



AEL-5000 Series

AC & DC Electronic Load

FEATURES

- CC, Linear CC, CR, CV, CP and AC Rectifier Load Mode
- Frequency Range : DC, 40~440Hz
- Turbo Mode for 2 Times the Current and Power of Electronic Load within 1 Second
- Three Units Parallel up to 90kW and Three-phase Δ or Y Load Connection Can be Synchronized Control by One Master Unit
- Loading and Unloading Angle Control; 0~359 Degree is Settable
- Positive Half-cycle or Negative Half-cycle Loading
- Supports SCR/TRIAC Current Phase Modulation Waveforms, 90 Degree Trailing Edge and Leading Edge
- Optional Interface : GPIB 、 RS232 、 USB 、 LAN

GW INSTEK
Simply Reliable

AC & DC Electronic Load

AEL-5000 Series



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-5003-350-28 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-5004-350-37.5 AEL-5006-425-56
 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	Power (W)		Current(Ampere)		Voltage(Volt)
	Turbo OFF	Turbo ON	Turbo OFF	Turbo ON	
AEL-5002-350-18.75	1875 W	3750W (x2)*	18.75 Arms / 56.25Apeak	37.5Arms/56.25Apeak (x2)*	50~350Vrms / 500Vdc
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)*	
AEL-5002-425-18.75	1875 W	3750W (x2)*	18.75 Arms / 56.25Apeak	37.5Arms/56.25Apeak (x2)*	50~425Vrms / 600Vdc
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)*	
AEL-5006-350-56	5600 W	11200W (x2)*	56.0 Arms / 168Apeak	112.0Arms/ 168Apeak (x2)*	50~350Vrms / 500Vdc
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)*	
AEL-5006-425-56	5600 W	11200W (x2)*	56.0 Arms / 168Apeak	112.0Arms/ 168Apeak (x2)*	50~425Vrms / 600Vdc
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)*	
AEL-5003-480-18.75	2800W	5600W (x2)*	18.75 Arms / 56.25Apeak	37.5Arms/56.25Apeak (x2)*	50~480Vrms / 700Vdc
AEL-5004-480-28	3750 W	7500W (x2)*	28 Arms / 84Apeak	56Arms/84Apeak (x2)*	

* Power and current boost rate of Turbo ON

AC & DC Electronic Load

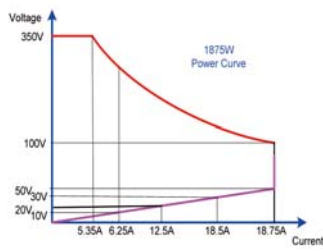
FEATURES

- 4 digit V / A/W Meter · display the Voltage (Vrms, Vpeak, Vmax., Vmin) · Current (Irms, Ipeak, Imax., Imin.) · Watt, Voltampere (VA) · Frequency · Crest Factor · Power Factor · Total Harmonic Distortion of Voltage (VTHD), Voltage Harmonic (VH) · Total Harmonic Distortion of Current (ITHD), Current Harmonic (IH)
- CC, Linear CC, CR, CV, CP and AC Rectifier Load mode
- Crest factor range : 1.414~5.0
- Power factor (PF) range : 0~1 lead or (-1~0) lag
- Built-in function 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 , OCP, OPP test modes
- Turbo mode is able to increase to 2 times the current and power of electronic load in a short period which is the most suitable for Fuse / Breaker test and short circuit, OCP, OPP test of AC power supply
- Time measurement can be applied to batteries, UPS, fuses and circuit breakers and other tests
- Three units parallel up to 90KW and three-phase Δ or Y load connection can be synchronized control by one master unit
- Support on-load boot; at first set Load ON to support on-load boot, inverter or uninterruptible power supply is turned on directly with the set load current, used to verify whether the starter is stable when the Inverter is connected.
- Supports the loading and unloading angle control; the loading and unloading angle control, the full range of 0-359 degrees can be set to verify whether the Inverter output voltage transient response is stable when the actual electrical plugging and unplugging, and whether Overshoot/Undershoot is within the allowable range.
- Support positive half-cycle or negative half-cycle loading; used to verify whether the Inverter output voltage remains stable when the actual appliance has only positive half-cycle or negative half-cycle load current.
- Supports SCR/TRIAC current phase modulation waveforms, 90 degree Trailing edge and Leading Edge.
- Supports the Inrush Current of the inverter at startup and the Surge Current test when the load is suddenly plugged in (Hot Plug-in) during testing.
- Frequency Range : DC, 40~440Hz
- Voltage and current monitoring
- Can be controlled by external voltage for CC, Linear CC, CR, CV, CP operating modes
- Protection against V, I, W, and °C
- Optional interface : GPIB · RS232 · USB · LAN
- The most complete measurement capabilities

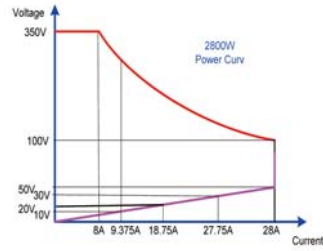
AEL-5000 Series AC & DC electronic load built-in 16-bit A/D and DSP precision measurement circuit, provides accurate measurements, measurement items have Vrms, Arms, Watt, VA, CF, PF, THD, VTHD, ITHD, Ipeak, Amax, Amin, Vmax, and Vmin In addition to these measurement functions, it also provides time measurement · products such as UPS, fuses and circuit breakers etc. trip or blow time and transfer time for Off-line UPS

