only)	PSB-2000 Series
PSB-101	Cable for 2 units of PSB-1000 units in Parallel Mode Connection	PSB-1000 Series
PSB-102	Cable for 3 units of PSB-1000 units in Parallel Mode Connection	PSB-1000 Series
PSB-103	Cable for 4 units of PSB-1000 units in Parallel Mode Connection	PSB-1000 Series
PSB-104	Cable for 2 units of PSB-1000 units in Series Mode Connection	PSB-1000 Series
PSB-105	GPIB Card	PSB-1000 Series
PSB-106	Basic Accessory Kit: M4 Terminal Screws and Washers x 2, M8 Terminal Bolts, Nuts and Washers	PSB-1000 Series
o wymer cocyclos	x 2, Analog Control Protection Dummy x 1, Analog Control Lock Level x 2, Short Bar x 1	
PSU-001	Front Panel Filter kit(Factory Installed)	PSU-Series
PSU-01A	Joins a vertical stack of 2 PSU units together. 2U-sized handles x 2, joining plates x 2	PSU-Series
PSU-01B	Bus Bar for 2 units in parallel operation	PSU-Series
PSU-01C	Cable for 2 units in parallel operation	PSU-Series
PSU-02A	Joins a vertical stack of 3 PSU units Together. 3U-sized Handles x 2, joining plates x 2	PSU-Series
PSU-02B	Bus Bar for 3 units in Parallel Operation	PSU-Series
PSU-02C PSU-03A	Cable for 3 units in Parallel Operation Joins a Vertical Stack of 4 PSU units Together. 4U-sized Handles x 2, joining plates x 2	PSU-Series
PSU-03A PSU-03B	Bus Bar for 4 units in Parallel Operation	PSU-Series PSU-Series
PSU-03E	Cable for 4 units in Parallel Operation	PSU-Series PSU-Series
PSU-232	RS232 Cable with DB9 Connector Kit	PSU-Series PSU-Series, PFR-Series
PSU-485	RS485 Cable with DB9 Connector Kit	PSU-Series, PFR-Series
PSU-GPIB	PSU GPIB Interface Card (Factory Installed)	PSU-Series
PSU-ISO-I	Isolated Current Remote Control Card (Factory Installed)	PSU-Series
PSU-ISO-V	Isolated Voltage Remote Control Card (Factory Installed)	PSU-Series
PSW-001	Accessory Kits	PSW-Series, PSW-Multi Series, PSB-1000 Series
PSW-002	Simple IDC Tool	PSW-Series, PSW-Multi Series, PSB-1000 Series
PSW-003	Contact Removal Tool	PSW-Series, PSW-Multi Series, PSB-1000 Series
PSW-004	Basic Accessory Kit for 30V/80V/160V models	PSW-Series, PSW-Multi Series
PSW-005	Series Operation Cable for 2 units(30V/80V/160V models moly)	PSW-Series
PSW-006	Parallel Operation Cable for 2 units	PSW-Series
PSW-007	Parallel Operation Cable for 3 units	PSW-Series
PSW-008	Basic Accessory Kit for 250V/800V models	PSW-Series
PSW-009	Output Terminal Cover for 30V/80V/160V models	PSW-Series
	[2] T. [1] T. B. (1) C. (2) (1) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	PSW-Series
PSW-010	Large ritter (Type II/III)	
PSW-010 PSW-011	Large Filter (Type II/III) Output Terminal Cover for 250V/800V models	PSW-Series





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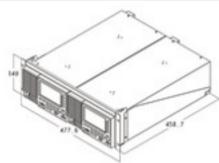
ACCESSORIES

GRA-414-E Rack Mount Kit (EIA) GRA-413-E Rack Mount Kit (EIA) For: PEL-3021/3021H/3041/3041H/3111/3111H PEL-3031E/3032E For: PEL-3211/3211H **GRA-423 Rack Mount Kit** GRA-424 Rack Mount Kit For: APS-7050/7100/7050E/7100E Series For: PSB-2000 Series GRA-418-J Rack Mount Kit (JIS) GRA-419 Rack Mount Kit (JIS) For: PSB-1000 Series For: PCS-10001 GRA-419 EIA Rack Mount Kit GRA-418-E Rack Mount Kit (EIA) For: PSB-1000 Series For: PCS-1000 **80000000 80000000 GRA-424 Rack Mount Kit** GRA-428 Rack Mount Kit (EIA) For: PSB-2000 Series For: PSP-Series GRA-430 Rack Mount Kit For: APS-7300 Series GRA-429 Rack Mount Kit For : APS-7200 S GRA-431-E Rack Mount Kit (EIA) with AC 100V/200V GRA-431-J Rack Mount Kit (JIS) with AC 100V/200V For: PFR-Series For: PFR-Series

GRA-439-J Rack Mount Kit (JIS)

For: ASR-2000 Series

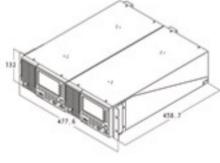




GRA-439-E Rack Mount Kit (EIA)

For: ASR-2000 Series

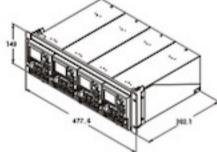




GRA-441-J Rack Mount Kit (JIS)

For: PPX-Series

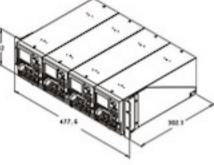




GRA-441-E Rack Mount Kit (EIA)

For: PPX-Series

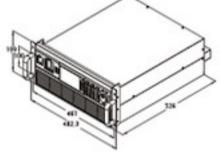




GRA-442-J Rack Mount Kit (JIS)

For: ASR-3000 Seriea

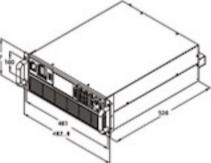




GRA-442-E Rack Mount Kit (EIA)

For: ASR-3000 Series

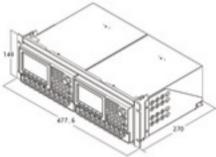




GRA-449-J Rack Mount Kit (JIS)

For: GPP-Series

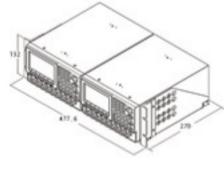




GRA-449-E Rack Mount Kit (EIA)

For: GPP-Series

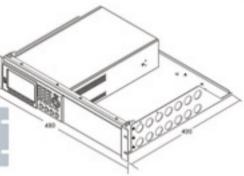




GRA-450-J Rack Mount Kit (JIS)

For: GSM-20H10, PPH-Series

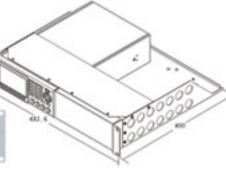




GRA-450-E Rack Mount Kit (EIA)

For: GSM-20H10, PPH-Series







Specifications subject to change without notice.

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