

FEATURES:

- Power Rating:
31120/31120A: 12KVA
31180/31180A: 18KVA
- Voltage Range: 0 - 150V/0 - 300V/Auto
- Frequency: DC, 15Hz - 1500Hz
- 1-phase or
3-phase output selectable
- Programmable slew rate setting for
changing voltage and frequency
- Programmable voltage, current limit
- High output current crest factor, ideal
for inrush current testing
- Turn-on, turn-off phase angle control
- TTL signal which indicates output transient
- LIST, PULSE, STEP mode functions for
testing power line disturbance (PLD)
simulation
- Comprehensive measurement capability,
including current harmonics
- Analog programmable interface
- Remote interface: GPIB, RS 232C, USB
and Ethernet
- 31120A/31180A Transient Generator for
Waveform Synthesis



Models

31120/31120A/31180/31180A

Programmable AC Power Source

Introduction

The global AC power testing requirements demand a more sophisticated AC power source that is capable of simulating a wide range of AC line conditions. QuadTech, Inc's AC 31120/31180 series programmable AC source delivers the right solution to simulate all kinds of normal/abnormal input conditions and measure the critical characteristics of products under test.

Using the state-of-the-art PWM technology, models 31120A/31180A can deliver the maximum power for the output up to 300Vac and a frequency between 15Hz to 1500Hz. The AC+DC modes extend the applications not only for pure AC voltage, but for a DC component as well, testing DC offset in the laboratory. They are capable of delivering up to four times the peak current compared to its maximum rated current that makes it ideal for inrush current testing. All models can generate very clean sine waveform output with typical distortion less than 0.5%@50/60Hz.

Description

The QuadTech, Inc. 31120/31180 series is able to provide precision measurements such as RMS voltage, RMS current, true power, power factor, current crest factor and so on. All models provide easy operation through the front LCD panel and keypad or remote control via GPIB(IEEE488.2), RS-232, USB, Ethernet interface.

The 31120A/31180A add an additional transient generator to provide waveform synthesis and programmable source impedance.



For more detailed information on specifications, pricing and special purchase, rent and lease options, contact us at:



www.quadtech.com

800-253-1230

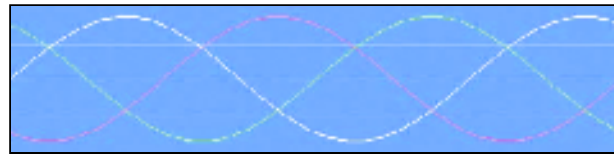
1. ADVANCED PWM TECHNOLOGY

The QuadTech, Inc. AC power source 31120/31180 series is able to provide the highest power density by its superior high speed PWM mode design. The modularized design offers reliable power stages, as well as making it convenient for maintenance. With no transformer at the output power stage, it not only reduces the output impedance, but also allows the 31000 series to program a DC component for simulating AC voltage with DC offset conditions. It can test the unbalance input current for rectified load. Users can also use an optional DC noise filter to get low noise and good stability DC voltage for testing.



2. SINGLE-PHASE AND THREE PHASE OUTPUT

Models 31120/31180 are able to set 3-phase or 1-phase AC voltage output. Users can easily select the output mode manually or by remote control. It still can provide full output power capability without derating when the output is on 1-phase mode. It makes Models 31120/31180 flexible and suitable for a wide variety of field applications.



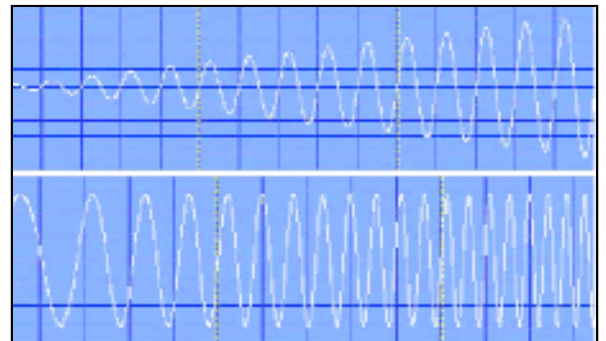
Phase Waveform Panel

3. SLEW RATE SETTING FOR VOLTAGE AND FREQUENCY

The QuadTech, Inc. 31120/31180 series allows users to set the slew rate of voltage and frequency. It will follow the slew rate to reach the final setting when the output voltage or frequency is changed. This function can help the user to verify the operation range of input power. For example, it sweeps the voltage gradually from 90V to 264V, instead of only checking several points like 90V, 115V 230V and 264V. Another example of application is, when power is on the UUT, users can raise the input voltage from 0V to reduce the inrush-current. This is used on driving a motor or power on multi-UUT.