AC & DC Electronic Load

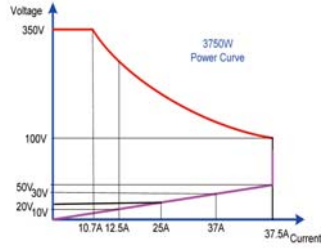
POWER CURVE



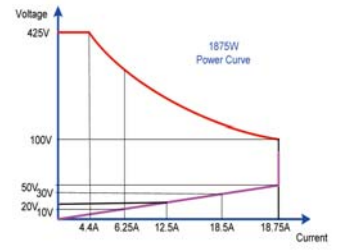
AEL-5002-350-18.75



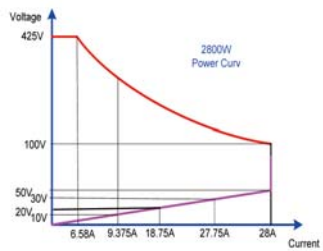
AEL-5003-350-28



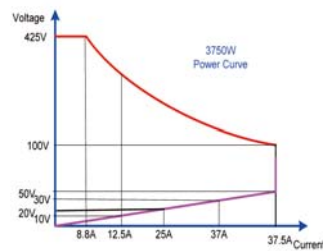
AEL-5004-350-37.5



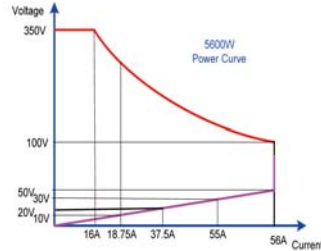
AEL-5002-425-18.75



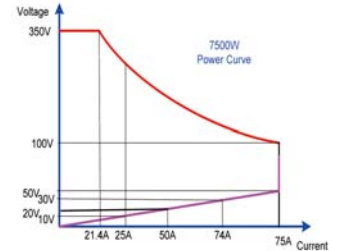
AEL-5003-425-28



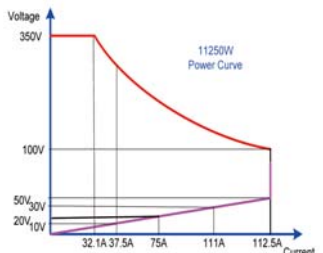
AEL-5004-425-37.5



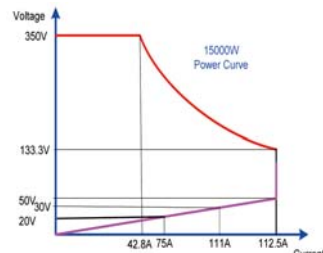
AEL-5006-350-56



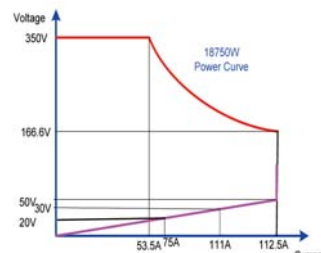
AEL-5008-350-75



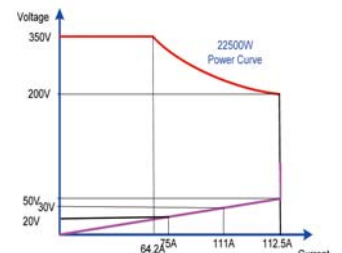
AEL-5012-350-112.5



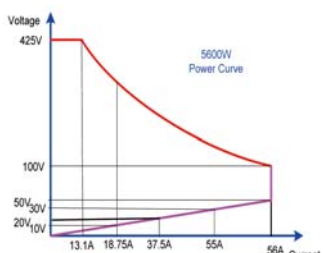
AEL-5015-350-112.5



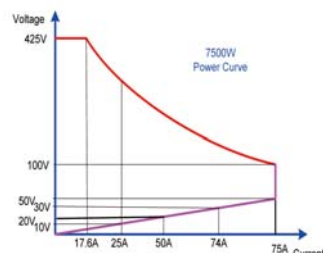
AEL-5019-350-112.5



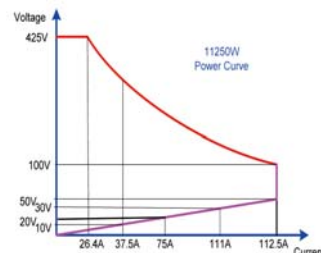
AEL-5023-350-112.5



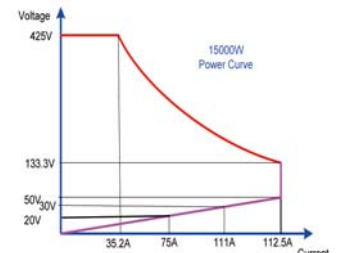
AEL-5006-425-56



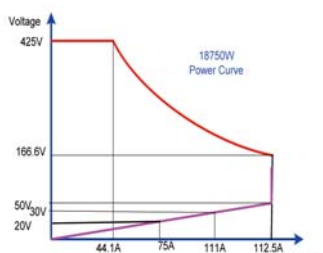
AEL-5008-425-75



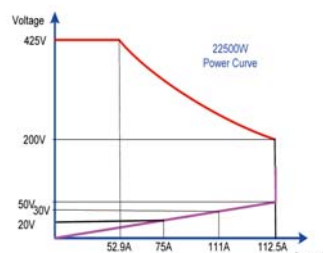
AEL-5012-425-112.5



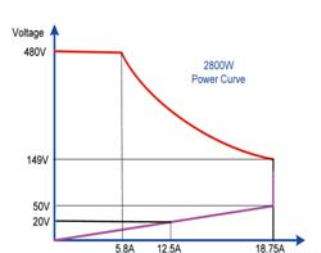
AEL-5015-425-112.5



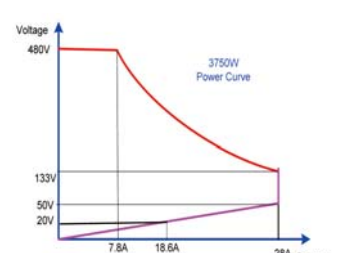
AEL-5019-425-112.5



AEL-5023-425-112.5



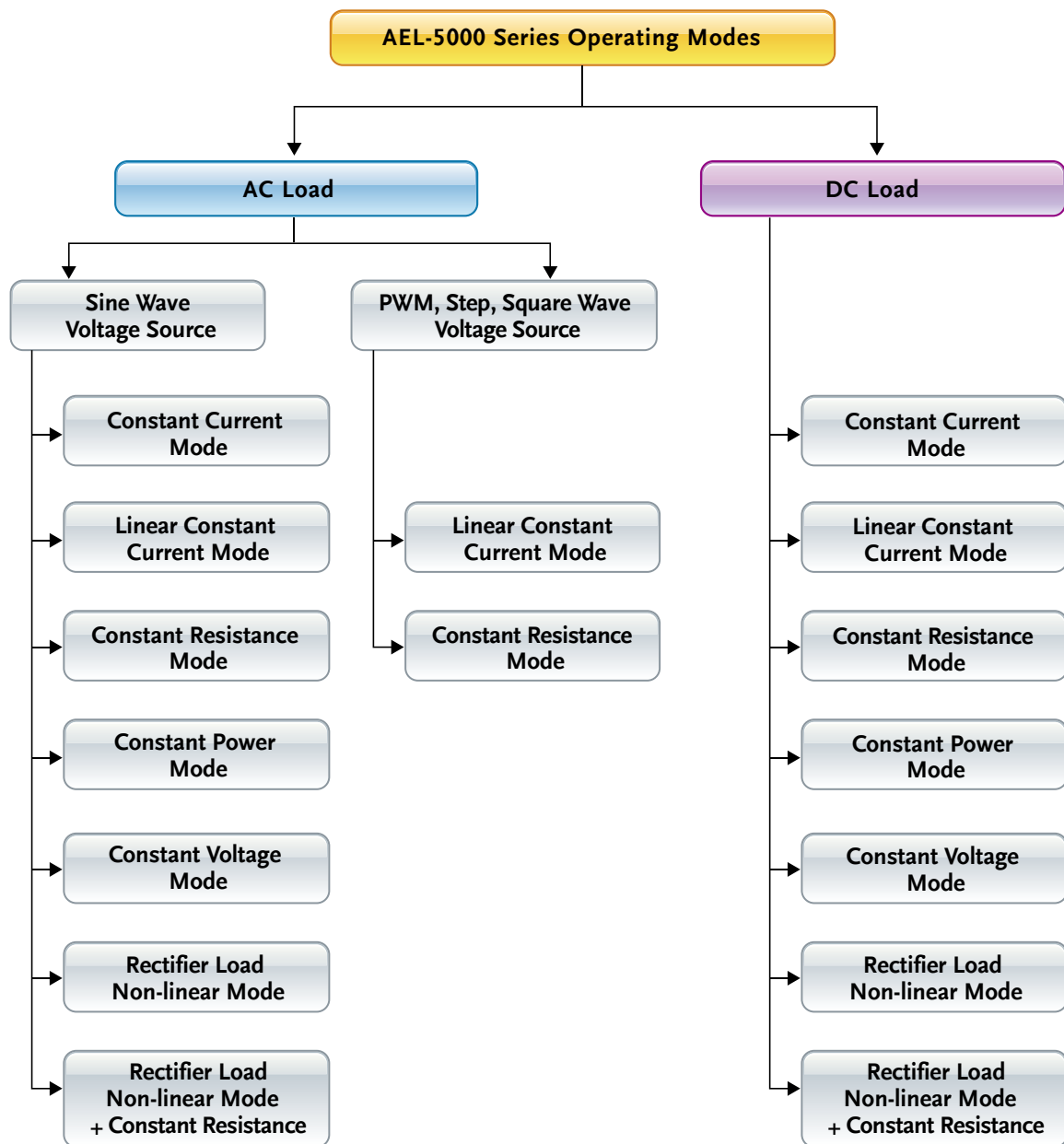
AEL-5003-480-18.75



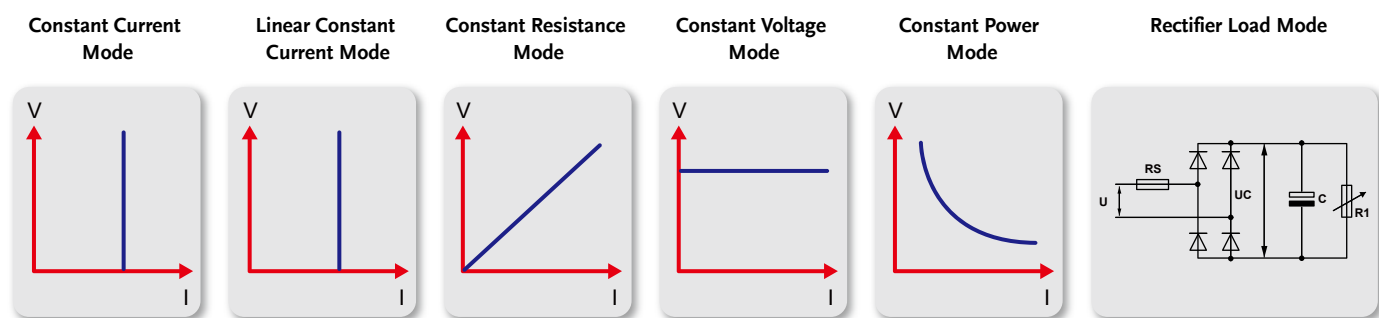
AEL-5004-480-28

AC & DC Electronic Load

COMPLETE AC AND DC LOAD MODES



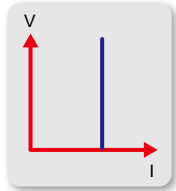
AC LOAD MODE



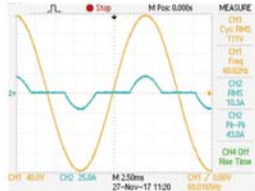
AC & DC Electronic Load

AC LOAD MODE

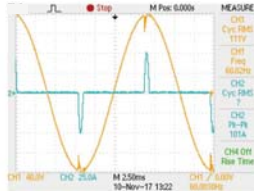
CC Mode : In the constant current mode of AC Load, can be applied to sine wave voltage source, providing CF, PF test of linear load.



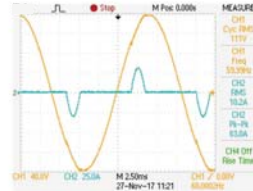
CC mode



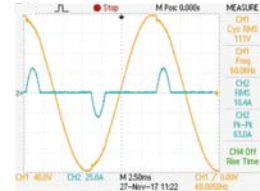
CC mode, CF = 2



CC mode, CF = 5

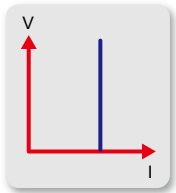


CC mode, CF = +0.5

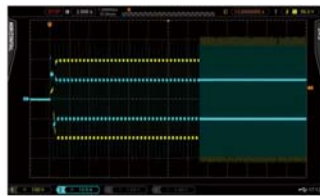


CC mode, CF = -0.5

Linear Constant Current Mode : Can be applied to sine wave and non-sine wave voltage source, as shown in the PWM inverter driver, step voltage source, and off-line UPS sine wave switch to square wave, square wave switch to sine wave.



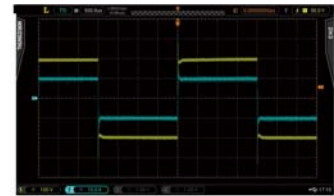
Linear CC mode



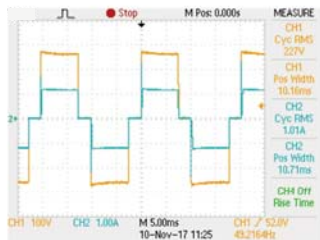
Linear CC mode, PWM 10A 2.5Hz to 250Hz



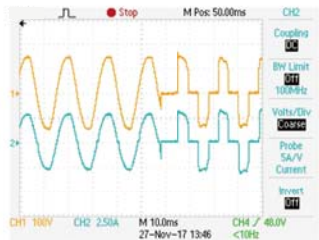
Linear CC mode, PWM 10A 2.5Hz



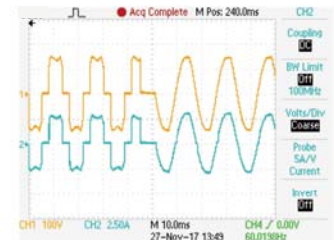
Linear CC mode, PWM 10A 250Hz



Linear CC mode, Step 10A

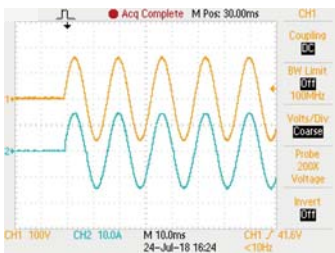


Linear CC mode, UPS Sine to Square Waveform

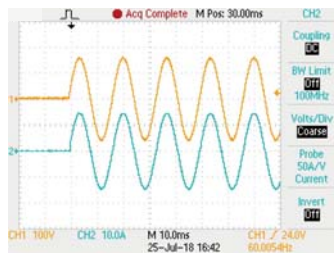


Linear CC mode, UPS Sine to Square Waveform

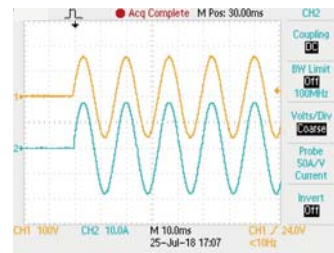
Supported on-load start-up : at first set Load ON to support on-load start-up, inverter or uninterruptible power supply is start-up directly with the set load current, used to verify whether the Inverter is stable when the load is connected during start-up.



CC 10 A on-load boot



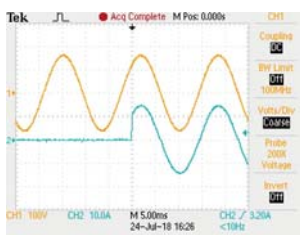
CR 10 A on-load boot



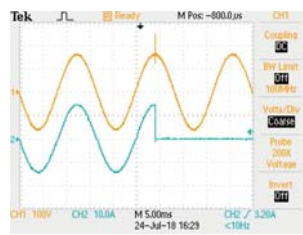
CV 10 A on-load boot

AC & DC Electronic Load

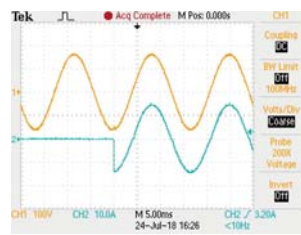
Supports the loading and unloading current angle control ; the loading and unloading current angle range of 0-359 degrees can be programmed to verify whether the Inverter output voltage transient response is stable during the actual electrical appliance is connected or turn ON / OFF randomly it can be used to verify the Overshoot / Undershoot response is within the desire range.



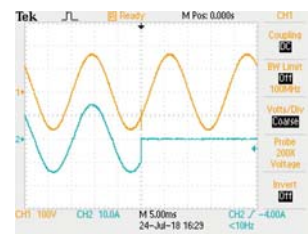
45 degrees loading



90 degrees unloading

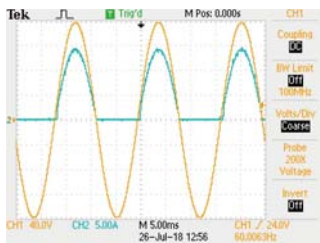


270 degrees loading

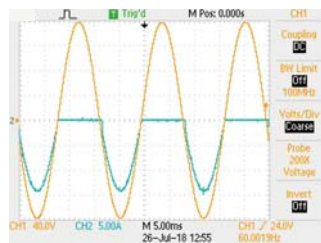


315 degrees unloading

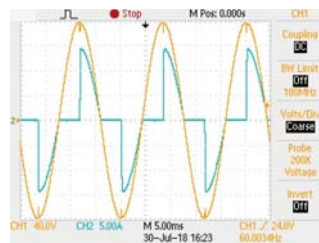
Support positive half-cycle or negative half-cycle loading ; it can be used to verify whether the Inverter output voltage remains stable when the actual appliance has only positive half-cycle or negative half-cycle load current.



