TH7100 Series

Programmable AC Power Source

A single-phase, linear-amplifier programmable AC power source for reproducing normal and abnormal mains conditions and measuring key parameters of the product under test. Output voltage is adjustable from 0 to 300 V at 45.0–500 Hz, with high stability and low distortion suited to precision power testing. Three power ratings — 500 W, 1000 W and 2000 W — share the same control platform, front-panel layout and communication interfaces.

3 models · 500–2000 W · 0–300 V AC output, 45.0–500 Hz · front & rear panel output



- **Linear amplifier design** for high stability and low output distortion
- Output **0–300 V AC**, **45.0–500 Hz**, in three power tiers (500 / 1000 / 2000 W)
- Adjustable start/stop phase angle (0–359°) and surge & notch (SD) waveform simulation
- Manual mode (50 memory groups) and programmable sequence mode (50 groups, 9 steps/group), incl. timed output and dimming-mode output
- Fast response time, <100 µs, for rapid load-step testing
- 4.3″ colour TFT display with simultaneous V / I / P / peak current / power factor readout
- Front and rear panel AC output
- Pass/fail sorting with PASS, FAIL and PROCESSING result output
- Full protection suite: HI-A, OVP, LVP, OCP, OPP, OTP, with two-speed smart cooling fan
- RS232 (SCPI & MODBUS) and USB Host/Device standard, plus remote control input/output

Three models, one platform

TH7105
Entry power tier

Rated power	500 W
Max current (≤150 V)	4.2 A
Max current (≤300 V)	2.1 A
Weight	30 kg

TH7110
Mid power tier

Rated power	1000 W
Max current (≤150 V)	8.4 A
Max current (≤300 V)	4.2 A
Weight	40 kg

TH7120
High power tier

Rated power	2000 W
Max current (≤150 V)	16.8 A
Max current (≤300 V)	8.4 A
Weight	75 kg

All three models share the same 0–300 V / 45.0–500 Hz output range, control platform, protection functions and communication interfaces — the difference between models is output power and current capacity only. SCPI and MODBUS protocols are standard across the full range, not exclusive to any one model.

TH7120 uses a different enclosure. Unlike the compact, low-profile chassis shared by TH7105 and TH7110, the 2000 W TH7120 ships in a taller enclosure with a finned cooling front panel and integrated transport casters — see Mechanical specifications on page 2 for exact dimensions and weight.



Applications

Electrical & electronic products

Motors and transformers, general electronic production testing, and lighting products.

Communications, audio & monitoring

Network communication equipment, audio/video equipment, and monitoring equipment.

Simulation & compliance

Simulating AC power specifications of different countries, EMC (electromagnetic compatibility) testing, and aerospace/military equipment.

Technical specifications

Parameter	TH7105	TH7110	TH7120
AC output			
Rated power	500 W	1000 W	2000 W
Output voltage	0–300 Vac		
Output frequency	45.0–500 Hz		
Max current (RMS)	4.2 A (≤150 V) / 2.1 A (≤300 V)	8.4 A (≤150 V) / 4.2 A (≤300 V)	16.8 A (≤150 V) / 8.4 A (≤300 V)
Max current (peak)	12.6 A (≤150 V) / 6.3 A (≤300 V)	25.2 A (≤150 V) / 12.6 A (≤300 V)	50.4 A (≤150 V) / 25.2 A (≤300 V)
Phase	1Ø / 2W		
Total harmonic distortion	≤0.5% (output 80–140 V low range, or 160–280 V high range; resistive load)		
Crest factor	≥4		
Linearity adjustment rate	0.1%±10%		
Load regulation	≤0.5% (resistive load)		
Response time	<100 µs		
AC input			
Phase	1Ø		
Voltage	115 / 230 Vac ±15%		
Frequency	47–63 Hz		
Max input current (230 V)	8 A	16 A	30 A
Power factor	0.7		
Setting parameters			
Voltage	0–300 V, 0.1 V resolution, ±(0.5% of setting + 2 digits)		
Frequency	45.0–500 Hz; resolution 0.1 Hz (<100 Hz) / 1 Hz (≥100 Hz); ±0.02%		
Start / stop phase angle	0–359°, 1° resolution, ±1° (45–65 Hz)		
Measurement parameters			
Voltage	0–300 Vac, 0.1 V resolution, ±(0.5% of reading + 2 digits)		
Frequency	45.0–500 Hz, resolution as above, ±0.1 Hz		
Current	0.000–4.200 A (≤150 V) / 0.000–2.100 A (≤300 V)	0.000–8.400 A (≤150 V) / 0.000–4.200 A (≤300 V)	0.000–16.800 A (≤150 V) / 0.000–8.400 A (≤300 V)
Current res. / accuracy	0.001 A resolution, ±(0.5% of reading + 5 digits)		
Peak current	0.00–12.6 A (≤150 V) / 0.00–6.3 A (≤300 V)	0.00–25.2 A (≤150 V) / 0.00–12.6 A (≤300 V)	0.00–50.4 A (≤150 V) / 0.00–25.2 A (≤300 V)
Peak current res. / accuracy	0.01 A resolution, ±(5% of reading + 2 digits)		
Power range	0–500 W	0–1000 W	0–2000 W
Power resolution	0.1 W	0.1 W	0.1 W (0–1000 W); 1 W (1000–2000 W)
Power accuracy	±(0.6% of reading + 5 digits), at PF > 0.5		
Power factor	0.001–1.000, 0.001 resolution, displayed to 3 significant digits		
General			
Memory	Manual mode: 50 groups · Program mode: 50 groups, 9 steps/group		
Remote signal input	Output ON/OFF; recall manual-mode memory groups 1–7		
Remote signal output	PASS / FAIL / PROCESSING		
Sync signal output	10 V signal, BNC connector		
Protection	HI-A (over set current), OVP, LVP, OCP, OPP, OTP		
Display	4.3″ colour TFT LCD, 480 × 272		
Interfaces	RS232 (SCPI & MODBUS), USB Host, USB Device		
Mechanical			
Dimensions (W×H×D)	430 × 88 × 600 mm	430 × 88 × 600 mm	430 × 178 × 602 mm
Weight	30 kg	40 kg	75 kg

Interfaces

RS232	Remote	USB Host	USB Device	Sync / Signal Out	SCPI / MODBUS
standard	standard	standard	standard	standard	standard



Rear panel (TH7110 shown) — AC input/output terminals, Sync, Signal Out, USB Device, RS232, Remote

Standard accessories

Item	Description
–	EU power cable (Schuko, CEE 7/7)

Notes

Front and rear panel AC output; two-speed smart cooling fan control; boot-hold and password-protected power-on function. Full command set (SCPI/MODBUS) available on request for automated test integration.

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