

PROGRAMMABLE AC POWER SOURCE MODEL 61600 SERIES

Chroma Programmable AC Power Source 61600 series delivers pure, instrument grade AC power at very low cost. The 61600 series supplies the output voltage from 0 to 300VAC, and frequency from 15 to 1000Hz. It is suitable for commercial, avionics, and military applications from bench-top testing to mass production.

The 61600 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 61600 series yields higher efficiency and delivers more output power. The 61600 series is capable of delivering up to 6 times of peak current compared to its maximum rated current that makes it ideal for inrush current test.

The AC+DC modes extend the applications not only pure AC voltage but also DC component for testing DC offset in laboratory. Users also can use an optional DC noise filter to get low noise and good stability DC voltage for testing. Applying the advanced DSP technology, the 61600 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 61600 series also provides an external analog input to amplify the analog signal from arbitrary signal generator. Thus, it is capable of simulating the unique waveform which observed in the field. Users also can control the amplitude of output voltage by a DC level. It is suitable to integrate Chroma AC source 61600 series into users' system.

For convenience sake, the 61600 series offers versatile front panel operations with LCD display and rotary knob. Users may also control the 61600 series AC source remotely via GPIB, RS232 or APG (Analog Programming) interface. Users can find Labview driver in NI's web site 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.

Programmable AC Power Source

MODEL 61600 SERIES

Key Features:

- Output Rating :
 - Power : 500VA (61601), 1000VA (61602) 1500VA (61603), 2000VA (61604) 4000VA (61605)
- 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 9 different voltage and frequency
- Low output impedance for testing IEC 61000-3-2 (61605)
- Comprehensive measurement capability, V, Irms, Ipk, 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
- 3 units combined to 3-phase power output
- Easy-use software for operation and ON/OFF test
- Optional analog programming interface
- Optional GPIB and RS-232 interface
- Full protection: OP, OC, OV and OT protection



Chroma



SLEW RATE OF VOLTAGE AND FREQUENCY

Chroma Programmable AC Power Source 61600 Series use DSP technology to program voltage waveform. Users can change the voltage or frequency in only one step. Or users can set the slew rate to get a gradual increase or decrease of voltage and frequency. It can help users easily to test the power input range of their products, for example, 90V-264V/47Hz-63Hz.





ONE-KEY RECALL MODE

Chroma Programmable AC Power Source 61600 Series allows users to save 9 various voltage and frequency settings. Users can recall the value by only pressing "1" to "9" key. It can help testers or manufacture operators easily to change voltage or frequency for some fixed test conditions.

CHOICE $1 - 9$,	PRESS (ENTER)	TO SAVE MAIN PAGE
1. $Vac = 90.0$	F = 60.00	Vdc = 0.0
2. $Vac = 115.0$	F = 60.00	Vdc = 0.0
3. Vac = 230.0	F = 50.00	Vdc = 0.0

COMPREHENSIVE MEASUREMENTS

Chroma Programmable AC Power Source 61600 Series has built in a 16-bit precision measurement circuit and firmware utilities to measure the RMS voltage, RMS current, true power, power factor, peak repetitive current, inrush current, current crest factor, VA (apparent power), and VAR (reactive power). These comprehensive measurements make Chroma Programmable AC Power Source 61600 Series not only a power source but also a power meter.

Vac = 110.0	F = 60.00	Vdc = 0.0 L	Vac = 110.0	F = 60.00	Vdc = 0.0	L
V = 110.0	F = 60.00	I = 0.74	Vdc = 0.0	Idc = 0.00	Ip = 3.8	Å
P = 34.2	PF = 0.42	CF = 5.14	Is = 10.2	VA = 81.4	VAR = 73.9	V

HIGH OUTPUT CURRENT CREST FACTOR AND TURN ON / OFF PHASE ANGLE CONTROL

Chroma Programmable AC Power Source 61600 Series is capable of providing high output current crest factor (Max. 6). It delivers sufficient transient power required for testing most of switching made power circuits. The additive programmable turn on (off) phase angle control makes the 61600 series AC source ideal for inrush current test.