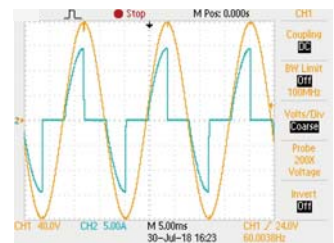
positive half-cycle



negative half-cycle

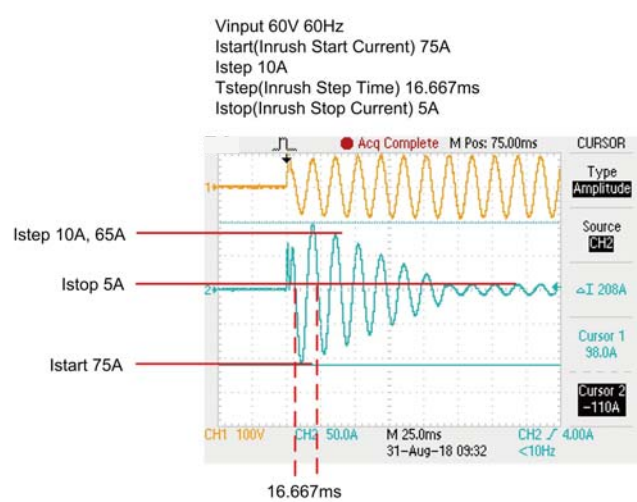
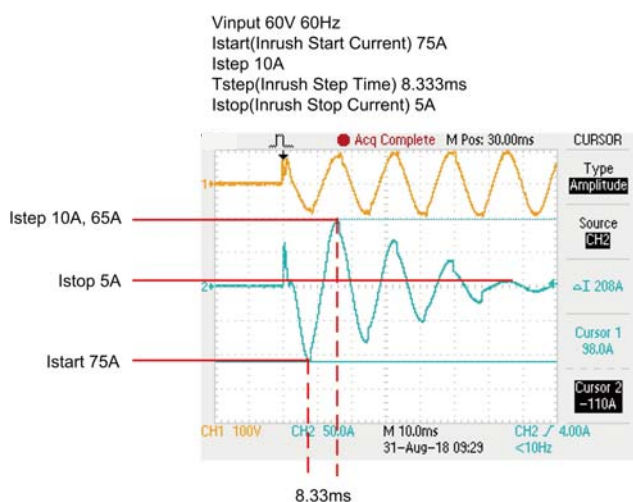


90 degrees TRIAC/SCR current waveforms Leading edge



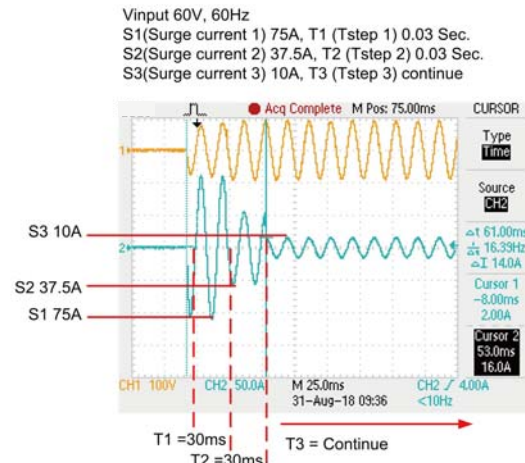
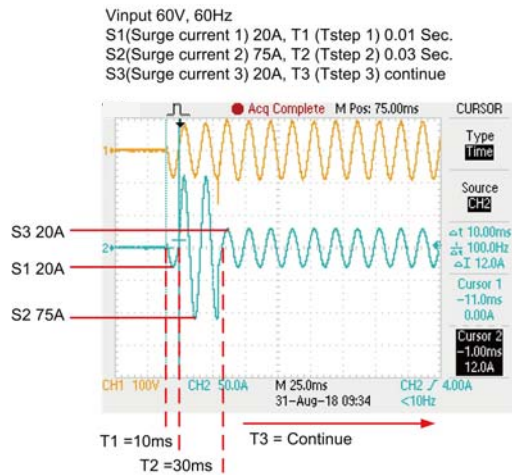
90 degrees current waveforms Leading edge

Support the Inrush Current of the inverter at startup and Power Plug-in test when the power supply is turned on to verify the Inrush Current and the sudden connection of the appliance when the power is turned on(Surge Current), to verify if whether the Inverter output voltage transient response is stable, as shown in the figure below.



Inrush current test at boot

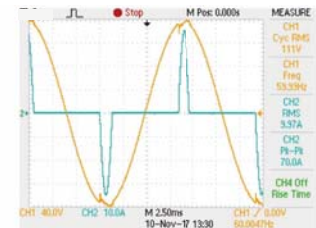
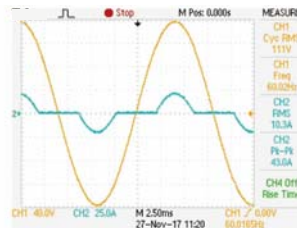
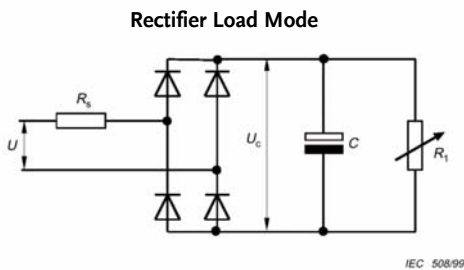
AC & DC Electronic Load



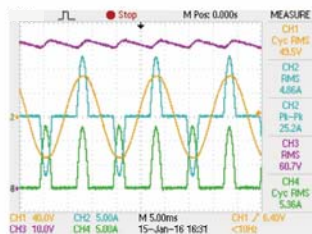
Inrush Current test at boot

AC RECTIFIED LOAD SIMULATION MEET THE IEC62040-3 AND IEC61683 TEST SPECIFICATIONS

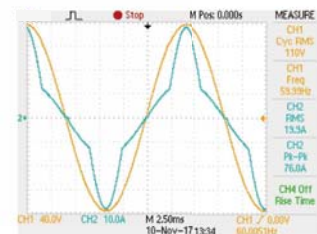
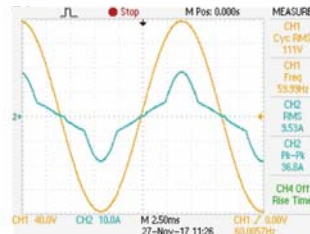
(IEC62040-3 UPS Efficiency Measurement non-Linear and IEC61683 Resistive Plus Non-Linear) C AC & DC electronic load AC rectified load mode is fully compliance with the IEC test specification requirements for the UPS, IEC 62040-3 UPS Efficiency Measurement Non-Linear and IEC 61683 Resistive Plus Non-Linear, respectively, AEL-5000 Series AC rectifier load mode uses CC + CR load mode and maintain current THD at 80%, to simulate the actual PV Inverter connected to the electronic device.



Non-Linear CC mode for UPS test



The actual V / A waveform

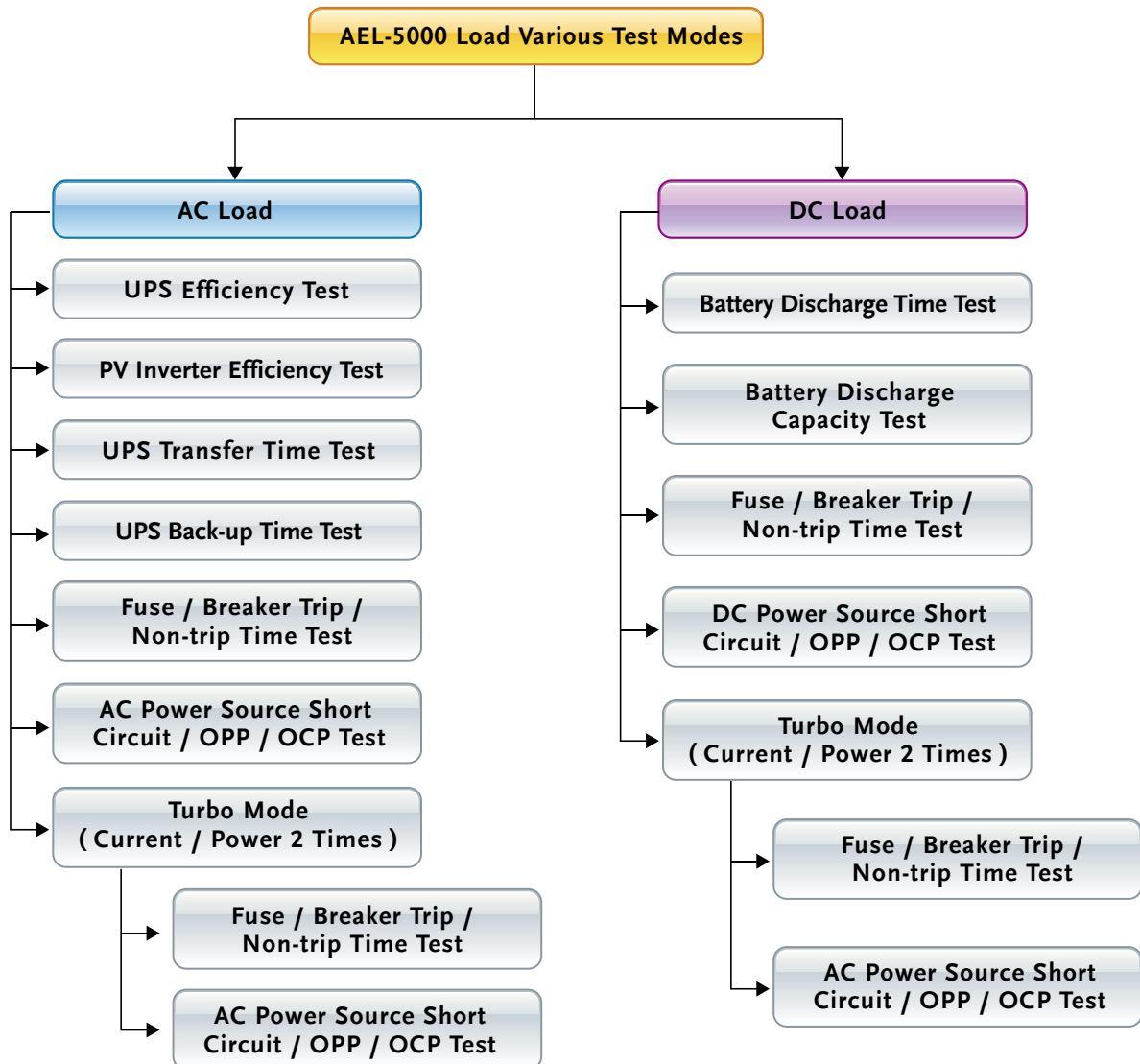


110V, 5A + 22ohm Test Waveform 110V, 10A + 11ohm Test Waveform
PV Inverter test Non-Linear CC + Resistive mode (CC+CR)

AC & DC Electronic Load

AEL-5000 LOAD VARIOUS TEST MODES

The AEL-5000 Series AC & DC electronic load features built-in test modes for a variety of products. Including AC Load of UPS, Inverter, Fuse/Breaker, AC Power Source , and DC Load of Battery, Fuse/Breaker, DC Power Source etc.. , as shown below.



AC & DC Electronic Load

CURRENT PROTECTION COMPONENT TEST

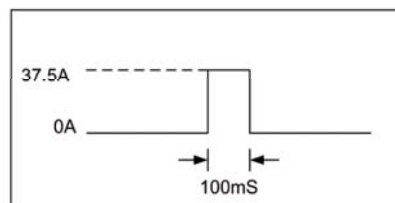
Current protection component includes Fuse, Circuit breakers and a new PTC Resettable fuse etc., its function is when the circuit current exceeds the design of the rated value, that is, if the load exceeds the design of the current capacity, the circuit will be disconnected, in order to avoid overheating, even fire. Fuse is a one-time use of the protection components, Breaker and PTC can be reused.

The current protection components of the protection current value and the protection reaction time has usually a product of the relationship that is, the greater the current through the current protection component, the shorter the reaction time to protect the circuit. This is similar to energy protection components.