4. COMPREHENSIVE MEASUREMENTS

The QuadTech, Inc. AC power source 31120/31180 series has a built-in, 16-bit measurement circuit and firmware utilities to measure the true RMS voltage, current, true power, VA(apparent power), VAR (reactive power), power factor, current crest factor, peak repetitive current and inrush current.

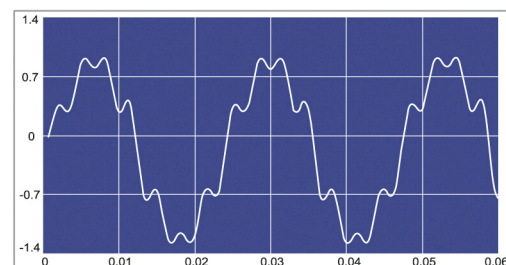


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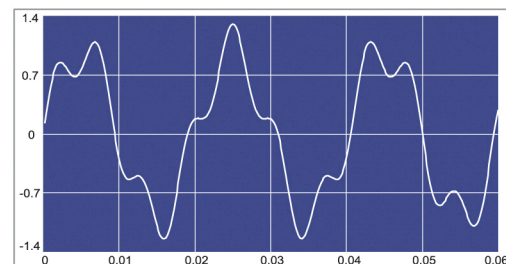
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5. DISTORTION WAVEFORM, HARMONICS, INTERHARMONICS SYNTHESIS (31120A/31180A)

Traditional types of AC sources only provide output voltage with sine waveform. This type of AC source is unable to meet and keep up with the latest test requirements for simulating the input voltage abnormal conditions with distortion waveforms. The WAVEFORM function on models 31120A/31180A, allows users to set square, clipped-sine wave and 30-stored distortion waveforms. Aside from that, IEC 61000-4-13 standard requires not only the harmonics waveform, but also interharmonics simulation.



Harmonic Waveform



Interharmonics Waveform

The model 31120A/31180A series allows users to composite integer up to 40 orders of harmonic components based on 50Hz or 60Hz fundamentally. The output will be a periodic harmonics distortion waveform. It also provides a sweeping interharmonics function. This means, the fundamental frequency will incorporate with a frequency sweeping component between harmonic frequencies. The source will assist in finding the resonance or the weakest points of UUT. QuadTech's AC source 31120A/31180A series uses advanced DSP technology to synthesize the harmonic and interharmonics waveforms. Therefore, the source is capable of generating a periodic harmonic and non-periodic harmonic distorted waveform to perform IEC 61000-4-13 compliance test.

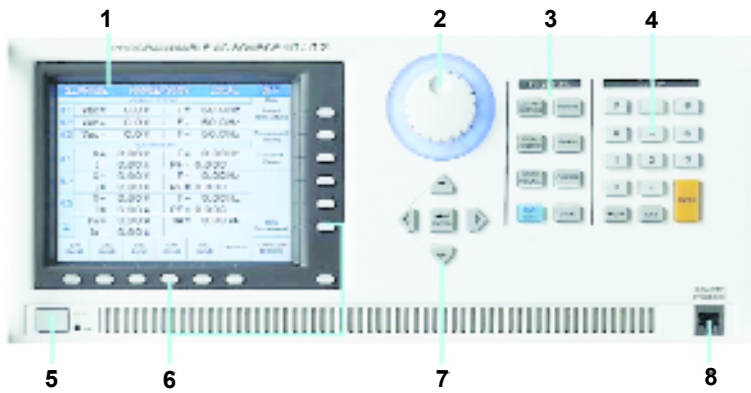
7. PROGRAMMABLE OUTPUT IMPEDANCE (31120A/31180A)

The QuadTech AC source 31120A/31180A series allows users to program output impedance. A current feedback control circuit makes the output voltage change with the load. This feature is suitable for IEC 61000-3-3 Flicker tests or other test conditions with particular output impedance requirements. The instrument provides users a convenient and cost-effective way to implement the reference impedance.

