

# Power Electric Tester

## III. TH6900 Series Programmable DC Power Supply

### Features

- The output range is 3 times of the equal power "rectangular" power supply
- High frequency LLC multi-resonant inverter, the efficiency of the whole machine is as high as 93%
- Active PFC, power factor up to 0.99
- High resolution, high precision; low ripple, low noise
- ≤2ms fast transient response
- The rising edge and falling edge speed of the output are adjustable
- Power supply constant voltage (CV), constant current (CC), constant power (CP) mode
- The master-slave mode supports parallel connection, active current sharing, and parallel connection of up to 10 units of the same type
- OVP, OCP, OPP, OTP, input undervoltage protection, SENSE terminal reverse connection protection
- Built-in function generator
- Equipped with discharge circuit (Uout< 10V within 1s)
- Separate control of power output through external analog interface
- High-brightness color LCD display
- Flexible and powerful sequence test function
- Support SCPI command language
- Interface: RS232, USB HOST,  
Optional (RS485, CAN, GPIB, LAN, analog control interface)

### Application

- General testing for R&D and design verification
- New energy solar cells, new power vehicles, electric bicycles
- Routine test and maintenance of production line workbench
- Automated device integration testing
- Solar photovoltaic simulation test
- Teaching laboratory
- LED test

### Specifications

Parameter	Model	TH6940-60	TH6980-30	TH69200-12.5	TH69360-7.5	TH69500-5	TH69750-3	TH691000-2.5	
Rated Output	Voltage	40V	80V	200V	360V	500V	750V	1000V	
	Current	60A	30A	12.5A	7.5A	5A	3A	2.5A	
	Power	750W							
	Efficient	≤92%	≤92%	≤92%	≤93%	≤93%	≤93%	≤93%	
Load Regulation Rate	Voltage	<=0.05%FS (0-100% Load Regulation Rate)							
	Current	<=0.15%FS (0-100%ΔUDC Load Regulation Rate)							
Line Regulation Rate	Voltage	<=0.02%FS (±10%ΔUAC Input)							
	Current	<=0.05%FS (±10%ΔUAC Input)							
Set Value Resolution	Voltage	10mV	10mV	10mV	10mV	10mV	10mV	10mV	
	Current	10mA	10mA	10mA	1mA	1mA	1mA	1mA	
Readback Value Resolution	Voltage	10mV	10mV	10mV	10mV	10mV	10mV	10mV	
	Current	10mA	10mA	10mA	1mA	1mA	1mA	1mA	
Set Value Accuracy (25°C±5°C)	Voltage	≤±(0.05%+0.04%FS)							
	Current	≤±(0.15%+0.1%FS)							
	Power	≤±0.8%FS							
Readback Value Accuracy (25°C±5°C)	Voltage	≤±(0.05%+0.04%FS)							
	Current	≤±(0.15%+0.1%FS)							
	Power	≤±0.8%FS							
"Ripple and Noise (20Hz-2MHz)"	RMS (20Hz-300kHz)	10mVrms	10mVrms	20mVrms	40mVrms	50mVrms	75mVrms	100mVrms	
	P-P (20Hz-2MHz)	75mVpp	100mVpp	175mVpp	250mVpp	325mVpp	500mVpp	650mVpp	
Rise Time (No Load)	10%-100%	≤2ms							
Rise Time (Full Load)	10%-90%	≤30ms							
Protection		OTP, OVP, OCP, OPP, PF							



### TH6900

Rack mount (mm): 482(W) x 88(H) x 455(D)  
Net weight : 13.5kg

RS232

standard

USB HOST

standard

### Brief Introduction

■ TH6900 series is a programmable switching DC power supply with a wide range of output. There are 21 models of 750W, 1500W and 3000W available. The instrument supports up to 10 master-slave units of the same model in parallel to meet higher output current and output power requirements.

TH6900 series supports sequence test function, allowing users to set a series of voltage, current, power, and automatically output according to the set rules, to better meet the user's application of automatic test and burn-in test. The instrument can store 50 sequences, each sequence contains 22 steps, the function of each step can be set independently, a total of 12 independent functions, including loop control, slope mode output and other rich control functions.