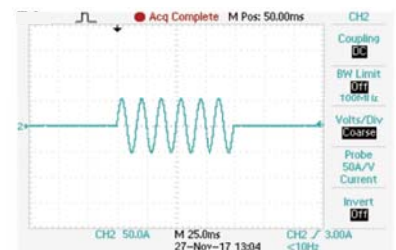
Due to this feature, the AEL-5000 Series AC & DC electronic load, in particular for the verification of current protection components, has developed a Fuse Test function to test and verify such protection element with an electronic load of rated current and power. When Turbo mode is set to ON, the test current can be up to double the maximum current within 1 second of test period. Take AEL-5004-350-37.5 as an example, the maximum test current can be doubled to 75A. That is, when the Turbo mode of the AEL-5000 Series is ON, the test current value can reach to 2 units AEL-5000 Series (normal mode) within 1



Turbo OFF, Short 100ms 37.5A
Test result screen



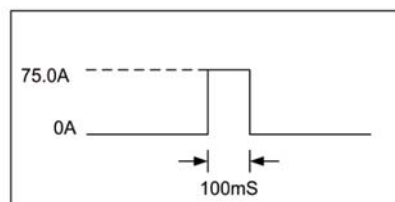
Turbo OFF, Short 100ms 37.5A Setting



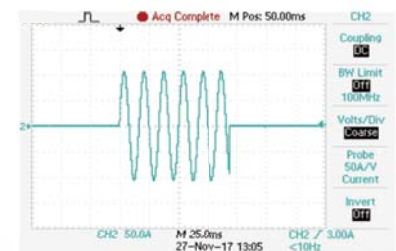
Turbo OFF, Short 100ms 37.5A
The actual test waveform



Turbo ON, Short 100ms 75.0A
Test result screen



Turbo ON, Short 100ms 75.0A Setting

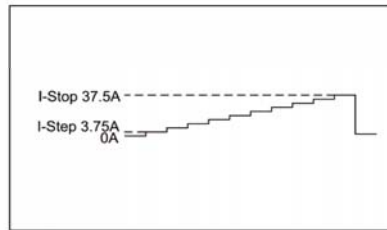


Turbo ON, Short 100ms 75.0A
The actual test waveform

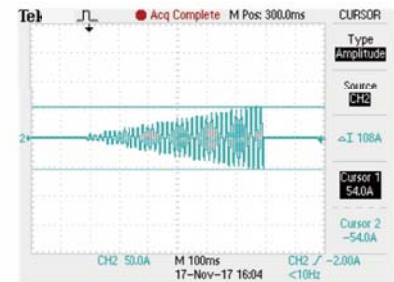
AC & DC Electronic Load



Turbo OFF, OCP Istep 3.75 A Istop 37.5A
Test result screen



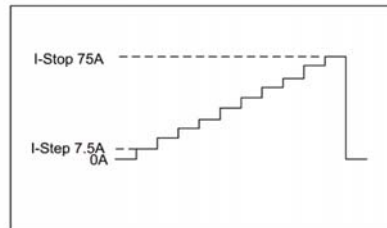
Turbo OFF, OCP Istep 3.75 A Istop 37.5A
Setting



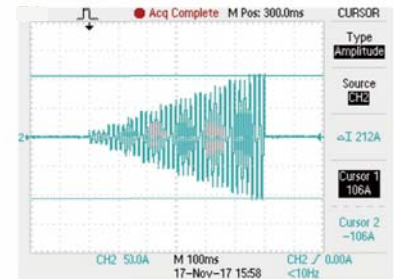
Turbo OFF, OCP Istep 3.75 A Istop 37.5A
The actual test waveform



Turbo ON, OCP Istep 7.5 A Istop 75A
Test result screen



Turbo ON, OCP Istep 7.5 A Istop 75.0A
Setting



Turbo ON, OCP Istep 7.5 A Istop 75.0A
The actual test waveform

Basically, Fuse test has Trip (Blown) and Non-Trip (no Blown) 2 types.

Fuse Test setting parameters include test current (Istart), test time (Time), test REPEAT Time etc..

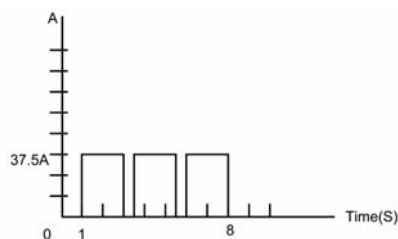
In the Trip fuse test, it is used to test when there is too large abnormal current the Fuse or Bleaker must be able to provide the protection of the circuit break, that means current protection components need the fuse action, therefore the test current needs to be larger than the fuse current rating.

When the AEL-5000 Series AC & DC electronic load detects a voltage lower than 1.0V, the LCD displays the number of Repeat Cycle and Current Protection Fusing Time XXXX.X sec.

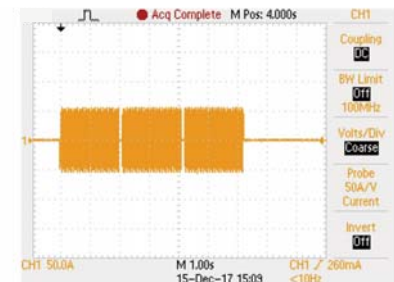
In the Non-Trip (no Blown) test, the current protection component is required to achieve non-blow action, so the test current needs to be lower than the fuse current rating that is used to verify the fuse must not blow during normal current range. When the AEL-5000 Series AC & DC electronic load is not blown after the test time (Pulse Time) and the repeated Repeat number, the LCD displays the information of the Repeat number.



Turbo : OFF, Fuse mode
Test result screen



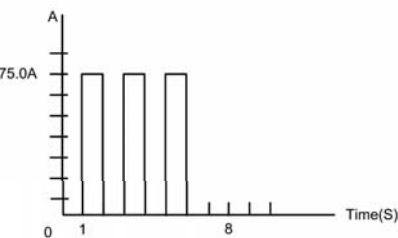
Setting : Turbo : OFF, Fuse ON
CC pulse 37.5A, 2S, Test 3 cycles



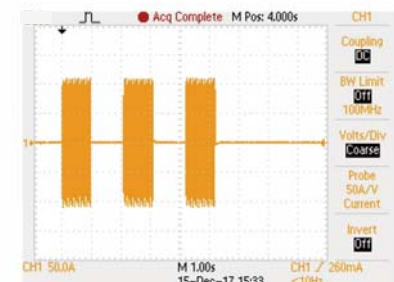
Turbo : OFF, Fuse ON, CC pulse 37.5A, 2S,
Test 3 cycles the actual test waveform



Turbo ON, Fuse mode
Test result screen



Setting : Turbo : ON, Fuse ON
CC pulse 75.0A, 1S, Test 3 cycles

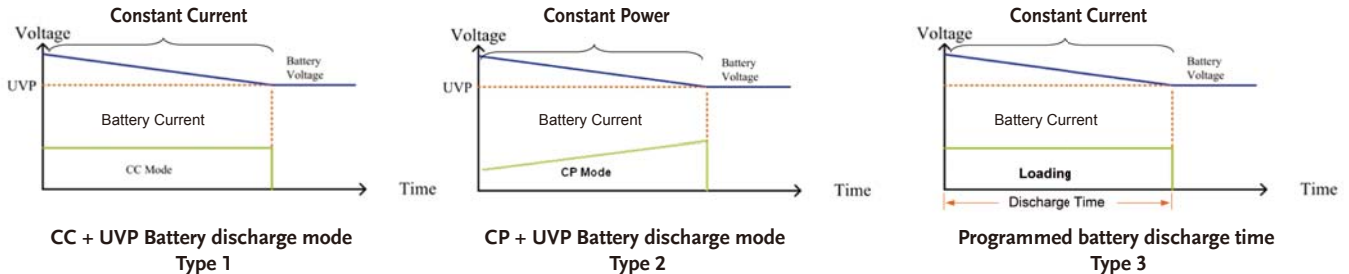


Turbo : ON, Fuse ON, CC pulse 75A, 1S,
Test 3 cycles the actual test waveform

AC & DC Electronic Load

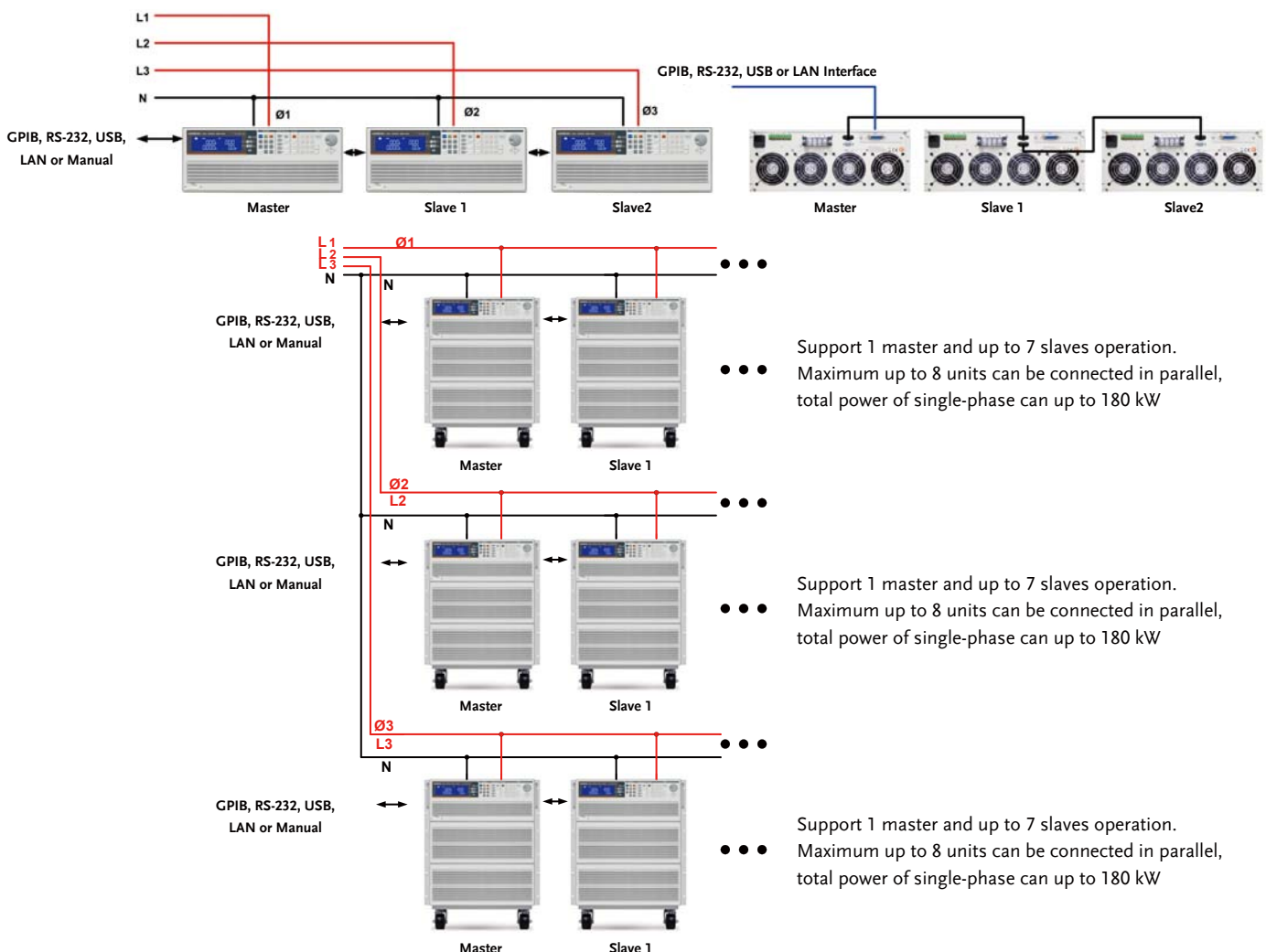
BATTERY TEST FUNCTION

AEL-5000 Series AC & DC electronic load has built-in new TYPE1 ~ TYPE3 battery discharge test, you can select the desired battery test mode, the test results can be directly displayed on the LCD display for battery AH capacity, the voltage value after discharge and the cumulative discharge time.



