31000 Series© Programmable AC Power Supply

FEATURES:

- **Output Rating:**
  Power: 500VA (31005), 1000VA (31010) 1500VA (31015), 2000VA (31020), 4000VA (31040)
  Voltage range: 0-150V/0-300V/Auto
- **Frequency: 15Hz – 1000Hz**
- **Compact size and weight attributable to advance PWM technology**
- **Built-in PFC, provide input power factor over 0.98 (full load)**
- **AC+DC output mode for voltage DC offset simulation**
- **Programmable slew rate setting for changing voltage and frequency**
- **Programmable voltage, current limit**
- **One-key recall for nine different voltages and frequencies**
- **Low output impedance for testing IEC 61000-3-2 (31040)**
- **Comprehensive measurement capability, V, lrms, lpk, Inrush, P, Q, S, PF, CF of current and etc.**
- **High output current crest factor, ideal for inrush current testing**
- **Turn on, turn off phase angle control**
- **TTL signal which indicates ON/OFF**
- **Three units combined to three-phase power output**
- **Easy-use software for operation and ON/OFF test**
- **Optional analog programming interface**
- **Optional GPIB and RS-232C interface**
- **Full protection: OP, OC, OV and OT protection**

Introduction

The QuadTech, Inc. programmable AC Power Source 31000 series© delivers pure, instrument grade, AC power at very low cost. The 31000 series supplies the output voltage from 0 to 300V AC and frequency from 15 to 1000Hz. It is suitable for commercial, avionics and military applications from bench-top testing to mass production.

The 31000 series generates very clean AC output with distortion less than 0.3% at 50/60Hz. With the state-of-the-art PWM technology and power factor correction circuit, the 31000 series yields higher efficiency and delivers more output power. The 31000 series is capable of delivering up to six times peak current compared to its maximum rated current that makes it ideal for inrush current testing.

Description

The AC+DC modes extend the applications not only pure AC voltage, but for a DC component as well, for testing DC offset in the laboratory. Users can also use an optional DC noise filter to get low noise and good stability DC voltage for testing. Applying the advanced DSP technology, the 31000 series is able to provide precision and high-speed measurements such as RMS voltage, RMS current, true power, frequency, power factor and current crest factor.

The 31000 series also provides an external analog input to amplify the analog signal from the arbitrary signal generator. Thus, it is capable of simulating the unique waveform which is observed in the field. Users can also control the amplitude of output voltage by a DC level. It is suitable to integrate the QuadTech, Inc. AC source 31000 series into the users' system.

For convenience sake, the 31000 series offers versatile front panel operations with LCD display and rotary knob. Users may also control the 31000 series AC source remotely via GPIB, RS232C or APG (Analog Programming) interface. Users can find LabView driver in NI's website for programming.

The power-on self-diagnosis routine along with the full protections against OPP, OCP, OVP and OTP ensure the quality and reliability for the most demanding engineering tests and ATS applications.