EASY-USE SOFTWARE : THE 61600 SERIES SOFTPANEL



Main Operation Menu



Auto Run (for ON/OFF or Burn in Test)



Recording Function

PANEL DESCRIPTION

Model 61601~61604





1. LCD Display

Show the test setup, operating status and readings

- 2. Page Up/Down Key Facilitate parameter data editing
- 3. Numeric Key

Data entry for test parameters

4. Rotary Knob

Regulate for Analog voltage, frequency and parameter setting

- 5. Power Switch
- 6. Output Indicator

Lighten when output is enabled

- 7. Output Enable Key Enable or disable output
- 8. External V Reference External programming voltage input
- 9. RS-232 Interface
- 10. GPIB Interface
- 11. Remote Sense Terminal

Use to compensate the line drop between source and testing point

12. Output Terminal

Connect output cable to the UUT

13. System Interface

For synchronizing signal and transient signal

14. Input Terminal

ORDERING INFORMATION

- 61601 : Programmable AC Source 0~300V, 15~1KHz / 500VA
- 61602 : Programmable AC Source 0~300V, 15~1KHz / 1KVA
- 61603 : Programmable AC Source 0~300V, 15~1KHz / 1.5KVA
- 61604 : Programmable AC Source 0~300V, 15~1KHz / 2KVA
- 61605 : Programmable AC Source 0~300V, 15~1KHz / 4KVA A615001 : Remote Interface Board for Model 61500/61600 series
- (External V Input, RS-232 Interface, GPIB Interface)
- A610004 : Universal Socket Center for Model 6512/6520/6530/ 6560/ 6415/6420/6430/61500/61600 series

A615007 : Softpanel for Model 61500/61600 series **A615008 :** DC Noise Filter (Max.16A) for Model 61500/61600 series