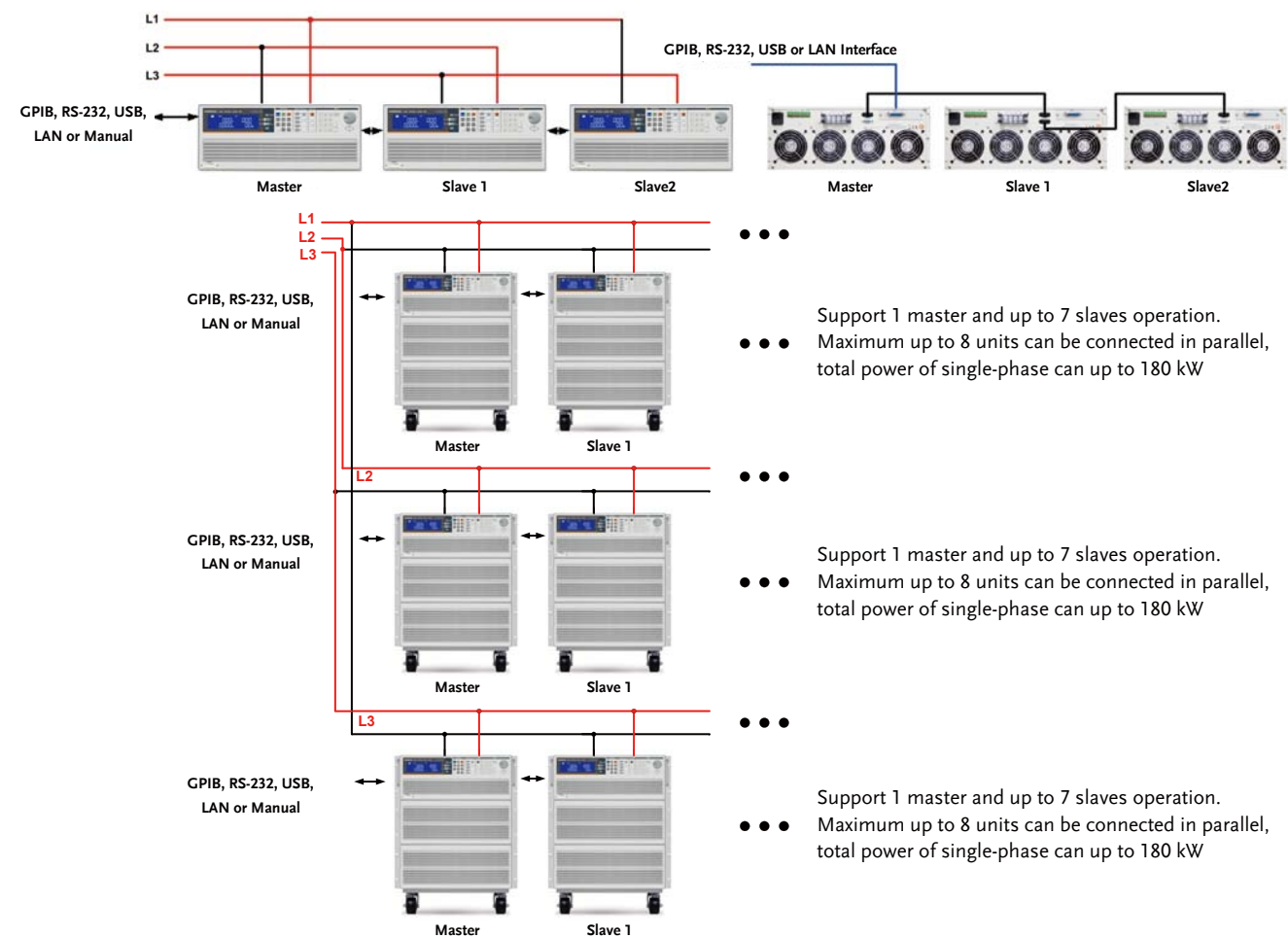
PARALLEL AND THREE-PHASE CONTROL

The AEL-5000 Series AC & DC load provides multiple units in parallel, three-phase applications that allows users to test applications with greater power or three-phase AC power, this is more flexibility to use the AEL-5000 Series AC & DC Electronic Load for control. In parallel / three-phase operation, the user operates the unit as the operation of a single machine, as long as the Master can be operated, Slave1 and Slave2 will automatically sink the load and measurement. Parallel and three-phase connection as shown below.

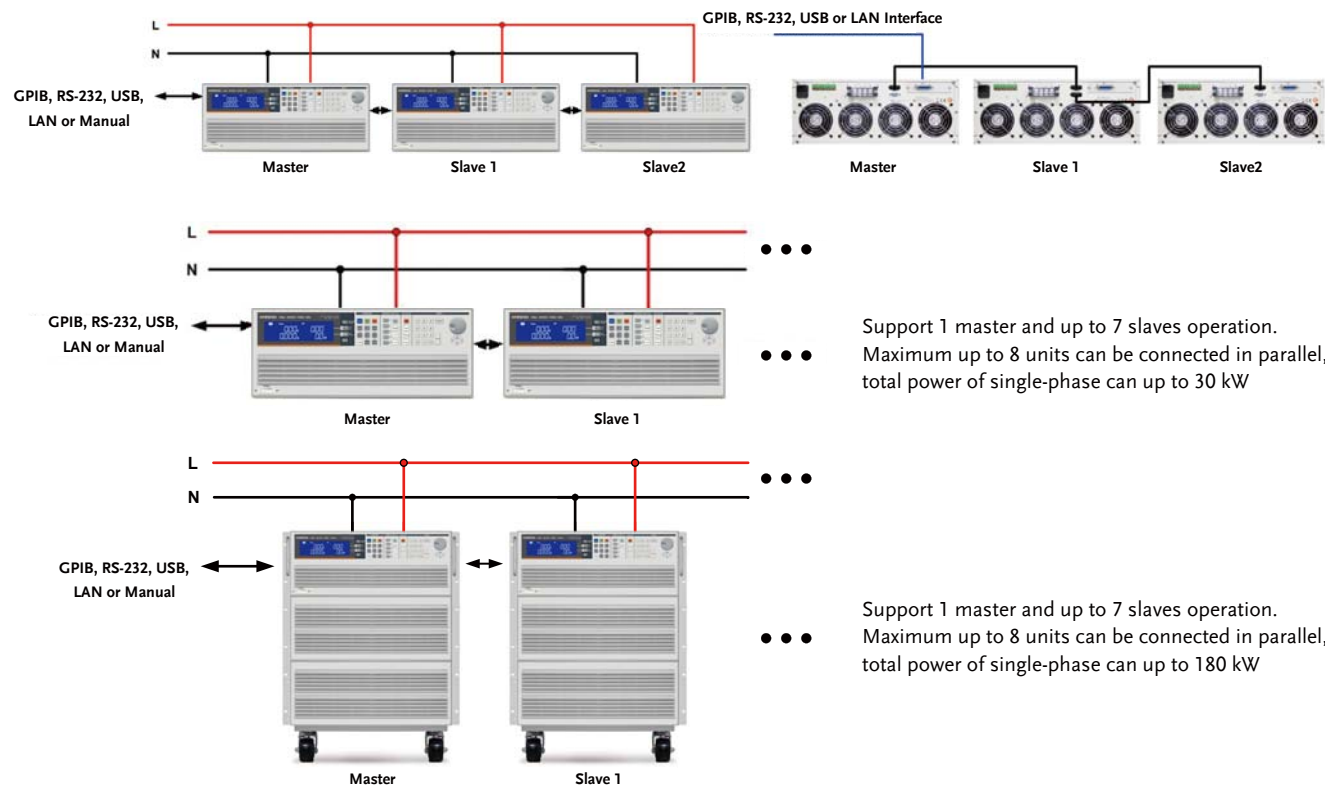


Maximum power of single-phase can up to 180KW, 3-phase total power up to 540KW 3-phase Δ or Y Connection

AC & DC Electronic Load



Maximum power of single-phase can up to 180KW, 3-phase total power up to 540KW 3-phase Δ or Y Connection parallel connection



Parallel connection

AC & DC Electronic Load

PANEL INSTRUCTIONS



1	LCD Multi-function display Four meters can display the voltage value at the same time the Voltage(Vrms, Vpeak, Vmax., Vmin) ~ Current (Irms, Ipeak, Imax., Imin.) ~ Watt, Voltampere(VA) ~ Frequency ~ Crest Factor ~ Power Factor ~ Total Harmonic Distortion of Volt(VTHD) ~ Voltage Harmonic(VH) ~ Total Harmonic Distortion of Current(ITHD) ~ Current Harmonic(IH)	3	Operate function keys Mode ~ Preset ON / OFF ~ Load ON / OFF ~ Sense ON / OFF ~ Level A / B ~ Config ~ Limit ~ Recall ~ Store ~ SEQ ~ Local ~ System operate function keys
		4	Waveform library keys Can be quickly set CF $\sqrt{2}$ / 2 / 2.5 / 3 / 3.5 , +/- PF0.6 / 0.7 / 0.8 / 0.9 / 1.0 , FREQ Auto / 50Hz / 60Hz / 400Hz °
		5	Test function keys Can select Short / OPP / OCP / Non-L / NL-CR / Fuse / Batt (Battery Discharge) / Trans (UPS transfer time) test functions.
2	Meter switch button V / A / W keys can set the display Rms / Peak / Max / Min, Meter key can select PF / CF / FREQ , switchable display WATT / VA / VAR keys , THD key choose to display THD	6	Numeric keypad
		7	Knob setting
		8	Switch
		9	Cursor and button setting



10	AC power input connector	13	Master-slave control connector Master : Connect the top or bottom to the next unit Slave : The top connects to the previous unit and the bottom connects to the next unit
11	Vmonitor ~ Imonitor ~ Analog input ~ SYNC input Input terminal		
12	Vload, Vsense Input terminal	14	Communication interface (GPIB ~ RS-232 ~ USB ~ LAN)

