



## PROGRAMMABLE AC POWER SOURCE MODEL 61700 SERIES

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

The 61700 series AC Source supplies the output voltage from 0 to 300VAC and it can be set individually for each phase. Users also can set the phase angle from 0° to 360°. These kinds of function make the 61700 series can simulate unbalance 3-phase power. Because of the wide output frequency from 15 to 1200Hz, it is suitable for avionics and military application. The AC+DC mode extends the output function to simulate abnormal situation when power line contains DC offset.

The 61700 series uses the state-of-the-art PWM technology and power factor correction circuit. So it is capable to generate very clean AC output with typical distortion less than 0.3%,

and it can yield higher efficiency and deliver more output power.

By using advanced DSP technology, the 61700 series offers precision and high speed measurements such as RMS voltage, RMS current, true power, power factor, and current crest factor, etc.

The 61700 series offers an optional function to output transient voltage. The function includes LIST, PULSE, STEP and INTERHARMONICS mode. Users can easily program variant waveform for immunity test. The 61700 series can also be controlled by a powerful and user-friendly softpanel through GPIB or RS-232 interface. Besides that, the softpanel includes a waveform editor that can edit up to 40th order harmonic components. By this way, the 61700 series get the ability to output distorted waveform as users like.

The self-diagnosis routine and protections against over power, over current, over voltage, over temperature and fan fail, the 61700 series ensure the quality and reliability for even the most demanding engineering testing and production line application.

## Programmable AC Power Source

### MODEL 61700 SERIES

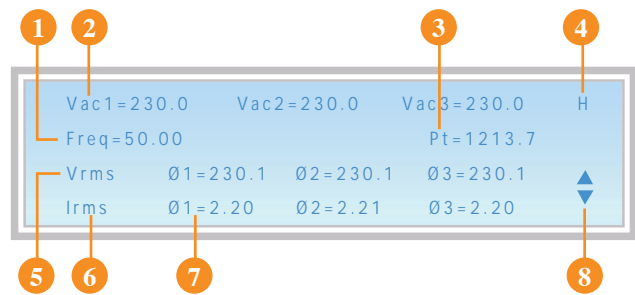
#### Key Features:

- 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°
- 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



## 1. COMPREHENSIVE MEASUREMENTS

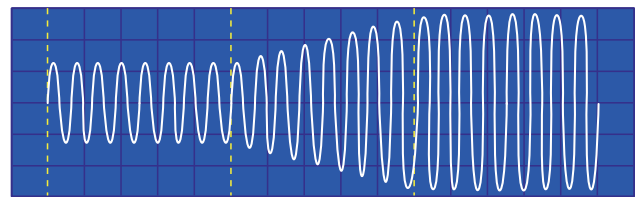
By building in a 16-bit precision measurement circuit, the 61700 series AC source offers precision and high speed measurements. Such as RMS voltage, RMS current, true power, power factor, and current crest factor, VA (apparent power) and VAR (reactive power). Users can use rotary knob to change the measurement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



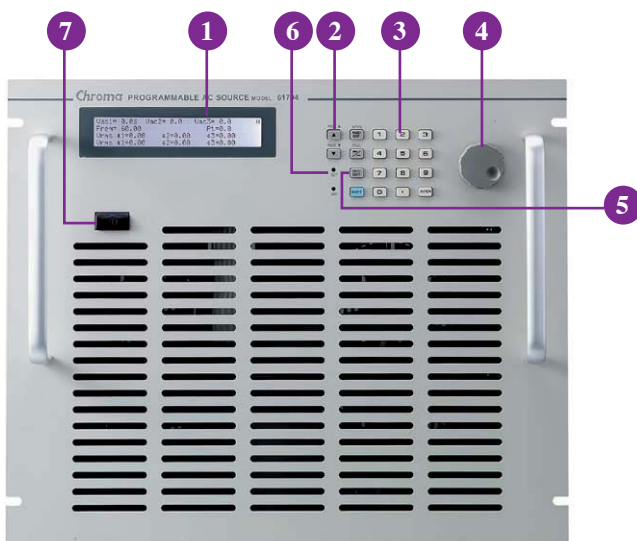
1. Frequency setting
2. Voltage setting
3. Total power measure
4. High voltage range
5. Voltage r.m.s. measure
6. Current r.m.s. measure
7. Current measure data
8. Up or down page