Model 61601 61602 61603 61604 61605 Output playse 1	SPECIFICATIONS						
Outpup fairs Outpup fairs Control is an intermed and inter	Model	61601	61602	61603	61604	61605	
Output Rating - AC Power/Phase S00VA 1000VA 1500V/300V/Auto 2000VA 4000VA Values S00V300V/Auto 1500V/300V/Auto 1500V/300V/Auto 150V/300V/Auto 100V/300V/Auto Accuracy 0.2%+0.2%F.S. 0.2% 0.2% 0.2% 0.3% 0.500H2 0.3% 0.05% 0.1% 0.3% 0.05% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.15% 0.5% 0.5% 0.15% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5%	Output phase	1	1	1	1	1	
Power/Phase500VA1000VA1500V000VA000VAVotage150V/300V/Auto150V/300V/Auto150V/300V/Auto150V/300V/Auto150V/300V/AutoRange/Phase0.2%+0.2%F.S.0.2%0	Output Rating - AC						
Voltage Story/300//Auto IS0V/300//Auto IS0V/300//Auto IS0V/300//Auto IS0V/300//Auto Accuracy 0.2%+0.2%F.S. 0.2%	Power/Phase	500VA	1000VA	1500VA	2000VA	4000VA	
Range/Phase150V/300V/Auto150V/300V/Auto150V/300V/Auto150V/300V/AutoAccuracy0.2%+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.Resolution0.1V0.1V0.1V0.1V0.1VDistorion(*1)0.3% e 50/60Hz0.3% e 50/60Hz0.3% e 50/60Hz1% e 15-1kHz1% e 15-1kHz1% e 15-1kHz1% e 15-1kHz1% e 15-1kHz1% e 15-1kHzLine Regulation0.1%0.1%0.1%0.1%0.1%0.3R e 20070.2%0.2%0.2%0.2%0.2%Dad Regulation (%)0.4%/150V/300V12A/6A (150V/300V)16A/8A (150V/300V)152A/20A (150V/300V)peak24A/12A (150V/300W)48A/4A (150V/300W)12A/6A (150V/300W)96A/48A (150V/300W)122A/6A (150V/300V)presument0.15%0.15%0.15%0.15%0.15%0.15%RangeDC, 15-1kHzDC, 15-1kHzDC, 15-1kHzDC, 15-1kHz0.01 HzAccuracy0.15%0.15%0.15%0.15%0.15%Rosolution0.01 Hz0.01 Hz0.01 Hz0.01 Hz0.01 HzCurrent250W500W750W100W200WVergate Age Age Age Age Age Age Age Age Age Ag	Voltage						
Accuracy Resolution0.2%+0.2%FS. 0.1/V0.2%+0.2%FS. 0.2%+0.2%FS. 	Range/Phase	150V/300V/Auto	150V/300V/Auto	150V/300V/Auto	150V/300V/Auto	150V/300V/Auto	
Resolution0.1V0.1V0.1V0.1V0.1VDistortion (*1)0.3% 950/obt20.3% 950/obt20.3% 950/obt20.3% 950/obt20.3% 950/obt213% 950/obt215%0.2%0.0%0.2%0.2%0.2%0.0% <td>Accuracy</td> <td>0.2%+0.2%F.S.</td> <td>0.2%+0.2%F.S.</td> <td>0.2%+0.2%F.S.</td> <td>0.2%+0.2%F.S.</td> <td>0.2%+0.2%F.S.</td>	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.	
Distortion (*) 19% e 30.00Hz 19% e 35-1kHz0.3% e 90.00Hz 19% e 15-1kHz0.3% e 90.00Hz 19% e 15-1kHz0.2% 10% e 15-1kHz0.2% 10% e 15-1kHz0.2% 10% e 15-1kHz0.2% 10% e 15-1kHz0.15% 10% e 15-1kHz0.15% 10.15%0.16% 10.15%0.15% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15%0.16% 10.15% <t< td=""><td>Resolution</td><td>0.1V</td><td>0.1V</td><td>0.1V</td><td>0.1V</td><td>0.1V</td></t<>	Resolution	0.1V	0.1V	0.1V	0.1V	0.1V	
$\begin{array}{c c c c c c c } \hline 1\% \oplus 15-1kHz & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.1\% & 0.2\% & 0.1\% $	Distortion (*1)	0.3% @ 50/60Hz	0.3% @ 50/60Hz	0.3% @ 50/60Hz	0.3% @ 50/60Hz	0.3% @ 50/60Hz	