AC & DC Electronic Load

SPECIFICATIONS						
MODEL	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)	1875 W	2800W	3750 W	1875 W	2800W	3750 W
Current(Ampere)	18.75 Arms / 56.25Apeak	28 Arms / 84Apeak	37.5 Arms / 112.5Apeak	18.75 Arms / 56.25Apeak	28 Arms / 84Apeak	37.5 Arms / 112.5Apeak
Voltage(Volt)	50~350Vrms / 500Vdc			50~425Vrms / 600Vdc		
FREQUENCY Range	DC,40~440Hz(CC,CP Mode), DC~440Hz(LIN,CR,CV Mode)			DC,40~440Hz(CC,CP Mode), DC~440Hz(LIN,CR,CV Mode)		
PROTECTIONS						
Over Power Protection	≒1968.75Wrms or Programmable	≒2940Wrms or Programmable	≒3937.5Wrms or Programmable	≒1968.75Wrms or Programmable	≒2940Wrms or Programmable	≒3937.5Wrms or Programmable
Over Current Protection	≒19.687 Arms or Programmable	≒29.4 Arms or Programmable	≒39.375 Arms, or Programmable	≒19.687 Arms or Programmable	≒29.4 Arms or Programmable	≒39.375 Arms, or Programmable
Over Voltage Protection	≒367.5 Vrms / 525Vdc			≒446.25 Vrms/630Vdc		
Over Temp. Protection	Yes			Yes		
OPERATION MODE						
Constant Current Mode for Sine-Wave						
Range	0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
Resolution	0.3125mA/16bits	0.5mA/16bits	0.625mA/16bits	0.3125mA/16bits	0.5mA/16bits	0.625mA/16bits
Accuracy	± (0.1% of setting + 0.2% of range) @ 50/60Hz			± (0.1% of setting + 0.2% of range) @ 50/60Hz		
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave						
Range	0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
Resolution	0.3125mA/16bits	0.5mA/16bits	0.625mA/16bits	0.3125mA/16bits	0.5mA/16bits	0.625mA/16bits
Accuracy	± (0.1% of setting + 0.2% of range) @ 50/60Hz			± (0.1% of setting + 0.2% of range) @ 50/60Hz		
Constant Resistance Mode						
Range	3.2 ohm ~ 64K ohm	2.0 ohm ~ 40K ohm	1.6 ohm ~ 32K ohm	3.2 ohm ~ 64K ohm	2.0 ohm ~ 40K ohm	1.6 ohm ~ 32K ohm
Resolution*1	0.0052083mS/16bits	0.0083333mS/16bits	0.010416mS/16bits	0.0052083mS/16bits	0.0083333mS/16bits	0.010416mS/16bits
Accuracy	±0.2% of (setting + range) @ 50/60Hz			±0.2% of (setting + range) @ 50/60Hz		
Constant Voltage Mode						
Range	50~350Vrms / 500Vdc			50~425Vrms / 600Vdc		
Resolution	0.01V			0.1V		
Accuracy	±(0.1% of setting + 0.1% of range)			±(0.1% of setting + 0.1% of range)		
Constant Power Mode						
Range	1875W	2800W	3750W	1875W	2800W	3750W
Resolution	0.1W	0.1W	0.1W	0.1W	0.1W	0.1W
Accuracy	±(0.1% of setting + 0.1% of range)			±(0.1% of setting + 0.1% of range)		
CREST FACTOR (CC & CP MODE ONLY)						
Range	√2~5			√2~5		
Resolution	0.1			0.1		
Accuracy	(0.5% / Irms) + 1% F.S.			(0.5% / Irms) + 1% F.S.		
POWER FACTOR (CC & CP MODE ONLY)						
Range	0~1 Lag or Lead			0~1 Lag or Lead		
Resolution	0.01			0.01		
Accuracy	1% F.S.			1% F.S.		
TEST MODE						
UPS Efficient Measurement	Non-Linear Mode			Non-Linear Mode		
Operating Frequency	Auto ; 40~440Hz			Auto ; 40~440Hz		
Current Range	0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
PF Range	0~1			0~1		
Measuring Efficiency For PV Systems, Power Conditioners for THD 80%	Resistive + Non-Linear Mode			Resistive + Non-Linear Mode		
Operating Frequency	Auto ; 40~440Hz			Auto ; 40~440Hz		
Current Range	0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
Resistive Range	3.2 ohm ~ 64K ohm	2.0 ohm ~ 40K ohm	1.6 ohm ~ 32K ohm	3.2 ohm ~ 64K ohm	2.0 ohm ~ 40K ohm	1.6 ohm ~ 32K ohm
UPS Back-Up Function(CC,LIN,CR,CP)						
UVP (VTH)	50~350Vrms / 500Vdc			50~425Vrms / 600Vdc		
UPS Back-Up Time	1~99999 Sec. (>27H)			1~99999 Sec. (>27H)		
Battery Discharge Function(CC,LIN,CR,CP)						
UVP (VTH)	50~350Vrms / 500Vdc			50~425Vrms / 600Vdc		
Battery Discharge Time	1~99999 Sec. (>27H)			1~99999 Sec. (>27H)		
UPS Transfer Time						
Current Range	0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
UVP (VTH)	2.5V			2.5V		
Time Range	0.15mS~999.99mS			0.15mS~999.99mS		
Fuse Test Mode						
Max. Current	Turbo OFF 18.75Arms Turbo ON 37.5Arms (x2) *3	28.0Arms 56.0Arms (x2) *3	37.5Arms 75.0Arms (x2) *3	18.75Arms 37.5Arms (x2) *3	28.0Arms 56.0Arms (x2) *3	37.5Arms 75.0Arms (x2) *3
Trip & Non-Trip Time	Turbo OFF 0.1~9999.9sec. Turbo ON 0.1~1.0sec.	0.1~9999.9sec.		Turbo OFF 0.1~9999.9sec. Turbo ON 0.1~1.0sec.	0.1~9999.9sec.	
Meas. Accuracy	±0.003 Sec.			±0.003 Sec.		
Repeat Cycle	0~255			0~255		
Short/OPP/OCF Test Function						
Short Time	Turbo OFF 0.1S ~ 10Sec. Or Cont. Turbo ON 0.1S ~ 1Sec.	0.1S ~ 1Sec.		Turbo OFF 0.1S ~ 10Sec. Or Cont. Turbo ON 0.1S ~ 1Sec.	0.1S ~ 1Sec.	
OPP/OCF Step Time	Turbo OFF 100ms Turbo ON 100ms, up to 10 Steps	100ms, up to 10 Steps		Turbo OFF 100ms Turbo ON 100ms, up to 10 Steps	100ms, up to 10 Steps	
OCF Istop	Turbo OFF 18.75Arms Turbo ON 37.5Arms	28.0Arms 56.0Arms	37.5Arms 75.0Arms	18.75Arms 37.5Arms	28.0Arms 56.0Arms	37.5Arms 75.0Arms
OPP Pstop	Turbo OFF 1875W Turbo ON 3750W	2800W 5600W	3750W 7500W	1875W 3750W	2800W 5600W	3750W 7500W
Programmable Inrush Current Simulation: Istart - Istop / Tsep						
Istart, Inrush Start Current	0~37.5A	0~56A	0~75A	0~37.5A	0~56A	0~75A
Inrush Step Time	0~18.75A	0.1mS~100mS	0~37.5A	0~18.75A	0.1mS~100mS	0~37.5A
Inrush, Inrush Stop Current	0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
Programmable Surge Current Simulation: S1/T1 - S2/T2 - S3/T3						
S1 and S2 Current	0~37.5A	0~56A	0~75A	0~37.5A	0~56A	0~75A
T1 and T2 Time		0.01S~0.5Sec.			0.01S~0.5Sec.	
S3 Current	0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
T3 Time		0.01S ~ 9.99Sec. Or Cont.			0.01S ~ 9.99Sec. Or Cont.	
MEASUREMENTS						
VOLTAGE READBACK V METER						
Range	500V			600V		
Resolution	0.01V			0.01V		
Accuracy	±0.05% of (reading + range)			±0.05% of (reading + range)		
Parameter	Vrms,V Max/Min,+/-Vpk			Vrms,V Max/Min,+/-Vpk		
CURRENT READBACK A METER						
Range	9.375Arms/18.75Arms	14Arms/28Arms	18.75Arms/37.5Arms	9.375Arms/18.75Arms	14Arms/28Arms	18.75Arms/37.5Arms
Resolution	0.2mA/0.4mA	0.3mA/0.6mA	0.4mA/0.8mA	0.2mA/0.4mA	0.3mA/0.6mA	0.4mA/0.8mA
Accuracy	±0.05% of (reading + range) @ 50/60Hz			±0.05% of (reading + range) @ 50/60Hz		
Parameter	Irms,I Max/Min,+/-Ipk			Irms,I Max/Min,+/-Ipk		
WATT READBACK W METER						
Range	1875W	2800W	3750W	1875W	2800W	3750W
Resolution	0.03125W	0.05W	0.0625W	0.03125W	0.05W	0.0625W
Accuracy	±0.1% of (reading + range)			±0.1% of (reading + range)		
VA METER	VrmsxArms Correspond To Vrms and Arms			VrmsxArms Correspond To Vrms and Arms		
POWER FACTOR METER						
Range	+/- 0.000~1.000			+/- 0.000~1.000		
Accuracy	±(0.002±(0.001/PF)*F)			±(0.002±(0.001/PF)*F)		
Frequency METER(V)						
Range	DC,40~440Hz			DC,40~440Hz		
Accuracy	0.1%			0.1%		
Other Parameter METER	VA, VAR, CF.,I, Ipeak, I max., I min, V max., V min., IHD, VHD, ITHD, VTHD					
OTHERS						
Start up Loading	Yes , Power on loading during Inverter / UPS start up			Yes , Power on loading during Inverter / UPS start up		
Load ON / OFF Angle	0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading			0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading		
Half Cycle and SCR/TRIAC Loading	Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed			Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed		
Master/Slave (3 Phase or Parallel Application)	Yes, 1 master and upto 7 slave units			Yes, 1 master and upto 7 slave units		
External Programming Input (OPTION)	F.S / 10Vdc, Resolution 0.1V			F.S / 10Vdc, Resolution 0.1V		
External SYNC Input	TTL			TTL		
Vmonitor (Isolated)	±500V / ±10V			±600V / ±10V		
Imonitor (Isolated)	±56.25Apk / ±10Vpk	±84Apk / ±10Vpk	±112.5Apk / ±10Vpk	±56.25Apk / ±10Vpk	±84Apk / ±10Vpk	±112.5Apk / ±10Vpk
Interface (OPTION)	GPIB ; RS-232 ; LAN ; USB			GPIB ; RS-232 ; LAN ; USB		
MAX. Power Consumption	150VA			150VA		
Operation Temperature *2	0 ~ 40 °C			0 ~ 40 °C		
Current of Input Impedance(mA)@50/60Hz ; @ 400Hz	~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
Dimension(H x W x D)	177 x 440 x 558 mm	177 x 440 x 558mm	177 x 440 x 558 mm	177 x 440 x 558 mm	177 x 440 x 558mm	177 x 440 x 558 mm
Weight	21.5Kg	27.5Kg	33.5Kg	21.5Kg	27.5Kg	33.5Kg

*1 ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Ω

*2 Operating temperature range is 0~40℃, all specification apply for 25℃±5℃, Except as noted

*3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCF/OPP test function

* All specifications apply for 50/60Hz.

* All specifications subject to change without notice.