This instrument can output sine wave, square wave, triangle wave, trapezoidal wave, etc. according to the set parameters such as voltage and current. Based on these waveforms, users can form a sequence output. The sequence can be set up to ten steps, and each step can be set to any A waveform and the duration of the waveform, which is convenient for users to test products. In addition, the TH6900 power supply has a solar cell array simulation function. In addition to CC, CV, EN50530 and other modes output through the host computer software, the single machine also has a built-in model for simulating the output curve of the solar cell array.

This series of power supplies also have adjustable rising and falling edge speeds. In all modes (source CV, CC, CP), the rise and fall time can be set, and the setting range is 0.01S~999.99S.

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Isolated Withstand Voltage		1000VDC (Output to Ground)
Master-Slave Control		Connect up to 10 products (via shared bus) with true master-slave operation
Storage		10 groups of working modes; 50 sequences, 20 steps per group
Analog Interface	Specification	Built-in 15-pin D-Sub female connector, electrically isolated
	Signal Range	0-5V or 0-10V (Switchable)
	U/I/P Accuracy	0-10V: $\leq 0.2\%FS$ 0-5V: $\leq 0.4\%FS$
Communication Interface	Standard	RS232, USB HOST
	Optional	RS485, CAN, LAN
Power Supply	Phase	1ph+N+PE
	Voltage	220VAC $\pm 10\%$
	Frequency	45-66Hz
	Power Factor	$\geq 0.99$
Working Environment		Indoor type; Working temperature: 0~50°C, Humidity: <80%, no condensation, Storage temperature: -20~70°C, Altitude: <2000m
Size W×H×D(mm)		482mm×88mm×455mm (W×H×D) Standard Frame, 2U High.
Weight		9.6kg

Parameter	Model	TH6935-100	TH6980-60	TH69200-25	TH69360-15	TH69500-10	TH69750-6	TH691000-5	
Rated Output	Voltage	35V	80V	200V	360V	500V	750V	1000V	
	Current	100A	60A	25A	15A	10A	6A	5A	
	Power	1500W							
	Efficient	$\leq 92\%$	$\leq 92\%$	$\leq 92\%$	$\leq 93\%$	$\leq 93\%$	$\leq 93\%$	$\leq 93\%$	$\leq 93\%$
Load Regulation Rate	Voltage	$\leq 0.05\%FS$ (0-100% Load Regulation Rate)							
	Current	$\leq 0.15\%FS$ (0-100% $\Delta UDC$ Load Regulation Rate)							
Line Regulation Rate	Voltage	$\leq 0.02\%FS$ ( $\pm 10\%\Delta UAC$ Input)							
	Current	$\leq 0.05\%FS$ ( $\pm 10\%\Delta UAC$ Input)							
Set Value Resolution	Voltage	10mV	10mV	10mV	10mV	10mV	10mV	10mV	
	Current	10mA	10mA	10mA	10mA	10mA	1mA	1mA	
Readback Value Resolution	Voltage	10mV	10mV	10mV	10mV	10mV	10mV	10mV	
	Current	10mA	10mA	10mA	10mA	10mA	1mA	1mA	
Set Value Accuracy (25°C $\pm 5^\circ C$ )	Voltage	$\leq \pm(0.05\%+0.04\%FS)$							
	Current	$\leq \pm(0.15\%+0.1\%FS)$							
	Power	$\leq \pm 0.8\%FS$							
Readback Value Accuracy (25°C $\pm 5^\circ C$ )	Voltage	$\leq \pm(0.05\%+0.04\%FS)$							
	Current	$\leq \pm(0.15\%+0.1\%FS)$							
	Power	$\leq \pm 0.8\%FS$							
"Ripple and Noise (20Hz-2MHz)"	RMS (20Hz-300kHz)	10mVrms	10mVrms	20mVrms	40mVrms	50mVrms	75mVrms	100mVrms	
	P-P (20Hz-2MHz)	75mVpp	100mVpp	175mVpp	250mVpp	325mVpp	500mVpp	650mVpp	
Rise Time (No Load)	10%-100%	$\leq 2ms$							
Rise Time (Full Load)	10%-90%	$\leq 30ms$							
Protection	OTP, OVP, OCP, OPP, PF								
Isolated Withstand Voltage		1000VDC (Output to Ground)							
Master-Slave Control		Connect up to 10 products (via shared bus) with true master-slave operation							
Storage		10 groups of working modes; 50 sequences, 20 steps per group							
Analog Interface	Specification	Built-in 15-pin D-Sub female connector, electrically isolated							
	Signal Range	0-5V or 0-10V (Switchable)							
	U/I/P Accuracy	0-10V: $\leq 0.2\%FS$ 0-5V: $\leq 0.4\%FS$							
Communication Interface	Standard	RS232, USB HOST							
	Optional	RS485, CAN, GPIB, LAN							
Power Supply	Phase	1ph+N+PE							
	Voltage	220VAC $\pm 10\%$							
	Frequency	45-66Hz							
	Power Factor	$\geq 0.99$							
Working Environment		Indoor type; Working temperature: 0~50°C, Humidity: <80%, no condensation, Storage temperature: -20~70°C, Altitude: <2000m							
Size W×H×D(mm)		482mm×88mm×455mm (W×H×D) Standard Frame, 2U High.							
Weight		10.8kg							

