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## PROGRAMMABLE AC POWER SOURCE MODEL 61700 SERIES

The Chroma Programmable AC Power Source model 61700 series delivers pure, 5-wire, 3-phase AC power. Unlike traditional 3-phase AC sources, it includes low power rating models at very low cost. Users can program voltage and frequency, and measure the critical characteristics of the output on its LCD display. It provides the ability to simulate all kinds of UUT input conditions to be utilized in R&D and QA. It is also suitable for commercial applications from laboratory testing to mass production.

The 61700 series AC Source supplies output voltages from 0 to 300VAC and can be set individually for each phase. Users also can set the phase angle from 0° to 360°. These kinds of functions allow the 61700 series to simulate unbalanced 3-phase power. With a wide output frequency range, from 15 to 1200Hz, it is suitable for avionics and military applications. The AC+DC mode extends the output function to simulate abnormal situations when the power line contains a DC offset.

The 61700 series uses state-of-the-art PWM technology and a power factor correction circuit. These features allow it to generate very clean AC output with a typical distortion

of less than 0.3%, and it can yield higher efficiency and deliver more output power than other sources on the market.

By using advanced DSP technology, the 61700 series offers precise, high speed measurements including RMS voltage, RMS current, true power, power factor, current crest factor, and more.

The 61700 series offers an optional function to output transient voltage. This function includes LIST, PULSE, STEP and INTERHARMONICS modes. Users can easily program variant waveforms for immunity tests. The 61700 series can also be remotely controlled via powerful and user-friendly softpanel software through GPIB or RS-232 interfaces. The softpanel also includes a waveform editor that can edit up to 40th order harmonic components. With this, the 61700 series has the ability to output any distorted waveform desired.

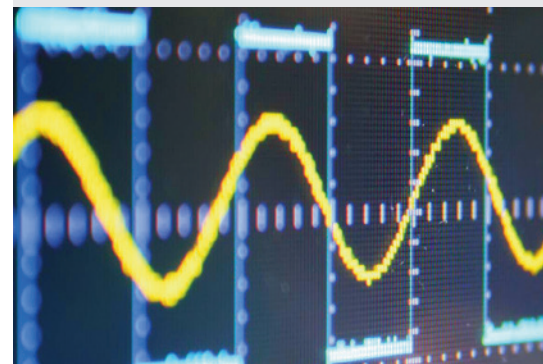
With the self-diagnosis routine and protection against over power, over current, over voltage, over temperature, and fan fail, the 61700 series ensures quality and reliability for even the most demanding engineering testing and production line applications.



## MODEL 61700 SERIES

### KEY FEATURES

- Power:
  - 1500VA, 3Ø (61701)
  - 3000VA, 3Ø (61702)
  - 4500VA, 3Ø (61703)
  - 6000VA, 3Ø (61704)
  - 12000VA, 3Ø (61705)
- Voltage: 0~150V/0~300V  
Frequency: 15~1.2kHz  
Phase angle: 0~360° Programmable
- Built-in PFC, provides input power factor over 0.98
- Advanced PWM technology delivers high power density in a compact rack-mountable package
- Built-in output isolation relays
- AC+DC output mode
- Programmable slew rate setting for changing voltage
- Turn on, turn off phase angle control
- User-definable power-on status
- Optional function for power line disturbance (PLD) simulation capability
- Comprehensive measurement capability: V, Irms, Ipk, I inrush, P, PF, CF of current etc.
- Programmable r.m.s. current limit
- Full protection: OP, OC, OV and OT protection
- Optional GPIB and RS-232C interface
- Easy-use software for operation



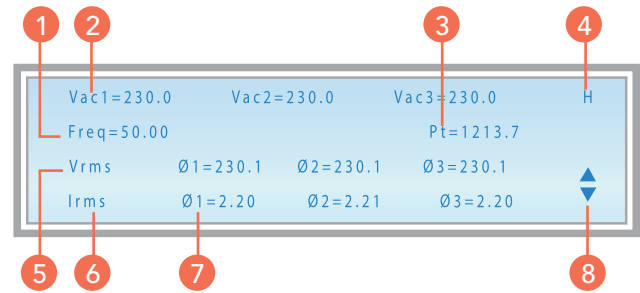
**Chroma**

## COMPREHENSIVE MEASUREMENTS

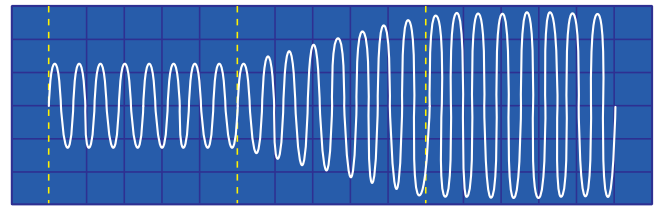
By building in a 16-bit precision measurement circuit, the 61700 series AC source offers precision and high speed measurements. Such as RMS voltage, RMS current, true power, power factor, and current crest factor, VA (apparent power) and VAR (reactive power). Users can use rotary knob to change the measurement items shown on LCD display. They also can change page to see more measurement items.