Line Regulation 0.1% 0.1% 0.1% 0.1% 0.1% Load Regulation (*2) 0.2% 0.2% 0.2% 0.2% Max. Current/Phas 0.2% 0.2% 0.2% Max. Current/Phas 24A/12A (150V/300V) 8A/2A (150V/300V) 12A/6A (150V/300V) 96A/48A (150V/300V) 32A/20A (150V/300V) Peak 24A/12A (150V/300V) 48A/2A4 (150V/300V) 72A/36A (150V/300V) 96A/48A (150V/300V) 12A/6A (150V/300V) Frequency 0.01% 0.15% 0.15% 0.15% 0.15% 0.15% Resolution 0.01Hz 0.01 Hz 0.01 Hz 0.01 Hz 0.01 Hz 0.01 Hz Output Rating 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V Input Rating 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V Input Rating 90~250V,1a 90~250V,1a 90~250V,1a 190~250V,3a (*3) Input Rating 90~250V,1a 90~250V,1a 190~250V,3a (*3) 190~250V,3a (*3) Reglegaha		1% @ 15~1kHz	1% @ 15~1kHz	1% @ 15~1kHz	1% @ 15~1kHz	1% @ 15~1kHz	
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Max. Current/Phase 4/4/A (150V/300V) 8A/4A (150V/300V) 12A/6A (150V/300V) 16A/8A (150V/300V) 32A/2AA (150V/300V) peak 24A/12A (150V/300V) 48A/2AA (150V/300V) 72A/3AA (150V/300V) 96A/48A (150V/300V) 32A/2AA (150V/300V) Frequency U U DC, 15-1kHz D, 150/300V	Load Regulation (*2)	0.2%	0.2%	0.2%	0.2%	0.2%	
tms. 44/2A (150//300V) 8A/4A (150//300V) 12A/6A (150//300V) 16A/8A (150//300V) 32A/20A (150//300V) peak 24A/12A (150//300V) 48A/24A (150//300V) 72A/36A (150//300V) 96A/48A (150//300V) 192A/96A (150//300V) Frequency Employed (150//300V) 00.75% 0.75% 0.75% 0.75% 0.75% 0.75% 0.75% 0.75% 0.75% 0.016% 0.016% 0.016% 0.016% 0.016% 0.000W 2000W 2000W 200W 20W 20W	Max. Current/Phase						
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Frequency Range DC, 15-1kHz 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% 0.15% Accuracy 0.01 Hz 0.01 Hz 0.01 Hz 0.01 Hz 0.01 Hz 0.01 Hz Output Rating-U Power 250W 500W 750W 1000W 2000W Voltage 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V Current 2A/1A (212V/424V 6/3A (212V/424V 8/A4A (212V/424V 16A/8A (212V/424V Iput Rating 90-250V, 1a 90-250V, 1a 90-250V, 1a 90-250V, 1a 190-250V, 3a (*3) Frequency Range 90-250V, 1a 90-250V, 1a 90-250V, 1a 190-250V, 3a (*3) Current 10A Max.@ 90V 18A Max.@ 90V 22A Max.@ 90V 28A Max.@ 90V 14A Max.@ 190V Current 0.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Resolution 0.1V 0.1V 0.1V	peak	24A/12A (150V/300V)	48A/24A (150V/300V)	72A/36A (150V/300V)	96A/48A (150V/300V)	192A/96A (150V/300V)	
Range DC, 15-1kHz DC, 15-1kHz DC, 15-1kHz DC, 15-1kHz DC, 15-1kHz Accuracy 0.015% 0.015% 0.015% 0.015% 0.015% Resolution 0.001 Hz 0.001 Hz 0.011 Hz 0.011 Hz 0.011 Hz Output Rating-DC 500W 750W 1000W 200W Voltage 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V Current 2A/1A (212V/424V) 4A/2A (212V/424V) 6A/3A (212V/424V) 8A/4A (212V/424V) 16A/8A (212V/424V) Power Rating 90~250V, 10 90~250V, 10 90~250V, 30 (*3) 190~250V, 30 (*3) Frequency Range 47~63Hz 47~63Hz 47~63Hz 47~63Hz Power Factor (*4) 0.04 max. @ 90V 18A Max. @ 90V 28A Max. @ 90V 18A Max. @ 190V Power Factor (*4) 0.04 max. @ 90V 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. 0.2%+0.2% F.S. 0.2%+0.2%	Frequency						