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## III. TH6900 Series Programmable DC Power Supply

Parameter	Model	TH6935-200	TH6980-120	TH69200-50	TH69360-30	TH69500-20	TH69750-12	TH691000-10
Rated Output	Voltage	35V	80V	200V	360V	500V	750V	1000V
	Current	200A	120A	50A	30A	20A	12A	10A
	Power	3000W						
	Efficient	≤92%	≤92%	≤92%	≤93%	≤93%	≤93%	≤93%
Load Regulation Rate	Voltage	≤0.05%FS (0-100% Load Regulation Rate)						
	Current	≤0.15%FS (0-100%ΔUDC Load Regulation Rate)						
Line Regulation Rate	Voltage	≤0.02%FS (±10%ΔUAC Input)						
	Current	≤0.05%FS (±10%ΔUAC Input)						
Set Value Resolution	Voltage	10mV	10mV	10mV	10mV	10mV	10mV	10mV
	Current	10mA	10mA	10mA	10mA	10mA	10mA	10mA
Readback Value Resolution	Voltage	10mV	10mV	10mV	10mV	10mV	10mV	10mV
	Current	10mA	10mA	10mA	10mA	10mA	10mA	10mA
Set Value Accuracy (25°C±5°C)	Voltage	≤±(0.05%+0.04%FS)						
	Current	≤±(0.15%+0.1%FS)						
	Power	≤±0.8%FS						
Readback Value Accuracy (25°C±5°C)	Voltage	≤±(0.05%+0.04%FS)						
	Current	≤±(0.15%+0.1%FS)						
	Power	≤±0.8%FS						
"Ripple and Noise (20Hz-2MHz)"	RMS (20Hz-300kHz)	10mVrms	10mVrms	20mVrms	40mVrms	50mVrms	75mVrms	100mVrms
	P-P (20Hz-2MHz)	75mVpp	100mVpp	175mVpp	250mVpp	325mVpp	500mVpp	650mVpp
Rise Time (No Load)	10%-100%	≤2ms						
Rise Time (Full Load)	10%-90%	≤30ms						
Protection		OTP, OVP, OCP, OPP, PF						
Isolated Withstand Voltage		1000VDC (Output to Ground)						
Master-Slave Control		Connect up to 10 products (via shared bus) with true master-slave operation						
Storage		10 groups of working modes; 50 sequences, 20 steps per group						
Analog Interface	Specification	Built-in 15-pin D-Sub female connector, electrically isolated						
	Signal Range	0-5V or 0-10V (Switchable)						
	U/I/P Accuracy	0-10V: ≤0.2%FS 0-5V: ≤0.4%FS						
Communication Interface	Standard	RS232, USB HOST						
	Optional	RS485, CAN, GPIB, LAN						
Power Supply	Phase	1ph+N+PE						
	Voltage	220VAC±10%						
	Frequency	45-66Hz						
	Power Factor	≥0.99						
Working Environment		Indoor type; Working temperature: 0~50°C, Humidity: <80%, no condensation, Storage temperature: -20~70°C, Altitude: <2000m						
Size W×H×D(mm)		482mm×88mm×455mm (W×H×D) Standard Frame, 2U High.						
Weight		13.5kg						