## SLEW RATE OF VOLTAGE

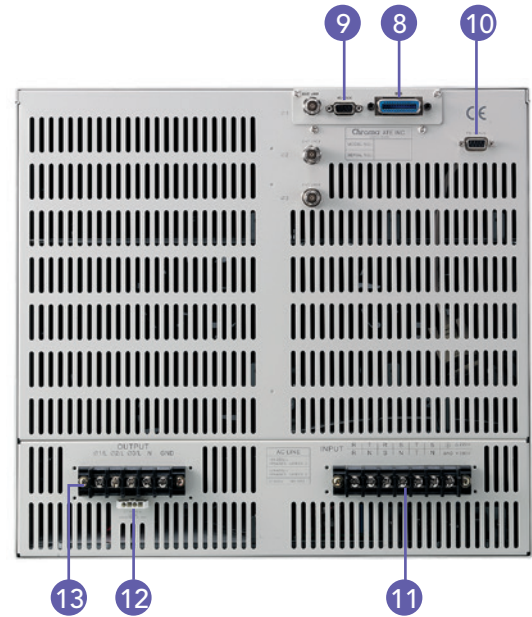
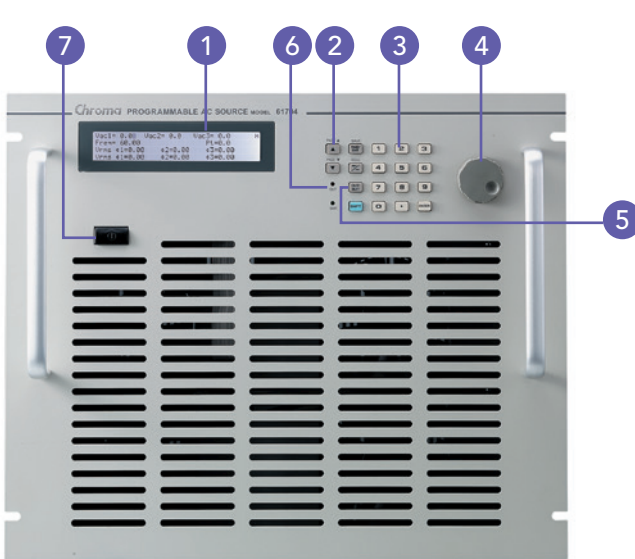
Programmable AC Source 61700 Series use DSP technology to program voltage waveform. Users can change the voltage in only one step. Or users can set the slew rate to get a gradual increase or decrease of voltage. It can help to easily test the line input range of the products, for example 190V-264V. It also can reduce the inrush current if setting the line in voltage increasing from a low level to a high level.



- 1. Frequency setting
- 2. Voltage setting
- 3. Total power measure
- 4. High voltage range
- 5. Voltage r.m.s. measure
- 6. Current r.m.s. measure
- 7. Current measure data
- 8. Up or down page



## PANEL DESCRIPTION

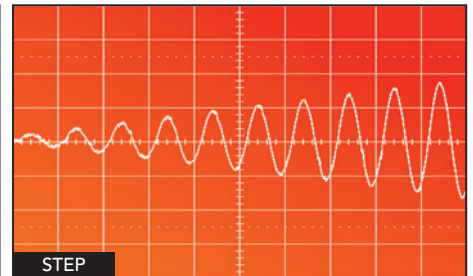
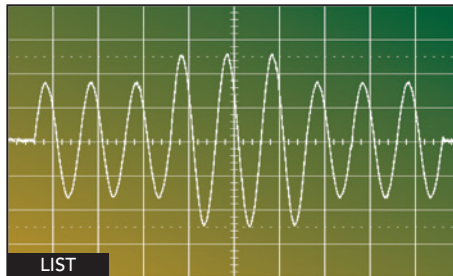
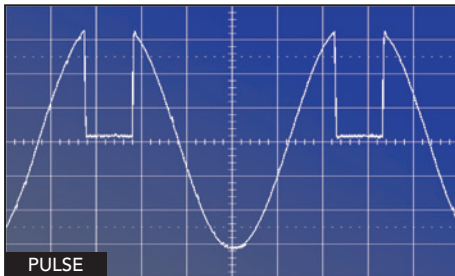