Accuracy 0.15% 0.15% 0.15% 0.15% 0.15% Resolution 0.01 Hz 0.01 Hz 0.01 Hz 0.01 Hz Output Rating - UC 250W 500W 750W 1000W 2000W Voltage 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V Current 2A/1A (212V/424V) 4A/2A (212V/424V) 6A/3A (212V/424V) 8A/4A (212V/424V) 16A/8A (212V/424V) Input Rating U 4A/2A (212V/424V) 6A/3A (212V/424V) 8A/4A (212V/424V) 16A/8A (212V/424V) Input Rating 90~250V, 1a 90~250V, 1a 90~250V, 1a 190~250V, 3a (*3) Frequency Range 90~250V, 1a 90~250V, 1a 90~250V, 1a 190~250V, 3a (*3) Greger Factor (*4) 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. 0.98 Min. Current US 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. 0.98 Min. 0.98 Min. Resolution 0.02(0.V 150V/300V 150V/300V 150V/300V 150V/300V	Range	DC, 15~1kHz	DC, 15~1kHz	DC, 15~1kHz	DC, 15~1kHz	DC, 15~1kHz	
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Output Rating - DC Power 250W 50W 750W 1000W 2000W Voltage 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V Current 2A/1A (212V/424V) 4A/2A (212V/424V) 6A/3A (212V/424V) 8A/4A (212V/424V) 16A/8A (212V/424V) Input Rating U U U 90~250V, 1₀ 90, 10V 10.0V 10.0	Resolution	0.01 Hz	0.01 Hz	0.01 Hz	0.01 Hz	0.01 Hz	
Power 250W 500W 750W 100W 200W Voltage 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V Current 2A/1A (212V/424V) 4A/2A (212V/424V) 6A/3A (212V/424V) 8A/4A (212V/424V) 16A/8A (212V/424V) Input Rating 90~250V, 10 90~250V, 10 90~250V, 10 90~250V, 10 190~250V, 30 (*3) Yotage Range 90~260V, 10 90~250V, 10 90~250V, 10 190~250V, 30 (*3) Frequency Range 47~63Hz 47~63Hz 47~63Hz 47~63Hz Current 100 Max, 090W 18A Max, 090V 22A Max, 090V 28A Max, 090V 14A Max 190V Power Factor (*4) 0.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Range/Phase 150V/300V 150V/300V 150V/300V 150V/300V 150V/300V 0.04%+0.2%FS. Range/Phase 150V/300V 150V/300V 150V/300V 0.1V 0.1V 0.1V 0.1V Curacy 0.2%+0.2%FS. 0.2%+0.2%FS. 0.2%+0.2%FS. 0.2%+0.2%FS.	Output Rating - DC						
Voltage 212V/424V 212V/424V 212V/424V 212V/424V 212V/424V Current 2A/1A (212V/424V) AA/2A (212V/424V) 6A/3A (212V/424V) 8A/4A (212V/424V) 16A/8A (212V/424V) Input Rating 90~250V, 10 90~250V, 10 90~250V, 10 90~250V, 10 90~250V, 10 190~250V, 30 (*3) Frequency Range 47~63Hz 47~63Hz 47~63Hz 47~63Hz 47~63Hz Owner Factor (*4) 0.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Measurement Voltage Voltage Voltage Voltage Voltage Scalage 150V/300V 150V/300V 150V/300V 150V/300V 150V/300V Accuracy 0.2% Fb.s. 0.2% H0.2% FS. 0.2% H0.2% FS. 0.2% H0.2% FS. 0.2% H0.2% FS. Range/Phase 150V/300V 150V/300V 150V/300V 150V/300V 150V/300V Accuracy (ms.i) 0.4% H0.3% FS. 0.2% H0.2% FS. 0.2% H0.2% FS. 0.2% H0.2% FS. 0.2% H0.2% FS. Range/Phase 24A 48A 72A	Power	250W	500W	750W	1000W	2000W	