AC & DC Electronic Load

SPECIFICATIONS							
MODEL	AEL-5006-350-56	AEL-5008-350-75	AEL-5012-350-112.5	AEL-5015-350-112.5	AEL-5019-350-112.5	AEL-5023-350-112.5	
Power (W)	5600 W	7500 W	11250W	15000 W	18750W	22500W	
Current(Ampere)	56 Arms / 168Apeak	75 Arms / 225Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak	
Voltage(Volt)	50~350Vrms / 500Vdc						
FREQUENCY Range	DC,40~440Hz(CC,CP Mode) ,DC~440Hz(LIN,CR,CV Mode)						
PROTECTIONS							
Over Power Protection	≠ 5880Wrms or Programmable	≠ 7875Wrms or Programmable	≠11812.5Wrms or Programmable	≠11812.5Wrms or Programmable	≠19687.5Wrms or Programmable	≠23625Wrms or Programmable	
Over Current Protection	≠ 58.8 Arms, or Programmable	≠ 78.75 Arms, or Programmable	≠ 118.125 Arms or Programmable	≠ 118.125 Arms or Programmable	≠ 118.125 Arms or Programmable	≠ 118.125 Arms or Programmable	
Over Voltage Protection	≠ 367.5 Vrms/525Vdc						
Over Temp. Protection	Yes						
OPERATION MODE							
Constant Current Mode for Sine-Wave							
Range	0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A	
Resolution	1mA/16bits	1.25mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits	
Accuracy	± (0.1% of setting + 0.2% of range) @ 50/60Hz						
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave							
Range	0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A	
Resolution	1mA/16bits	1.25mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits	
Accuracy	± (0.1% of setting + 0.2% of range) @ 50/60Hz						
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 ohm ~ 10.666K ohm	0.533 ohm ~ 10.666K ohm	
Resolution*1	0.016666mS/16bits	0.020832mS/16bits	0.031248mS/16bits	0.031248mS/16bits	0.031248mS/16bits	0.031248mS/16bits	
Accuracy	±0.2% of (setting + range) @ 50/60Hz						
Constant Voltage Mode							
Range	50~350Vrms / 500Vdc						
Resolution	0.1V						
Accuracy	±0.2% of (setting + range) @ 50/60Hz						
Constant Power Mode							
Range	5600W	7500W	11250W	15000 W	18750W	22500W	
Resolution	0.1W	0.1W	1W	1W	1W	1W	
Accuracy	±0.2% of (setting + range) @ 50/60Hz						
CREST FACTOR (CC & CP MODE ONLY)							
Range	√2~5						
Resolution	0.1						
Accuracy	(0.5% / I rms) + 1% F.S.						
POWER FACTOR (CC & CP MODE ONLY)							
Range	0~1 Lag or Lead						
Resolution	0.01						
Accuracy	1% F.S.						
TEST MODE							
UPS Efficient Measurement							
Operating Frequency	Non-Linear Mode						
Current Range	0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A	
PF Range	0~1						
Measuring Efficiency For PV Systems, Power Conditioners for THD 80%							
Operating Frequency	Resistive + Non-Linear Mode						
Current Range	0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A	
Resistive Range	1 ohm ~ 20K ohm	0.8 ohm ~ 16K ohm	0.533 ohm ~ 10.666K ohm	0.533 ohm ~ 10.666K ohm	0.533 ohm ~ 10.666K ohm	0.533 ohm ~ 10.666K ohm	
UPS Back-Up Function(CC,LIN,CR,CP)							
UVP (VTH)	50~350Vrms / 500Vdc						
UPS Back-Up Time	1~99999 Sec. (>27H)						
Battery Discharge Function(CC,LIN,CR,CP)							
UVP (VTH)	50~350Vrms / 500Vdc						
Battery Discharge Time	1~99999 Sec. (>27H)						
UPS Transfer Time							
Current Range	0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A	
UVP (VTH)	2.5V						
Time range	0.15mS~999.99mS						
Fuse Test Mode							
Max. Current	Turbo OFF 75Arms Turbo ON 150Arms (x2) *3	75Arms 150Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	
Trip & Non-Trip Time	Turbo OFF Turbo ON	0.1~9999.9sec. 0.1~1.0sec. ±0.003 Sec.					
Meas. Accuracy	±0.003 Sec.						
Repeat Cycle	0~255						
Short/OPP/OCF Test Function							
Short Time	Turbo OFF Turbo ON	0.1S ~ 10Sec. Or Cont. 0.1S ~ 1Sec					
OPP/OCF Step Time	Turbo OFF Turbo ON	100ms 100ms, up to 10 Steps					
OCF Istop	Turbo OFF Turbo ON	56Arms 112Arms	75Arms 150Arms	112.5Arms 225Arms	112.5Arms 225Arms	112.5Arms 225Arms	
OPP Pstop	Turbo OFF Turbo ON	5600W 11200W	7500W 15000W	11250W 22500W	15000W 37500W	22500W 45000W	
Programmable Inrush Current Simulation: Istart - Istop / Tsep							
Istart, Inrush Start Current	0~112A	0~150A	0~225A	0~225A	0~225A	0~225A	
Inrush Step Time	0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A	
Istop, Inrush Stop Current	0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A	
Programmable Surge Current Simulation: S1/T1 - S2/T2 - S3/T3							
S1 and S2 Current	0~112A	0~150A	0~225A	0~225A	0~225A	0~225A	
T1 and T2 Time	0.01S~0.5Sec.						
S3 Current	0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A	
T3 Time	0.01S ~ 9.99Sec. Or Cont.						
MEASUREMENTS							
VOLTAGE READBACK A METER							
Range	500V						
Resolution	0.01V						
Accuracy	±0.05% of (reading + range)						
Parameter	Vrms,V Max/Min,+/ -Vpk						
CURRENT READBACK A METER							
Range	28Arms/56Arms	37.5Arms/75Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms	
Resolution	0.6mA/1.2mA	0.8mA/1.6mA	1.2mA/2.4mA	1.2mA/2.4mA	1.2mA/2.4mA	1.2mA/2.4mA	
Accuracy	±0.1% of (reading + range) @ 50/60Hz						
Parameter	I rms,I Max/Min,+/ -Ipk						
WATT READBACK W METER							
Range	5600W	7500W	11250W	15000W	18750W	22500W	
Resolution	0.1W	0.125W	0.1875W	0.25W	0.3125W	0.375W	
Accuracy	±0.2% of (reading + range) @ 50/60Hz ; ±0.4% of (reading + range)						
VA METER	VrmsxArms Correspond To Vrms and Arms						
Power Factor METER							
Range	+/- 0.000~1.000						
Accuracy	±(0.002±(0.001/PPF)*F)						
Frequency METER(V)							
Range	DC,40~440Hz						
Accuracy	0.1%						
Other Parameter METER	VA, VAR, CF, I, Ipeak, I max., I min. Vmax, Vmin, IHD, VHD, ITHD, VTHD						
OTHERS							
Start up Loading	Yes , Power on loading during Inverter / UPS start up						
Load ON / OFF Angle	0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading						
Half Cycle and SCR/TRIAC Loading	Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed						
Master/Slave (3 Phase or Parallel Application)	Yes, 1 master and upto 7 slave unit						
External Programming Input (OPTION)	F.S / 10Vdc, Resolution 0.1V						
External SYNC Input	TTL						
Vmonitor (Isolated)	±500V / ±10V						
Imonitor (Isolated)	±168Apk / ±10Vpk	±225Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk	
Interface (OPTION)	GPIB ; RS-232 ; LAN ; USB						
MAX. Power Consumption	270VA	270VA	390VA	510VA	630VA	750VA	
Operation Temperature *2	0 ~ 40 °C						
Current of Input Impedance(mA)@50/60Hz ; @ 400Hz	-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)	458 x 480 x 590 mm	458 x 480 x 590 mm	636 x 480 x 590 mm	814 x 480 x 590 mm	1283 x 600 x 600 mm	1283 x 600 x 600 mm	
Weight	58 kg	70 kg	105kg	140kg	260kg	295kg	

*1 ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Ω
*2 Operating temperature range is 0~40℃, all specification apply for 25℃±5℃, Except as noted
*3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCF/OPP test function

* All specifications apply for 50/60Hz.
* All specifications subject to change without notice.

AC & DC Electronic Load

SPECIFICATIONS

MODEL	AEL-5006-425-56		AEL-5008-425-75		AEL-5012-425-112.5		AEL-5015-425-112.5		AEL-5019-425-112.5		AEL-5023-425-112.5	
Power (W)	5600 W		7500 W		11250W		15000 W		18750W		22500W	
Current(Ampere)	56 Arms / 168Apeak		75 Arms / 225Apeak		112.5 Arms / 337.5Apeak		112.5 Arms / 337.5Apeak		112.5 Arms / 337.5Apeak		112.5 Arms / 337.5Apeak	
Voltage(Volt)	50-425Vrms / 600Vdc											
FREQUENCY Range	DC,40-440Hz(CC,CP Mode) , DC-440Hz(LIN,CR,CV Mode)											
PROTECTIONS												
Over Power Protection	≊ 5880Wrms or Programmable		≊ 7875Wrms or Programmable		≊11812.5Wrms or Programmable		≊15750Wrms or Programmable		≊19687.5Wrms or Programmable		≊23625Wrms or Programmable	
Over Current Protection	≊ 58.8 Arms, or Programmable		≊ 78.75 Arms, or Programmable		≊ 118.125 Arms or Programmable		≊ 118.125 Arms or Programmable		≊ 118.125 Arms or Programmable		≊ 118.125 Arms or Programmable	
Over Voltage Protection	≊ 446.25 Vrms/630Vdc											
Over Temp. Protection	Yes											
OPERATION MODE												
Constant Current Mode for Sine-Wave												
Range	0-56A		0-75A		0-112.5A		0-112.5A		0-112.5A		0-112.5A	
Resolution	1mA/16bits		1.25mA/16bits		1.875mA/16bits		1.875mA/16bits		1.875mA/16bits		1.875mA/16bits	
Accuracy	± (0.1% of setting + 0.2% of range) @ 50/60Hz											
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave												
Range	0-56A		0-75A		0-112.5A		0-112.5A		0-112.5A		0-112.5A	
Resolution	1mA/16bits		1.25mA/16bits		1.875mA/16bits		1.875mA/16bits		1.875mA/16bits		1.875mA/16bits	
Accuracy	± (0.1% of setting + 0.2% of range) @ 50/60Hz											
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 ohm ~ 10.666K ohm		0.533 ohm ~ 10.666K ohm	
Resolution*1	0.016666mS/16bits		0.020832mS/16bits		0.031248mS/16bits		0.031248mS/16bits		0.031248mS/16bits		0.031248mS/16bits	
Accuracy	±0.2% of (setting + range) @ 50/60Hz											
Constant Voltage Mode												
Range	50-425Vrms / 600Vdc											
Resolution	0.1V											
Accuracy	±0.2% of (setting + range) @ 50/60Hz											
Constant Power Mode												
Range	5600W		7500W		11250W		15000 W		18750W		22500W	
Resolution	0.1W		0.1W		1W		1W		1W		1W	
Accuracy	±0.2% of (setting + range) @ 50/60Hz											
CREST FACTOR (CC & CP MODE ONLY)												
Range	√2-5											
Resolution	0.1											
Accuracy	(0.5% / I rms) + 1% F.S.											
POWER FACTOR (CC & CP MODE ONLY)												
Range	0-1 Lag or Lead											
Resolution	0.01											
Accuracy	1%F.S.											
TEST MODE												
UPS Efficient Measurement												
Operating Frequency	Non-Linear Mode											
Current Range	0-56A		0-75A		0-112.5A		0-112.5A		0-112.5A		0-112.5A	
PF Range	0-1											
Measuring Efficiency For PV Systems, Power Conditioners for THD 80%												
Operating Frequency	Resistive + Non-Linear Mode											
Current Range	0-56A		0-75A		0-112.5A		0-112.5A		0-112.5A		0-112.5A	
Resistive Range	1 ohm ~ 20K ohm		0.8 ohm ~ 16K ohm		0.533 ohm ~ 10.666K ohm		0.533 ohm ~ 10.666K ohm		0.533 ohm ~ 10.666K ohm		0.533 ohm ~ 10.666K ohm	
UPS Back-Up Function(CC,LIN,CR,CP)												
UVP (VTH)	50-425Vrms / 600Vdc											
UPS Back-Up Time	1-99999 Sec. (≈27H)											
Battery Discharge Function(CC,LIN,CR,CP)												
UVP (VTH)	50-425Vrms / 600Vdc											
Battery Discharge Time	1-99999 Sec. (≈27H)											
UPS Transfer Time												
Current Range	0-56A		0-75A		0-112.5A		0-112.5A		0-112.5A		0-112.5A	
UVP (VTH)	2.5V											
Time range	0.15mS-999.99mS											
Fuse Test Mode												
Max. Current	Turbo OFF Turbo ON	75Arms 150Arms (x2) *3	75Arms 150Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	112.5Arms 225Arms (x2) *3	
Trip & Non-Trip Time	Turbo OFF Turbo ON											
Meas. Accuracy	0.1-9999.9sec.											
Repeat Cycle	±0.003 Sec.											
Short/OPP/OCF Test Function												
Short Time	Turbo OFF Turbo ON				0.1S ~ 10Sec. Or Cont.							
OPP/OCF Step Time	Turbo OFF Turbo ON				0.1S ~ 1Sec							
OCF Istop	Turbo OFF Turbo ON	56Arms 112Arms	75Arms 150Arms	112.5Arms 225Arms	112.5Arms 225Arms	112.5Arms 225Arms	112.5Arms 225Arms	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					
Programmable Inrush Current Simulation: Istart - Istop / Tsep												
Istart, Inrush Start Current	0-112A		0-150A		0-225A		0-225A		0-225A		0-225A	
Inrush Step Time	0-56A		0-75A		0-112.5A		0-112.5A		0-112.5A		0-112.5A	
Istop, Inrush Stop Current	0-56A		0-75A		0-112.5A		0-112.5A		0-112.5A		0-112.5A	
Programmable Surge Current Simulation: S1/T1 - S2/T2 - S3/T3												
S1 and S2 Current	0-112A		0-150A		0-225A		0-225A		0-225A		0-225A	
T1 and T2 Time	0.01S-0.55sec.											
S3 Current	0-56A		0-75A		0-112.5A		0-112.5A		0-112.5A		0-112.5A	
T3 Time	0.01S - 9.99Sec. Or Cont.											
MEASUREMENTS												
VOLTAGE READBACK A METER												
Range	600V											
Resolution	0.01V											
Accuracy	±0.05% of (reading + range)											
Parameter	Vrms,V Max/Min,+/-Vpk											
CURRENT READBACK A METER												
Range	28Arms/56Arms		37.5Arms/75Arms		56.25Arms/112.5Arms		56.25Arms/112.5Arms		56.25Arms/112.5Arms		56.25Arms/112.5Arms	
Resolution	0.6mA/1.2mA		0.8mA/1.6mA		1.2mA/2.4mA		1.2mA/2.4mA		1.2mA/2.4mA		1.2mA/2.4mA	
Accuracy	±0.1% of (reading + range) @ 50/60Hz											
Parameter	I rms,I Max/Min,+/-Ipk											
WATT READBACK W METER												
Range	5600W		7500W		11250W		15000W		18750W		22500W	
Resolution	0.1W		0.125W		0.1875W		0.25W		0.3125W		0.375W	
Accuracy	±0.2% of (reading + range) @ 50/60Hz , ±0.4% of (reading + range)											
VA METER												
Power Factor METER												
Range	VrmsxArms Correspond To Vrms and Arms											
Accuracy	+/- 0.000-1.000											
Frequency METER(V)	±(0.002±(0.001 / PF)*F)											
Range	DC,40-440Hz											
Accuracy	0.1%											
Other Parameter METER												
VA, VAR, CF, I, Ipeak, I max., I min. Vmax., Vmin., IHD, VHD, ITHD, VTHD												
OTHERS												
Start up Loading	Yes , Power on loading during Inverter / UPS start up											
Load ON / OFF Angle	0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading											
Half Cycle and SCR/TRIAC Loading	Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed											
Master/Slave (3 Phase or Parallel Application)	Yes, 1 master and upto 7 slave unit											
External Programming Input (OPTION)	F.S / 10Vdc, Resolution 0.1V											
External SYNC Input	TTT											
Vmonitor (Isolated)	±600V / ±10V											
Imonitor (Isolated)	±168Apk / ±10Vpk		±225Apk / ±10Vpk		±337.5Apk / ±10Vpk		±337.5Apk / ±10Vpk		±337.5Apk / ±10Vpk		±337.5Apk / ±10Vpk	
Interface (OPTION)	GPIB ; RS-232 ; LAN ; USB											
MAX. Power Consumption	270VA		270VA		390VA		510VA		630VA		750VA	
Operation Temperature *2	0 ~ 40 °C											
Current of Input Impedance(mA)@50/60Hz ; @ 400Hz	-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)	458 x 480 x 590 mm		458 x 480 x 590 mm		636 x 480 x 590 mm		814 x 480 x 590 mm		1283 x 600 x 600 mm		1283 x 600 x 600 mm	
Weight	58 kg		70 kg		105kg		140kg		260kg		295kg	

*1 ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Q

*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/OCF/OPP test function

* All specifications apply for 50/60Hz.