- 1. **LCD Display**  
LCD display shows the setup, operating status and readings
- 2. **Page Up/Down Key**  
Facilitate parameter data editing
- 3. **Numeric Key**  
Data entry of test parameters
- 4. **Rotary Knob**  
Program analog of setting the voltage, frequency and parameter setting
- 5. **Output Enable Key**  
To enable or disable output
- 6. **Output Indicator**  
Light on when output is enable
- 7. **Power Switch**
- 8. **GPIB Interface**
- 9. **RS-232C Interface**
- 10. **System Interface**  
TTL signals for system status
- 11. **Input Terminal**  
3Ø Y and Δ connecting are suitable
- 12. **Remote Sense Terminal**  
Use to compensate the line drop between source and testing point
- 13. **Output Terminal**  
Connect output cable to the UUT

## APPLICATIONS

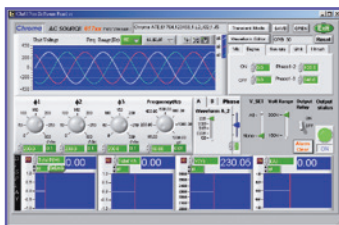
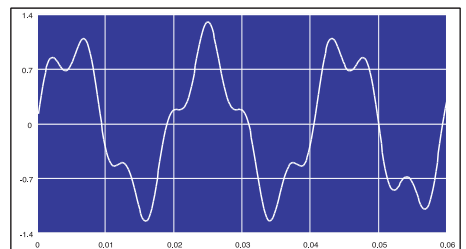
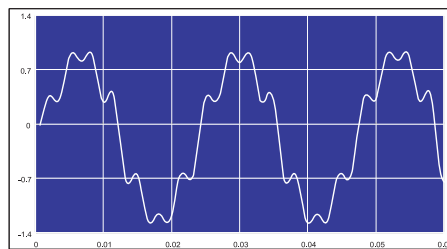
### POWER LINE DISTURBANCE SIMULATION (OPTIONAL FUNCTION)

In addition to the steady output voltage and frequency programming, Chroma AC power source 61700 series provides powerful functions PULSE, LIST and STEP to simulate all kinds of power line disturbance conditions.

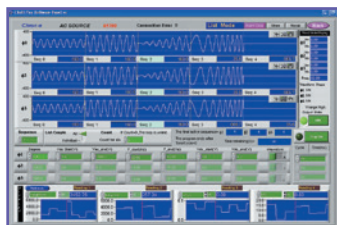


### HARMONICS, INTERHARMONICS SYNTHESIS (OPTIONAL FUNCTION)

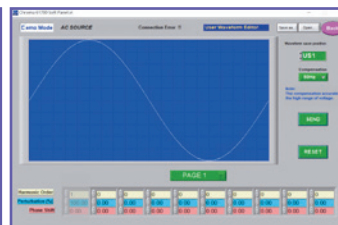
Users can make use of the softpanel software (A617001) to synthesize harmonic waveforms and store it in the memory of the AC source. An interharmonic sweeping function from 0.01Hz to 2400Hz is also available to generate a distorted non-periodic waveform directly from 61700 series front panel.



Main panel



LIST Mode Voltage Transient Output



User Waveform Editor



Interharmonics

## ORDERING INFORMATION

- 61701 : Programmable AC Source 0~300V, 15~1.2kHz, 3 $\phi$  1500VA
- 61702 : Programmable AC Source 0~300V, 15~1.2kHz, 3 $\phi$  3000VA
- 61703 : Programmable AC Source 0~300V, 15~1.2kHz, 3 $\phi$  4500VA
- 61704 : Programmable AC Source 0~300V, 15~1.2kHz, 3 $\phi$  6000VA
- 61705 : Programmable AC Source 0~300V, 15~1.2kHz, 3 $\phi$  12000VA
- A615001 : Remote Interface Board for 61500/61600/61700 Series (RS-232 & GPIB Interfaces)
- A615002 : Remote Interface Board for 61500/61600/61700 Series (LAN & USB Interfaces)
- A617001 : Softpanel for Model 61700 Series
- A617002 : Transient voltage output function, including WAVEFORM, LIST, PULSE, STEP and INTERHARMONICS mode