Current 2A/1A (212V/424V) 4A/2A (212V/424V) 6A/3A (212V/424V) 8A/4A (212V/424V) 16A/8A (212V/424V) Input Rating	Voltage	212V/424V	212V/424V	212V/424V	212V/424V	212V/424V	
Input Rating Voltage Range 90~250V, 1ø 90~250V, 1ø 90~250V, 1ø 190~250V, 3ø (*3) Frequency Range 47~63Hz 47~63Hz 47~63Hz 47~63Hz 47~63Hz Current 10A Max. @ 90V 18A Max. @ 90V 22A Max. @ 90V 28A Max. @ 90V 14A Max. @ 190V Power Factor (*4) 0.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Measurement U 0.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Accuracy 0.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Assurement U 0.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Accuracy 0.296+0.296 F.S. 0.296+0.29	Current	2A/1A (212V/424V)	4A/2A (212V/424V)	6A/3A (212V/424V)	8A/4A (212V/424V)	16A/8A (212V/424V)	
Voltage Range 90~250V, 1a 90~250V, 1a 90~250V, 1a 90~250V, 1a 190~250V, 3a (*3) Frequency Range 47~63Hz 47~63Hz 47~63Hz 47~63Hz 47~63Hz Current 10A Max. @ 90V 18A Max. @ 90V 22A Max. @ 90V 28A Max. @ 90V 14A Max. @ 190V Power Factor (*4) 0.97 Min. 0.99 Min. 0.98 Min. 0.98 Min. 0.98 Min. Measurement U U.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Voltage U U.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Current U U.97 Min. 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Current U 0.1V 0.1V 150V/300V 150V/300V 0.2% H0.2% F.S.	Input Rating						
Frequency Range $47-63Hz$ $28A$ $Max @ 90V$ $18A$ $age @ 90V$ $28A$ $Max @ 90V$ $18A$ $age @ 90V$ 0.98 $Max @ 90V$ $160V$ 0.98 $Max @ 90V$ $160V$ 0.98 $Max @ 90V$ $160V$ 0.98 $Max @ 19V$ Range/Phase $150V/300V$ $0.2\%+0.2\%FS$ $0.2\%+0.2\%FS$ $0.2\%+0.2\%FS$ $0.2\%+0.2\%FS$ $0.2\%+0.2\%FS$ $0.2\%+0.2\%FS$ $0.2\%+0.2\%FS$ $0.2\%+0.2\%$	Voltage Range	90~250V, 1ø	90~250V, 1ø	90~250V, 1ø	90~250V, 1ø	190~250V, 3ø (*3)	
Current 10A Max.@ 90V 18A Max.@ 90V 22A Max.@ 90V 28A Max.@ 90V 14A Max.@ 190V Power Factor (*4) 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. 0.98 Min. Measurement Voltage Voltage Voltage Voltage Voltage Range/Phase 150V/300V 150V/300V 150V/300V 150V/300V 150V/300V 0.2%+0.2%FS. 0.2%+0.2%FS. Range/Phase 150V/300V 150V/300V 0.1V 0.1V 0.1V 0.1V Accuracy 0.2%+0.2%FS. 0.2%+0.2%FS. 0.2%+0.2%FS. 0.2%+0.2%FS. 0.2%+0.2%FS. 0.2%+0.2%FS. Rasolution 0.1V 0.1V 0.1V 0.1V 0.1V 0.1V Current Vortage 24A 48A 72A 96A 192A Accuracy (ms.s) 0.4%+0.3%FS. 0.4%+0.3%FS. 0.4%+0.3%FS. 0.4%+0.3%FS. 0.4%+0.4%FS.	Frequency Range	47~63Hz	47~63Hz	47~63Hz	47~63Hz	47~63Hz	