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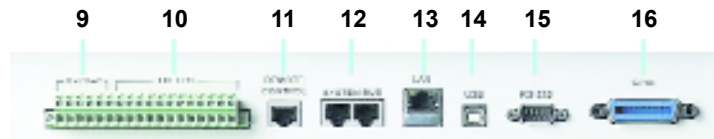
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FRONT PANEL OVERVIEW

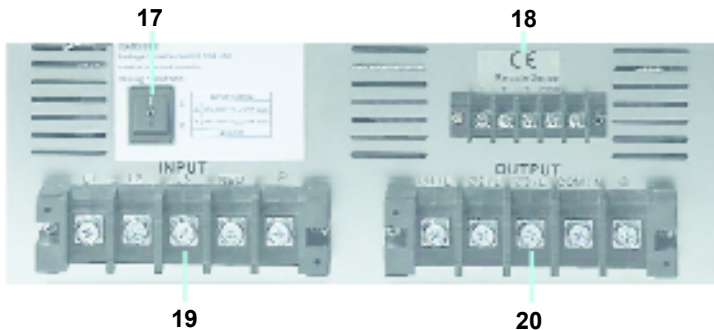


1. **LCD Display:** 1 2 3 4 5 6 inches graphic LCD display for settings and measurements read back
2. **Rotary Knob:** Use to adjust the voltage, frequency and parameters setting
3. **Function Key:** Hot keys for quick parameter setting
4. **Numeric Key:** For data setting
The soft-keys adjacent to the command block display on the LCD that provides users a menu driven interface to control the AC source operation
7. **Cursor Key:** For cursor movement
8. **Remote Control Port:** For optional remote controller

REAR PANEL OVERVIEW



9. **External V reference:** TTL I/O Signals for system integration
10. **Remote Control Port:** For optional remote controller
11. **System Bus**
12. **Master/Slave Connections**
13. **Ethernet Interface**
14. **USB Interface**
15. **RS-232 Interface**
16. **GPIB Interface**



17. **Y 3-phase connection selection**
18. **Remote Sense:** Use to compensate the line drop between AC source and testing point
19. **Input Terminal**
20. **Output Terminal**

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Models 31120/31120A/31180/31180A Specifications

Model	31120/31120A		31180/31180A
Output/Phase	1 or 3 selectable		
AC Output			
Power	12kVA Total / 4kVA per Phase		18kVA Total / 6kVA per Phase
Voltage			
Range	0~150V/0~300V, 0~140V/0~280V@>1000Hz		
Accuracy	0.2%+0.2%F.S.		
Resolution	0.1 V		
Distortion *1	0.3%@50/60Hz, 1%@15-1.5KHz, 2%@>1KHz		
Line regulation	0.1%		
Load regulation *2	0.2%		
Temp. coefficient	0.02% per degree from 25 C		
Max Current (1-phase mode)			
RMS	96A/48A		144A / 72A
Peak(CF=4)	384A/192A		576A / 288A
Max Current (each phase in 3-phase mode)			
RMS	32A/16A		48A/24A
Peak(CF=4)	128A/64A		192A/96A
Frequency			
Range	DC, 15-1.5KHz		
Accuracy	0.15%		
DC Output (1-phase mode)			
Power	6K W		9K W
Voltage	212V/424V		212V/424V
Current	48A/24A		72A/36A
DC Output (3-phase mode)			
Power	2K W		3K W
Voltage	212V/424V		212V/424V
Current	16A/8A		24A/2A
Input AC Power (each phase)			
AC type	3-phase, Delta or Y connecting		
Voltage range	190-250V (Delta: L-L, Y: L-N)		
Frequency range	47-63 Hz		
Max current	Delta: 80A Y: 70A		Delta: 120A Y: 90A
Measurement			
Voltage			
Range	150V/300V		
Accuracy	0.2%+0.2% range		
Resolution	0.1V		
Current (each phase)			
Range	128/32/8 A pk	3-range	192/48/12 Apk
Accuracy (rms)	0.4%+0.3% range		
Accuracy (peak)	0.4%+0.6% range		
Resolution	0.1 A		
Power			
Accuracy	0.4%+0.4% F.S		
Resolution	0.1 W		
Others			
Efficiency *3	0.75 (Typical)		
Dimension(HxWxD)	1163x546x700mm		1163x546x700mm
Weight	240 Kg		480 Kg
Protection	UVP, OCP, OPP, OTP, FAN		
Remote Interface	GPIB, RS-232, USB, Ethernet		
Temperature			
Operation	0 C-40 C		
Humidity	30%-90%		
Safety&EMC	CE		

*1: Maximum distortion is tested on output 125VAC (150V Range) (300V RANGE) with maximum current to linear load. *2: Load regulation is tested with sine wave and remote sense. *3: Efficiency is tested on input voltage 230V.

Ordering Information

31120: Programmable AC Source 0~300V, 15~1.5KHz / 12KVA, **31120A:** Programmable AC Source 0~300V, 15~1.5KHz / 12KVA, **31180:** Programmable AC Source 0~300V, 15~1.5KHz / 18kVA, **31180A:** Programmable AC Source 0~300V, 15~1.5KHz / 18kVA

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