TH7200 Series

Programmable AC/DC Power Source

A single-phase, linear-amplifier programmable power source that combines a high-speed linear amplifier with an arbitrary waveform generator to deliver precision AC, DC or combined AC+DC output. Built-in and CSV-importable custom waveforms, a 600-step sequencer and a dedicated anomaly-simulation mode make the TH7200 series suited to power-quality testing, motor and transformer evaluation, and simulating mains conditions from different countries.

Dimensions: 430(W) × 177(H) × 610(D) mm · Weight: 27.5 kg



- Single-phase AC, DC or AC+DC output from one linear-amplifier output stage
- Output voltage **0–300 V**, output frequency **1 Hz – 1 kHz**
- 4.3" color TFT display, English UI, numeric keypad and jog-shuttle control
- Built-in waveform library (8 standard shapes) plus CSV-importable custom waveforms, up to **64 sets** stored
- Basic / Step / Simulate operating modes — up to **600 steps** for complex sequences
- Simultaneous display of up to **14 measurement parameters** (Urms, Irms, P, PF and more)
- Simulate mode reproduces power-line anomalies: outage, voltage rise/fall
- Front and rear panel output; software-controlled output switch
- Seven protection modes: HI-A, OVP, LVP, OCP, OCKP, OPP, OTP
- RS232, USB Host/Device, LAN standard; SCPI and MODBUS programming

Two power levels, one platform

TH7205

500 VA AC / 350 W DC

AC rated power	500 VA
DC / AC+DC rated power	350 W
Max. AC current (RMS)	5.0 A (LOW) / 2.5 A (HIGH)
Max. DC current (peak)	3.5 A (LOW) / 1.75 A (HIGH)

TH7210

1000 VA AC / 700 W DC

AC rated power	1000 VA
DC / AC+DC rated power	700 W
Max. AC current (RMS)	10.0 A (LOW) / 5.0 A (HIGH)
Max. DC current (peak)	7.0 A (LOW) / 3.5 A (HIGH)

Output voltage range is identical on both models — LOW: 0–150.0 V AC / ±(1.4–212.0) V DC, HIGH: 0–300.0 V AC / ±(2.8–424.0) V DC. TH7210 delivers twice the rated power and current of TH7205 at the same voltage range. Both models support SCPI and MODBUS programming.

Applications

Design & production

Motors and transformers, electronic production test, lighting, aerospace and military electronics, network communication equipment.

Audio, video & monitoring

Audio and video equipment, monitoring equipment, and other mains-powered electronic products requiring a controlled AC/DC source.

Power quality & EMC

Simulating power specifications of different countries; supplying electromagnetic-compatibility (EMC) test setups.

Technical specifications

Parameter	TH7205	TH7210
AC input		
Phase	1Ø / 2-wire	
Voltage	100–120 V AC, 200–240 V AC	
Frequency	47–63 Hz	
Max. input current	11.3 A / 5.5 A	22.5 A / 10.8 A
Power factor	0.7	
AC output		
Rated power	500 VA	1000 VA
Output voltage range	LOW: 1.0–150.0 V | HIGH: 2.0–300.0 V	
Output voltage resolution	0.1 V	
Output voltage accuracy	±(0.3% of set voltage + 0.6 V)	
Output frequency range	1 Hz – 1000 Hz	
Output frequency resolution	0.01 Hz (1.00–99.99 Hz) | 0.1 Hz (100.0–999.9 Hz)	
Max. current (RMS)	5.0 A (LOW) / 2.5 A (HIGH)	10.0 A (LOW) / 5.0 A (HIGH)
Max. instantaneous current	Max. RMS current × 4 (TYP)	
Power factor (load)	0–1	
DC / AC+DC output		
Rated power	350 W	700 W
Output voltage range	LOW: 1.4–212.0 V | HIGH: 2.8–424.0 V	
Output voltage resolution	0.1 V	
Output voltage accuracy	LOW: ±(0.05% of set voltage + 0.05 V) | HIGH: ±(0.05% of set voltage + 0.1 V)	
Max. current (peak)	3.5 A (LOW) / 1.75 A (HIGH)	7.0 A (LOW) / 3.5 A (HIGH)
Max. instantaneous current	Max. peak current × 3.6 (TYP)	
Ripple noise	≤ 0.15 Vrms	
Additional output parameters		
Line regulation	±0.1%	
Load regulation	LOW: ±0.1 V | HIGH: ±0.2 V	
Total harmonic distortion (THD)	≤ 0.2%	
Response time	30 µs (TYP)	
Energy efficiency	≥ 55%	
Start / end phase setting	0–359°, 1° resolution	
AC+DC superposition limit	LOW: √2 × Vac + |Vdc| ≤ 212.0 V | HIGH: √2 × Vac + |Vdc| ≤ 424.0 V	

Measurement specifications

Parameter	TH7205	TH7210
Voltage range	AC: 0–300 Vac | DC / AC+DC: −424 to 424 V	
Voltage resolution / accuracy	0.1 V | ±(1% of reading + 2 counts)	
Frequency range / accuracy	1 Hz – 1000 Hz | ±(1% of reading + 2 counts)	
Current range (peak)	22 A	44 A
Current resolution	0.01 A	
Current accuracy	RMS: ±(1% of reading + 2 counts) | Peak: ±(5% of reading + 2 counts)	
Power range	0–500 W	0–1000 W
Power resolution / accuracy	0.1 W | ±(1% of reading + 3 counts)	
Power factor resolution / accuracy	0.001 | Calculated and displayed to 3 significant digits	
Measured parameters (up to 14)	Urms, Udc, Upk+, Upk−, Irms, Idc, Ipk+, Ipk−, CFu, CFi, P, S, Q, PF	

General specifications

Parameter	TH7205 / TH7210
Display	4.3" color TFT LCD, 480 × 272, English UI
Operating modes	Basic (single AC / DC / AC+DC output) · Step (complex sequences) · Simulate (AC-only anomaly simulation)
Waveform library	8 built-in waveforms (sine, square, clip, triangle, surge, notch, pre-dimmer, post-dimmer); custom waveforms importable via CSV; up to 64 sets stored
Sequence storage	600 steps
Interfaces	RS232, USB Device, USB Host, LAN
Programming protocol	SCPI, MODBUS
Protection	Set-current protection (HI-A), over-voltage protection (OVP), low-voltage protection (LVP), over-current protection (OCP), over-peak-current protection (OCKP), over-power protection (OPP), over-temperature protection (OTP)
Operating temperature / humidity	0–40 °C / 20–80% RH (non-condensing)
Storage temperature	−20 to 70 °C
Altitude / pollution degree	Up to 2000 m / Pollution degree 2
Safety class	Safety Class I
Dimensions (W × H × D)	430 × 177 × 610 mm
Weight	27.5 kg

Interfaces

RS232	USB Host	USB Device	LAN	SCPI / MODBUS
standard	standard	standard	standard	standard

Both models share the same standard interface set — no optional interface cards are documented for this series.

Waveform library

Sine	Square	Clip	Triangle	Surge	Notch	Pre-dimmer	Post-dimmer

8 waveforms are stored by default; up to 64 waveform sets can be held in the internal library, including user-defined waveforms imported from a CSV file via USB.

Standard accessories

Model	Standard accessory
TH7205	EU power cable (Schuko, CEE 7/7)
TH7210	Circuit breaker (no power cable supplied — AC input wired via rear-panel terminal block)

Applications (detail)

Typical use
Motors & transformers
Electronic production & design
Lighting
Aerospace & military
Network communication
Audio & video equipment
Monitoring equipment
Worldwide mains simulation
EMC equipment

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