Power Factor (*4) 0.97 Min. 0.98 Min. 0.98 Min. 0.98 Min. Measurement Measurement U Voltage Statument Statument Statument Range/Phase 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. 0.2%+0.2%F.S. Resolution 0.1V 0.1V 0.1V 0.1V 0.1V 0.1V Current U 0.1V 0.1V 0.1V 0.1V 0.1V Accuracy (rm.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. 0.4%+0.3%F.S. 0.4%+0.3%F.S. 0.4%+0.3%F.S. 0.4%+0.4%F.S. 0.4%+0.4%F.S. <th< td=""><td>Current</td><td>10A Max. @ 90V</td><td>18A Max. @ 90V</td><td>22A Max. @ 90V</td><td>28A Max. @ 90V</td><td>14A Max. @ 190V</td></th<>	Current	10A Max. @ 90V	18A Max. @ 90V	22A Max. @ 90V	28A Max. @ 90V	14A Max. @ 190V	
Measurement Voltage Range/Phase 150V/300V 0.2%+0.2%+ES. 0.2%+0.2%+ES. 0.2%+0.2%+ES. 0.2%+0.2%+ES. 0.2%+0.2%+ES. 0.4%+0.3%+ES. 0.4%+0.3%+ES. 0.4%+0.3%+ES. 0.4%+0.4%+ES. 0.4%+0.4%+ES. 0.4%+0.4%+ES. 0.4%+0.4%+ES. 0.4%+0.4%+ES. 0.4%+0.	Power Factor (*4)	0.97 Min.	0.97 Min.	0.98 Min.	0.98 Min.	0.98 Min.	
Voltage Range/Phase 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. Resolution 0.1V 0.1V 0.1V 0.1V Current Execute (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. Accuracy (m.s.) 0.4%+0.3%F.S. 0.4%+0.6%F.S. 0.4%+0.3%F.S. 0.4%+0.4%F.S. Accuracy (m.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. Accuracy (m.s.) 0.1W 0.1W 0.1W 0.1W 0.1W Stocaracy (m.s.) 0.4%+0.4%F.	Measurement						
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 U U 0.1V 0.1V 0.1V 0.1V 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%+0.4%F.S. 0.4%+0.3%F.S. Accuracy (peak) 0.4%+0.4%F.S. 0.4%+0.4%F.S. 0.4%+0.4%F.S. 0.4%+0.4%F.S. Power U U 0.1W 0.1W 0.1W 0.1W Resolution 0.1W	Voltage						
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. Resolution $0.1V$ $0.1V$ $0.1V$ $0.1V$ $0.1V$ Current U U $0.1V$ $0.1V$ $0.1V$ 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. Power U $0.4\%+0.6\%$ F.S. $0.4\%+0.6\%$ F.S. $0.4\%+0.6\%$ F.S. $0.4\%+0.6\%$ 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 U U $0.1W$ $0.1W$ $0.1W$ $0.1W$ $0.1W$ Resolution $0.4\%+0.4\%$ 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. Power U $0.1W$ $0.1W$ $0.1W$ $0.1W$ $0.1W$ $0.1W$ $0.1W$ Storage $0.4\%+0.4\%$ C $-40 \sim +85$ °C	Range/Phase	150V/300V	150V/300V	150V/300V	150V/300V	150V/300V	
Resolution 0.1V 0.1V 0.1V 0.1V 0.1V Current PGA 192A Accuracy Ad%+0.3%F.S. O.4%+0.3%F.S. O.4%+0.3%F.S. O.4%+0.3%F.S. O.4%+0.3%F.S. O.4%+0.4%F.S. O	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.	
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. Power	Resolution	0.1V	0.1V	0.1V	0.1V	0.1V	
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. 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%+0.6%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. 0.4%+0.6%F.S. 0.4%+0.6%F.S. 0.4%+0.6%F.S. 0.4%+0.4%F.S. 0.4%+0.4%C.S. 0.4%+0.4%C.S. 0.4%	Current						