## 2. SLEW RATE OF VOLTAGE

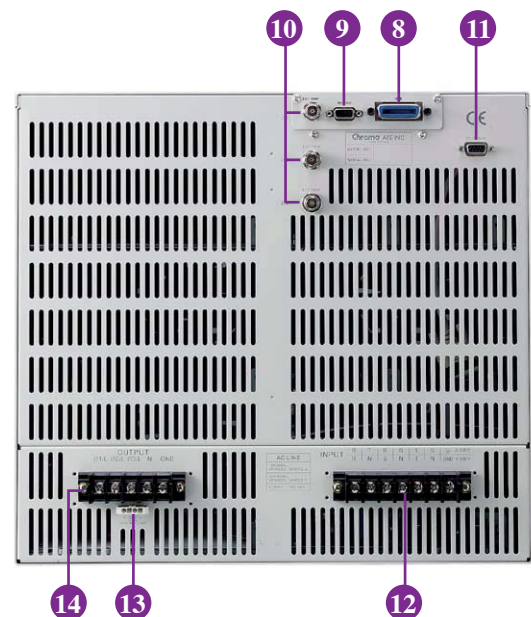
Programmable AC Source 61700 Series use DSP technology to program voltage waveform. Users can change the voltage in only one step. Or users can set the slew rate to get a gradual increase or decrease of voltage. It can help to easily test the line input range of the products, for example 190V-264V. It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



## 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

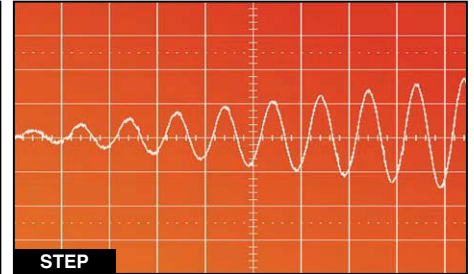
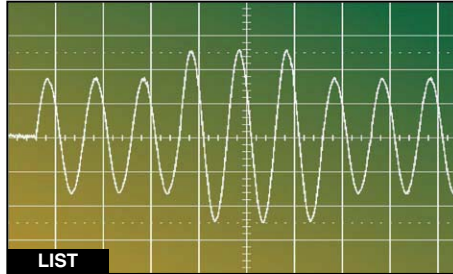
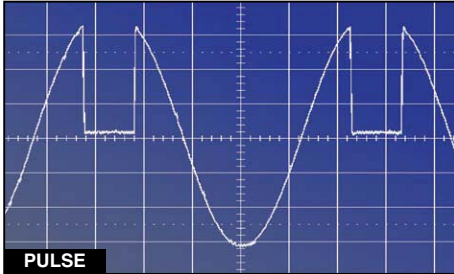


7. **Power Switch**
8. **GPIB Interface**
9. **RS-232C Interface**
10. **External V Reference (Reserved)**  
External programming voltage input
11. **System Interface**  
TTL signals for system status
12. **Input Terminal**  
3Ø Y and Δ connecting are suitable
13. **Remote Sense Terminal**  
Use to compensate the line drop between source and testing point
14. **Output Terminal**  
Connect output cable to the UUT

## APPLICATIONS

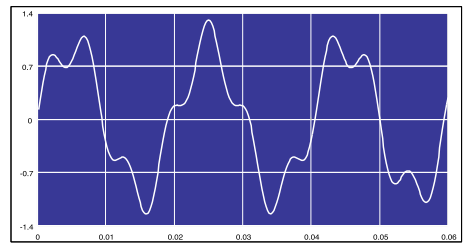
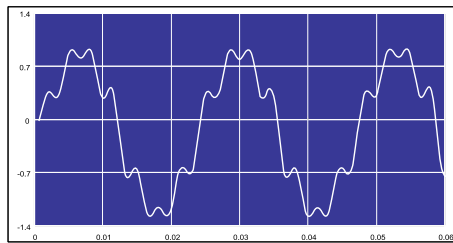
### POWER LINE DISTURBANCE SIMULATION (OPTIONAL FUNCTION)

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.