Model 61705

Model 61701-61704

## SPECIFICATIONS

Model	61701	61702	61703	61704	61705
<b>AC Output Rating</b>					
Max. Power	1500VA	3000VA	4500VA	6000VA	12000VA
Per Phase	500VA	1000VA	1500VA	2000VA	4000VA
<b>Voltage (per phase)</b>					
Range	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
Distortion *1	0.3%@50/60Hz 1.5% @ 15~1.2kHz	0.3%@50/60Hz 1.5% @ 15~1.2kHz	0.3%@50/60Hz 1.5% @ 15~1.2kHz	0.3%@50/60Hz 1.5% @ 15~1.2kHz	0.3%@50/60Hz 1.5% @ 15~1.2kHz
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%
Temp. coefficient	0.02% per degree from 25°C				
<b>Max. Current (per phase)</b>					
RMS	4A/2A	8A/4A	12A/6A	16A/8A	32A/20A
peak	24A/12A	48A/24A	72A/36A	96A/48A	192A/96A
<b>Frequency</b>					
Range	DC, 15~1.2kHz	DC, 15~1.2kHz	DC, 15~1.2kHz	DC, 15~1.2kHz	DC, 15~1.2kHz
Accuracy	0.15%	0.15%	0.15%	0.15%	0.15%
<b>Phase Angle</b>					
Range	0~360°	0~360°	0~360°	0~360°	0~360°
Resolution	0.1°	0.1°	0.1°	0.1°	0.1°
Accuracy	< 0.8°@50/60Hz	< 0.8°@50/60Hz	< 0.8°@50/60Hz	< 0.8°@50/60Hz	< 0.8°@50/60Hz
<b>DC Output Rating (per phase)</b>					
Power	250W	500W	750W	1kW	2kW
Voltage	212V/424V	212V/424V	212V/424V	212V/424V	212V/424V
Current	2A/1A	4A/2A	6A/3A	8A/4A	16A/8A
<b>Input 3-Phase Power (per phase)</b>					
Voltage Operating Range	3Ø 100~240V ± 10%V <sub>LN</sub> (WYE); 3Ø 100~240V ± 10%V <sub>LL</sub> (Delta)		3Ø 200~240V ± 10%V <sub>LN</sub> (WYE); 3Ø 200~240V ± 10%V <sub>LL</sub> (Delta)		
Frequency range	47~63Hz	47~63Hz	47~63Hz	47~63Hz	47~63Hz
Current	9A Max. (3Ø 100~240V ± 10%V <sub>LN</sub> )	16A Max. (3Ø 100~240V ± 10%V <sub>LN</sub> )	10A Max. (3Ø 200~240V ± 10%V <sub>LN</sub> )	14A Max. (3Ø 200~240V ± 10%V <sub>LN</sub> )	28A Max. (3Ø 200~240V ± 10%V <sub>LN</sub> )
Power factor *3	0.97 Min.	0.98 Min.	0.98 Min.	0.98 Min.	0.98 Min.
<b>Measurement</b>					
<b>Voltage (Line-Neutral)</b>					
Range	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
<b>Current (per phase)</b>					
Range (peak)	24A	48A	72A	96A	192A
Accuracy (RMS)	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.
Resolution	0.01A	0.01A	0.01A	0.01A	0.01A
<b>Power (per phase)</b>					
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
<b>Others</b>					
Efficiency *4	68 %	77 %	81 %	82%	82%
Protection	UVP, OCP, OPP, OTP, FAN				
<b>Temperature Range</b>					
Operating	0°C~40°C				
Storage	-40°C~85°C				
Humidity	30 %~90 %				
<b>Safety &amp; EMC</b>					
CE					
Dimension (H x W x D)	400 x 482.6 x 600.5 mm / 15.75 x 19 x 23.64 inch	400 x 482.6 x 600.5 mm / 15.75 x 19 x 23.64 inch	400 x 482.6 x 600.5 mm / 15.75 x 19 x 23.64 inch	400 x 482.6 x 600.5 mm / 15.75 x 19 x 23.64 inch	896.4 x 546 x 699.9 mm / 35.28 x 21.5 x 27.56 inch
Weight	75 kg / 165.2 lbs	75 kg / 165.2 lbs	75 kg / 165.2 lbs	75 kg / 165.2 lbs	150 kg / 330.4 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 : Input power factor is tested on input 220V, full load condition.

Note \*4 : Efficiency is tested on input voltage 110V for 61701 and 61702, 220V for 61703, 61704 and 61705.

\* All specifications are subject to change without notice.



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