* All specifications subject to change without notice.

AC & DC Electronic Load

SPECIFICATIONS				
MODEL		AEL-5003-480-18.75		AEL-5004-480-28
Power (W)		2800W		3750 W
Current(Ampere)		18.75 Arms / 56.25Apeak		28 Arms / 84Apeak
Voltage(Volt)		50-480Vrms / 700Vdc		
FREQUENCY Range		DC,40-70Hz(CC,CP Mode) , DC-70Hz(LIN,CR,CV Mode)		
PROTECTIONS				
Over Power Protection		≈2940Wrms or Programmable		≈ 3937.5Wrms or Programmable
Over Current Protection		≈ 19.687 Arms or Programmable		≈ 29.4 Arms or Programmable
Over Voltage Protection		≈ 504Vrms / 735Vdc		
Over Temp. Protection		Yes		
OPERATION MODE				
Constant Current Mode for Sine-Wave				
Range		0-18.75A		0-28A
Resolution		0.3125mA/16bits		0.5mA/16bits
Accuracy		± (0.1% of setting + 0.2% of range) @ 50/60Hz		
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave				
Range		0-18.75A		0-28A
Resolution		0.3125mA/16bits		0.5mA/16bits
Accuracy		± (0.1% of setting + 0.2% of range) @ 50/60Hz		
Constant Resistance Mode				
Range		4 ohm ~ 80K ohm		2.5 ohm ~ 50K ohm
Resolution*1		0.004166mS/16bits		0.006666mS/16bits
Accuracy		±0.2% of (setting + range) @ 50/60Hz		
Constant Voltage Mode				
Range		50-480Vrms / 700Vdc		
Resolution		0.0125V		
Accuracy		±(0.1% of setting + 0.1% of range)		
Constant Power Mode				
Range		2800W		3750W
Resolution		0.1W		0.1W
Accuracy		±(0.1% of setting + 0.1% of range)		
CREST FACTOR (CC & CP MODE ONLY)				
Range		√2-5		
Resolution		0.1		
Accuracy		(0.5% / Irms) + 1%F.S.		
POWER FACTOR (CC & CP MODE ONLY)				
Range		0-1 Lag or Lead		
Resolution		0.01		
Accuracy		1% F.S.		
TEST MODE				
UPS Efficient Measurement		Non-Linear Mode		
Operating Frequency		Auto ; 40-70Hz		
Current Range		0-18.75A	0-28A	
PF Range		0-1		
Measuring Efficiency For PV Systems, Power Conditioners for THD 80%		Resistive + Non-Linear Mode		
Operating Frequency		Auto ; 40-70Hz		
Current Range		0-18.75A	0-28A	
Resistive Range		4 ohm ~ 80K ohm	2.5 ohm ~ 50K ohm	
UPS Back-Up Function(CC,LIN,CR,CP)				
UVP (VTH)		50-480Vrms / 700Vdc		
UPS Back-Up Time		1-99999 Sec. (>27H)		
Battery Discharge Function(CC,LIN,CR,CP)				
UVP (VTH)		50-480Vrms / 700Vdc		
Battery Discharge Time		1-99999 Sec. (>27H)		
UPS Transfer Time				
Current Range		0-18.75A	0-28A	
UVP (VTH)		2.5V		
Time range		0.15mS-999.99mS		
Fuse Test Mode				
Max. Current	Turbo OFF	18.75Arms	28.0Arms	
	Turbo ON	37.5Arms (x2) *3	56.0Arms (x2) *3	
Trip & Non-Trip Time	Turbo OFF	0.1-9999.9sec.		
	Turbo ON	0.1-1.0sec.		
Meas. Accuracy		±0.003 Sec.		
Repeat Cycle		0-255		
Short/OPP/OCF Test Function				
Short Time	Turbo OFF	0.1S ~ 10sec. Or Cont.		
	Turbo ON	0.1S ~ 1Sec		
OPP/OCF Step Time	Turbo OFF	100ms		
	Turbo ON	100ms, up to 10 Steps		
OCP Istop	Turbo OFF	18.75Arms	28.0Arms	
	Turbo ON	37.5Arms	56.0Arms	
OPP Pstop	Turbo OFF	2800W	3750W	
	Turbo ON	5600W	7500W	
Programmable Inrush Current Simulation: Istart / Tsep				
Istart, Inrush Start Current		0-37.5A	0-56A	
Inrush Stop Time		0-18.75A	0-28A	
Istop, Inrush Stop Current		0-18.75A	0-28A	
Programmable Surge Current Simulation: S1/T1 - S2/T2 - S3/T3				
S1 and S2 Current		0-37.5A	0-56A	
T1 and T2 Time		0-18.75A	0-28A	
S3 Current		0-18.75A	0-28A	
T3 Time				
MEASUREMENTS				
VOLTAGE READBACK V METER				
Range		700V		
Resolution		0.0125V		
Accuracy		±0.05% of (reading + range)		
Parameter		Vrms,V Max/Min,±Vpk		
CURRENT READBACK A METER				
Range		9.375Arms/18.75Arms	14Arms/28Arms	
Resolution		0.2mA/0.4mA	0.3mA/0.6mA	
Accuracy		±0.05% of (reading + range) @ 50/60Hz		
Parameter		Irms,I Max/Min,±Ipk		
WATT READBACK W METER				
Range		2800W	3750W	
Resolution		0.05W	0.0625W	
Accuracy		±0.1% of (reading + range)		
VA METER		VrmsxArms Correspond To Vrms and Arms		
Power Factor METER				
Range		+/- 0.000-1.000		
Accuracy		±(0.002±(0.001/PF)*F)		
Frequency METER(V)				
Range		DC,40-70Hz		
Accuracy		0.1%		
Other Parameter METER				
VA, VAR, CF, J, Ipeak, Imax, Imin, Vmax, Vmin, IHD, VHD, ITHD, VTHD				
OTHERS				
Start up Loading		Yes , Power on loading during Inverter / UPS start up		
Load ON / OFF Angle		0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading		
Half Cycle and SCR/TRIAC Loading		Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed		
Master/Slave (3 Phase or Parallel Application)		Yes, 1 master and upto 7 slave units		
External Programming Input (OPTION)		F.5 / 10Vdc, Resolution 0.1V		
External SYNC Input		TTL		
Vmonitor (Isolated)		±700V / ±10V		
Imonitor (Isolated)		±56.25Apk / ±10Vpk	±84Apk / ±10Vpk	
Interface (OPTION)		GPIB ; RS-232 ; LAN ; USB		
MAX. Power Consumption		150VA		
Operation Temperature *2		0 ~ 40 °C		
Current of Input Impedance(mA)@50/60Hz ; @ 400Hz		~V*0.3 ; ~V*2.2	~V*0.4 ; ~V*2.95	
Dimension(H x W x D)		177 x 440 x 558 mm	177 x 440 x 558 mm	
Weight		27.5Kg	33.5Kg	

*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/OCF/OPP test function

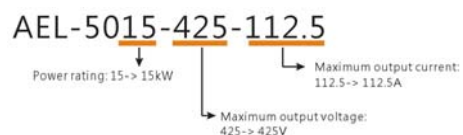
* All specifications apply for 50/60Hz.

* All specifications subject to change without notice.

AC & DC Electronic Load

ORDER INFORMATION

AEL-5002-350-18.75	350V/18.75A/1875W	AC & DC Electronic Load
AEL-5003-350-28	350V/28A/2800W	AC & DC Electronic Load
AEL-5004-350-37.5	350V/37.5A/3750W	AC & DC Electronic Load
AEL-5006-350-56	350V/56A/5600W	AC & DC Electronic Load
AEL-5008-350-75	350V/75A/7500W	AC & DC Electronic Load
AEL-5012-350-112.5	350V/112.5A/11250W	AC & DC Electronic Load
AEL-5015-350-112.5	350V/112.5A/15000W	AC & DC Electronic Load
AEL-5019-350-112.5	350V/112.5A/18750W	AC & DC Electronic Load
AEL-5023-350-112.5	350V/112.5A/22500W	AC & DC Electronic Load
AEL-5002-425-18.75	425V/18.75A/1875W	AC & DC Electronic Load
AEL-5003-425-28	425V /28A/2800W	AC & DC Electronic Load
AEL-5004-425-37.5	425V /37.5A/3750W	AC & DC Electronic Load
AEL-5006-425-56	425V /56A/5600W	AC & DC Electronic Load
AEL-5008-425-75	425V /75A/7500W	AC & DC Electronic Load
AEL-5012-425-112.5	425V /112.5A/11250W	AC & DC Electronic Load
AEL-5015-425-112.5	425V /112.5A/15000W	AC & DC Electronic Load
AEL-5019-425-112.5	425V /112.5A/18750W	AC & DC Electronic Load
AEL-5023-425-112.5	425V /112.5A/22500W	AC & DC Electronic Load
AEL-5003-480-18.75	480V/18.75A/2800W	AC & DC Electronic Load
AEL-5004-480-28	480V/28A/3750W	AC & DC Electronic Load



OPTIONAL ACCESSORIES

PEL-022 GPIB Card	PEL-024 LAN Card
PEL-023 RS-232 Card	PEL-025 USB Card

Global Headquarters

GOOD WILL INSTRUMENT CO., LTD.

T +886-2-2268-0389 F +886-2-2268-0639

China Subsidiary

GOOD WILL INSTRUMENT (SUZHOU) CO., LTD.

T +86-512-6661-7177 F +86-512-6661-7277

Malaysia Subsidiary

GOOD WILL INSTRUMENT (SEA) SDN. BHD.

T +604-6111122 F +604-6115225

Europe Subsidiary

GOOD WILL INSTRUMENT EURO B.V.

T +31 (0)40-2557790 F +31 (0)40-2541194

U.S.A. Subsidiary

INSTEK AMERICA CORP.

T +1-909-399-3535 F +1-909-399-0819

Japan Subsidiary

TEXIO TECHNOLOGY CORPORATION.

T +81-45-620-2305 F +81-45-534-7181

Korea Subsidiary

GOOD WILL INSTRUMENT KOREA CO., LTD.

T +82-2-3439-2205 F +82-2-3439-2207

India Subsidiary

GW INSTEK INDIA LLP.

T +91-80-6811-0600 F +91-80-6811-0626

GW INSTEK

Simply Reliable



Website



Facebook



LinkedIn