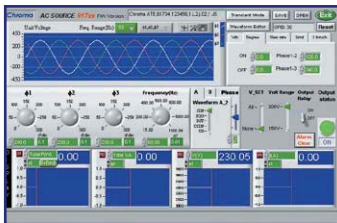


### HARMONICS, INTERHARMONICS SYNTHESIS (OPTIONAL FUNCTION)

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.



### EASY-USE SOFTPANEL



61700 series Softpanel  
Main page



Optional Function  
LIST Mode Voltage Transient Output

### AEROSPACE TESTING



MIL-STD-704E Testing



RTCA DO-160D Testing

## ORDERING INFORMATION

- 61701** : Programmable AC Source 0~300V, 15~1.2KHz, 3 1500VA
- 61702** : Programmable AC Source 0~300V, 15~1.2KHz, 3 3000VA
- 61703** : Programmable AC Source 0~300V, 15~1.2KHz, 3 4500VA
- 61704** : Programmable AC Source 0~300V, 15~1.2KHz, 3 6000VA
- 61705** : Programmable AC Source 0~300V, 15~1.2KHz, 3 12000VA
- A615001** : Remote Interface Board for 61500/61600/61700 Series  
(RS-232 Interface, GPIB Interface)
- A617001** : Softpanel for Model 61700 Series
- A617002** : Ttransient 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	3000 VA	4500 VA	6000 VA	12000 VA
Per Phase	500VA	1000 VA	1500 VA	2000 VA	4000 VA
<b>Voltage</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% 15~1.2K Hz	0.3%@50/60Hz 1.5% 15~1.2K Hz	0.3%@50/60Hz 1.5% 15~1.2K Hz	0.3%@50/60Hz 1.5% 15~1.2K Hz	0.3%@50/60Hz 1.5% 15~1.2K Hz
Line Regulation*2	0.1%	0.1%	0.1%	0.1%	0.1%
Load Regulation	0.2%	0.2%	0.2%	0.2%	0.2%
Temp. Coefficient	0.02% per degree from 25°C				
<b>Maximum Current (per phase)</b>					
R.m.s.	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,15~1.2K Hz	DC,15~1.2K Hz	DC,15~1.2K Hz	DC,15~1.2K Hz	DC,15~1.2K Hz
Accuracy	0.15%	0.15%	0.15%	0.15%	0.15%
<b>Phase Angle</b>					
Range	0~360°				
Resolution	0.3				
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	1000W	2000W
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 Range	90~250V	90~250V	190~250V	190~250V	190~250V
Frequency Range	47~63Hz	47~63Hz	47~63Hz	47~63Hz	47~63Hz
Current	9A Max.	16A Max.	10A Max.	14A Max.	28A Max.
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 (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.
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%
Size (WxHxD)	483x399x600mm	483x399x600mm	483x399x600mm	483x399x600mm	546x985x700 mm
Weight	71Kg	71Kg	71Kg	71Kg	163Kg
Protection	UVP, OCP, OPP, OTP, FAN				
<b>Temperature Range</b>					
Operation	0°C ~40°C				
Storage	-40°C ~85°C				
Humidity	30 %~90 %				
Safety & EMC	CE				

All specifications are subject to change without notice.

### Remarks

- \*1 : Maximum distortion is tested on output 125VAC (150V RANGE) and 250VAC (300V RANGE) with maximum current to linear load.
- \*2 : Load regulation is tested with sinewave and remote sense.
- \*3 : Input power factor is tested on input 220V, full load condition.
- \*4 : Efficiency is tested on input voltage 110V for 61701 and 61702, 220V for 61703, 61704 and 61705.

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