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31000 Series Specifications

	31005	31010	31015	31020	31040
Power/Phase					
Output Phase	1	1	1	1	1
Output Rating-AC	500VA	1000VA	1500VA	2000VA	4000VA
Voltage					
Range/Phase	150V/300V/Auto	150V/300V/Auto	150V/300V/Auto	150V/300V/Auto	150V/300VAuto
Accuracy	0.2%+0.2%F.S.	0.2%+0.2%F.S.	0.2%+0.2%F.S.	0.2%+0.2%F.S.	0.2%+0.2%F.S.
Resolution	0.1V	0.1V	0.1V	0.1V	0.1V
Distortion*1	0.3% @ 50/60Hz1%, 15-1KHz (Typical)	0.3% @ 50/60Hz1%, 15-1KHz (Typical)	0.3% @ 50/60Hz1%, 15-1KHz (Typical)	0.3% @ 50/60Hz1%, 15-1KHz (Typical)	0.3% @ 50/60Hz1%, 15-1KHz (Typical)
Line Regulation	0.1%	0.1%	0.1%	0.1%	0.1%
Load Regulation *2	0.2%	0.2%	0.2%	0.2%	0.2%
Max. Current/Phase					
R.m.s.	4A/2A (150V/300V)	8A/4A (150V/300V)	12A/6A (150V/300V)	16A/8A (150V/300V)	32A/20A (150V/300V)
Peak	24A/12A (150V/300V)	48A/24A (150V/300V)	72A/36A (150V/300V)	96A/48A (150V/300V)	192A/96A (50V/300V)
Frequency					
Range	DC,15-1KHz	DC,15-1KHz	DC,15-1KHz	DC,15-1KHz	DC,15-1KHz
Accuracy	0.15%	0.15%	0.15%	0.15%	0.15%
Output Rating-DC					
Power	250W	500W	750W	1000W	2000W
Voltage	212V/424V	212V/424V	212V/424V	212V/424V	212V/424V
Current (per phase)	2A/1A (212V/424V)	4A/2A (212V/424V)	6A/3A (212V/424V)	8A/4A (212V/424V)	16A/8A (212V/424V)
Input Rating					
Voltage Range	90-250V, 1ø	90-250V, 1ø	90-250V, 1ø	90-250V, 1ø	190-250V, 3ø
Frequency Range	47-63Hz	47-63Hz	47-63Hz	47-63Hz	47-63Hz
Current (per phase)	10A Max. @ 90V	18A Max. @ 90V	22A Max. @ 90V	28A Max. @ 90V	14A Max. @ 190V
Power Factor *3	0.97 Min.	0.97 Min.	0.98 Min.	0.98 Min.	0.98 Min.
Measurement					
Voltage					
Range/Phase	150V/300V	150V/300V	150V/300V	150V/300V	150V/300V
Accuracy	0.2%+0.2%F.S.	0.2%+0.2%F.S.	0.2%+0.2%F.S.	0.2%+0.2%F.S.	0.2%+0.2%F.S.
Resolution	0.1V	0.1V	0.1V	0.1V	0.1V
Current					
Range(peak)	24A	48A	72A	96A	192A
Accuracy(r.m.s.)	0.4%+0.3%F.S.	0.4%+0.3%F.S.	0.4%+0.3%F.S.	0.4%+0.3%F.S.	0.4%+0.3%F.S.
Accuracy(peak)	0.4%+0.6%F.S.	0.4%+0.6%F.S.	0.4%+0.6%F.S.	0.4%+0.6%F.S.	0.4%+0.6%F.S.
Power					
Accuracy	0.4%+0.4%F.S.	0.4%+0.4%F.S.	0.4%+0.4%F.S.	0.4%+0.4%F.S.	0.4%+0.4%F.S.
Resolution	0.1W	0.1W	0.1W	0.1W	0.1W
Others					
Interface	GPIB,RS-232(Optional)	GPIB,RS-232(Optional)	GPIB,RS-232(Optional)	GPIB,RS-232(Optional)	GPIB,RS-232(Optional)
Temperature					
Operating	0~40˚C	0~40˚C	0~40˚C	0 ~ 40˚C	0 ~ 40˚C
Storage	-40~+85˚C	-40~+85˚C	-40~+85˚C	-40~+85˚C	-40~+85˚C
Safety & EMC	CE (Include EMC & LVD)	CE (Include EMC & LVD)	CE (Include EMC & LVD)	CE (Include EMC & LVD)	CE (Include EMC & LVD)
Noise Level at Operator Level	<65dB(A)	<65dB(A)	<65dB(A)	<65dB(A)	<65dB(A)
Dimensions(WxHxD)	482 x 132.6 x 570mm	482 x 132.6 x 570mm	482 x 132.6 x 570mm	482 x 132.6 x 570mm	482 x 265.9 x 570 mm
Weight	20 kg	20 kg	21 kg	21 kg	36 kg

All specifications are subject to change without notice. *Note 1: Maximum distortion is tested on output 125VAC (150V RANGE) and 250VAC (300V RANGE) with maximum current to linear load. Note 2: Load regulation is tested with sinewave and remote sense. Note 3: Input power factor is tested on input 220V, full load condition.*

Ordering Information

31005: Programmable AC Source 0~300V, 15~1KHz / 500VA **31010:** Programmable AC Source 0~300V, 15~1KHz / 1KVA **31015:** Programmable AC Source 0~300V, 15~1KHz / 1.5KVA **31020:** Programmable AC Source 0~300V, 15~1KHz / 2KVA **31040:** Programmable AC Source 0~300V, 15~1KHz / 4KVA **A615001:** Remote Interface Board (External V Input, RS-232 Interface, GPIB Interface) **A610004:** Universal Socket Center **31000**: Softpanel for Model 31000 series **A615008:** DC Noise Filter (Max.16A) for Model 31000 series **A600009:** GPIB Cable (200cm) **A600010:** GPIB Cable (60cm) **W38 023500:** 35cm Sync Cable

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