Accuracy (r.m.s.) $0.4\%+0.3\%F.S.$ $0.4\%+0.3\%F.S.$ $0.4\%+0.3\%F.S.$ $0.4\%+0.3\%F.S.$ $0.4\%+0.3\%F.S.$ $0.4\%+0.3\%F.S.$ $0.4\%+0.3\%F.S.$ 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 $0.1W$ $0.1W$ $0.1W$ $0.1W$ $0.1W$ Temperature $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%+0.4\%C$ $0.4\%+0.4\%C$ $0.1W$ $0.1W$ $0.1W$ Temperature 0.1% 0.1% 0.1% 0.1% 0.1% 0.1% Operating $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ Storage $-400-4\%5^{\circ}C$ $0.4\%-0.4\%C$ $0.4\%-0.4\%C$ $-400-4\%5^{\circ}C$ $-400-4\%5^{\circ}C$ $-400-4\%5^{\circ}C$ $-400-4\%5^{\circ}C$ $-400-4\%5^{\circ}C$ $-400-4\%5^{\circ}C$ $-400-4\%5^{\circ}C$	Range (peak)	24A	48A	72A	96A	192A	
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. Power	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.	
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. Resolution 0.1W 0.1W 0.1W 0.1W Temperature U U 0.4%+0.4%F.S. 0.4%+0.4%F.S. 0.4%+0.4%F.S. Operating 0~40°C 0.1W 0.1W 0.1W 0.1W Storage -40~+85°C -40~+85°C -40~+85°C -40~+85°C -40~+85°C Safety & EMC -40~+85°C -40~+85°C -40~+85°C -40~+85°C Dimensions (H x W x D) I33.35 x 482.6 x 569.5 mJ > 5.25 x 19 x 22.42 inch 266.7 x 482.6 x 569.5 mJ > 10.5 x 19 x 22.42 inch Weight 20 kg / 4.05 lbs 41 kg / 90.31 lbs	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.	
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. Resolution 0.1W 0.1W 0.1W 0.1W Temperature 0 0 0 0 0.4% 0.4%+0.4%F.S. 0.4%+0.4%F.S. Operating 0.1W 0.1W 0.1W 0.1W 0.1W 0.1W Storage 0 0.40°C 0 0 0 0 0.4% 0.1W 0.1W 0.1W Storage -40 ~40°C 0 0 0 0 0 0 0 0 0 40 ~40°C 0 <	Power						
Resolution 0.1W 0.1W 0.1W 0.1W Temperature 0	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	
Temperature Operating 0~40°C	Resolution	0.1W	0.1W	0.1W	0.1W	0.1W	
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) Dimensions (H x W x D) 266.7 x 482.6 x 569.5 mm / 10.5 x 19 x 22.42 inch Weight 20 kg / 44.05 lbs 41 kg / 90.31 lbs	Temperature						
Storage -40 ~ +85°C Safety & EMC Embedded & EMC & LVD 266.7 x 482.6 x 569.5 mm / 10.5 x 19 x 22.42 inch 41 kg / 90.31 lbs <	Operating	0~40°C	0~40°C	0~40°C	0~40°C	0~40°C	
Safety & EMC CE (include EMC & LVD) Dimensions (H x W x D) 266.7 x 482.6 x 569.5 mm / 5.25 x 19 x 22.42 inch 266.7 x 482.6 x 569.5 mm / 10.5 x 19 x 22.42 inch Weight 20 kg / 44.05 lbs 41 kg / 90.31 lbs	Storage	-40 ~ +85°C	-40 ~ +85°C	-40 ~ +85°C	-40 ~ +85°C	-40 ~ +85°C	
Dimensions (H x W x D) 266.7 x 482.6 x 569.5 mm / 5.25 x 19 x 22.42 inch 266.7 x 482.6 x 569.5 mm / 10.5 x 19 x 22.42 inch Weight 20 kg / 44.05 lbs 41 kg / 90.31 lbs	Safety & EMC	CE (include EMC & LVD)					
Weight 20 kg / 44.05 lbs 41 kg / 90.31 lbs	Dimensions (H x W x D)	133.35 x 482.6 x 569.5 mm / 5.25 x 19 x 22.42 inch 266.7 x 482.6 x 569.5 mm / 10.5 x 19 x 22.42 inch					
	Weight	20 kg / 44.05 lbs 41 kg / 90.31 lbs					

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 : Model 61605 can also use single-phase connecting method of input AC power, the maximum input current is 28A @ 190V.

Note*4 : Input power factor is tested on input 220V, full load condition.

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