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 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.
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.

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 ∆ 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.

![PULSE](image1)
![LIST](image2)
![STEP](image3)

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.

![Harmonic Waveform](image4)
![Interharmonics Waveform](image5)

EASY-USE SOFTPANEL

![61700 series Softpanel](image6)

![Optional Function](image7)

AEROSPACE TESTING

![MIL-STD-704E Testing](image8)

![RTCA DO-160D Testing](image9)

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 : Transient voltage output function, including WAVEFORM, LIST, PULSE, STEP and INTERHARMONICS mode.
**SPECIFICATIONS**

**Model**
- 61701
- 61702
- 61703
- 61704
- 61705

**AC Output Rating**

<table>
<thead>
<tr>
<th>Model</th>
<th>61701</th>
<th>61702</th>
<th>61703</th>
<th>61704</th>
<th>61705</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>1500 VA</td>
<td>3000 VA</td>
<td>4500 VA</td>
<td>6000 VA</td>
<td>12000 VA</td>
</tr>
<tr>
<td>Per Phase</td>
<td>500 VA</td>
<td>1000 VA</td>
<td>1500 VA</td>
<td>2000 VA</td>
<td>4000 VA</td>
</tr>
</tbody>
</table>

**Voltage**

<table>
<thead>
<tr>
<th>Range</th>
<th>150V/300V</th>
<th>150V/300V</th>
<th>150V/300V</th>
<th>150V/300V</th>
<th>150V/300V</th>
</tr>
</thead>
<tbody>
<tr>
<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>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 V</td>
<td>0.1 V</td>
<td>0.1 V</td>
<td>0.1 V</td>
<td>0.1 V</td>
</tr>
<tr>
<td>Distortion*1</td>
<td>0.3%@50/60Hz</td>
<td>0.3%@50/60Hz</td>
<td>0.3%@50/60Hz</td>
<td>0.3%@50/60Hz</td>
<td>0.3%@50/60Hz</td>
</tr>
</tbody>
</table>

**Load Regulation**

<table>
<thead>
<tr>
<th>Line Regulation</th>
<th>0.1%</th>
<th>0.1%</th>
<th>0.1%</th>
<th>0.1%</th>
<th>0.1%</th>
</tr>
</thead>
</table>

**Line Regulation*2**

<table>
<thead>
<tr>
<th>0.1%</th>
<th>0.1%</th>
<th>0.1%</th>
<th>0.1%</th>
<th>0.1%</th>
</tr>
</thead>
</table>

**Temp. Coefficient**

<table>
<thead>
<tr>
<th>Load Regulation</th>
<th>0.2%</th>
<th>0.2%</th>
<th>0.2%</th>
<th>0.2%</th>
<th>0.2%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>0.2%</th>
<th>0.2%</th>
<th>0.2%</th>
<th>0.2%</th>
<th>0.2%</th>
</tr>
</thead>
</table>

**Input 3-Phase Power (per phase)**

<table>
<thead>
<tr>
<th>Voltage Range</th>
<th>90–250V</th>
<th>90–250V</th>
<th>190–250V</th>
<th>190–250V</th>
<th>190–250V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>47–63Hz</td>
<td>47–63Hz</td>
<td>47–63Hz</td>
<td>47–63Hz</td>
<td>47–63Hz</td>
</tr>
<tr>
<td>Current</td>
<td>9A Max.</td>
<td>10A Max.</td>
<td>10A Max.</td>
<td>10A Max.</td>
<td>28A Max.</td>
</tr>
<tr>
<td>Power Factor *3</td>
<td>0.97 Min.</td>
<td>0.98 Min.</td>
<td>0.98 Min.</td>
<td>0.98 Min.</td>
<td>0.98 Min.</td>
</tr>
</tbody>
</table>

**Measurement**

**Voltage (line-neutral)**

<table>
<thead>
<tr>
<th>Range</th>
<th>150V/300V</th>
<th>150V/300V</th>
<th>150V/300V</th>
<th>150V/300V</th>
<th>150V/300V</th>
</tr>
</thead>
<tbody>
<tr>
<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>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 V</td>
<td>0.1 V</td>
<td>0.1 V</td>
<td>0.1 V</td>
<td>0.1 V</td>
</tr>
</tbody>
</table>

**Current (per phase)**

<table>
<thead>
<tr>
<th>Range</th>
<th>24A</th>
<th>48A</th>
<th>72A</th>
<th>96A</th>
<th>192A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>0.4%+0.3% F.S.</td>
<td>0.4%+0.3% F.S.</td>
<td>0.4%+0.3% F.S.</td>
<td>0.4%+0.3% F.S.</td>
<td>0.4%+0.3% F.S.</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.01 A</td>
<td>0.01 A</td>
<td>0.01 A</td>
<td>0.01 A</td>
<td>0.01 A</td>
</tr>
</tbody>
</table>

**Power (per phase)**

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>0.4%+0.4% F.S.</th>
<th>0.4%+0.4% F.S.</th>
<th>0.4%+0.4% F.S.</th>
<th>0.4%+0.4% F.S.</th>
<th>0.4%+0.4% F.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1 W</td>
<td>0.1 W</td>
<td>0.1 W</td>
<td>0.1 W</td>
<td>0.1 W</td>
</tr>
</tbody>
</table>

**Others**

<table>
<thead>
<tr>
<th>Efficiency *4</th>
<th>68%</th>
<th>77%</th>
<th>81%</th>
<th>82%</th>
<th>82%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (WxHxD)</td>
<td>483x399x600mm</td>
<td>483x399x600mm</td>
<td>483x399x600mm</td>
<td>483x399x600mm</td>
<td>546x985x700mm</td>
</tr>
<tr>
<td>Weight</td>
<td>71Kg</td>
<td>71Kg</td>
<td>71Kg</td>
<td>71Kg</td>
<td>163Kg</td>
</tr>
</tbody>
</table>

**Protection**

- UVP
- OCP
- OPP
- OTP
- FAN

**Temperature Range**

- 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.

Developed and Manufactured by:

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