TH6400 Series

Linear Multi-Channel Programmable DC Power Supply

Five multi-channel linear DC power supplies covering 5 W to 180 W per channel, from the economy 3-channel TH6402A to the 4-channel TH6402B and the high-current TH6412 / high-voltage TH6413. All models offer series, parallel and synchronous operation between channels, front- and rear-panel output, and 1 mV / 0.1 mA programming resolution on the high-precision models — suited to R&D bench work, production-line testing and automated test-system integration.



TH6402A / TH6402: 215(W)×88(H)×412(D) mm, 8.1 kg · TH6402B: 215(W)×88(H)×473(D) mm, 12 kg · TH6412 / TH6413: 215(W)×88(H)×473(D) mm, 13 kg

- Linear, program-controlled output design — **low ripple, low noise, high stability**
- Series, parallel or synchronous operation between channels, freely combined
- 4.3" colour TFT LCD, 480×272, all channels displayed simultaneously
- 1 mV / 0.1 mA programming and read-back resolution (TH6402/TH6402B/TH6412/TH6413)
- Remote sense (4-wire) compensates for voltage drop in long test leads
- Front- and rear-panel output and sampling terminals, 1/2-rack (2U) chassis
- Over-voltage protection (OVP) with programmable trip points
- Programmable output timer, 0.1 – 99999.9 s; 40 setting files per channel
- Screen-capture and data-logging to USB (voltage/current/time, ~100 ms sampling)*
- SCPI and MODBUS communication protocols standard

Five models, one platform

	TH6402A	TH6402B	TH6402	TH6412	TH6413
	Economy 3-channel	4-channel, high-precision	High-precision 3-channel	High-current, 6 A/channel	High-voltage, 60 V/channel
Channels	3	4	3	3	3
Max power	90 W/ch	90 W/ch	90 W/ch	180 W/ch	180 W/ch
Interfaces	USB Host				
Total power		215 W	210 W	390 W	390 W

TH6402A differs from the other four models: it has USB Host only (no RS232, no USB Device) and coarser programming/read-back resolution and setting accuracy (see page 2) — load/power regulation itself is the same across the series. All models differ mainly in per-channel voltage/current/power rating. GPIB is optional across the series. * Data logging is not available on the TH6402B.

Applications

R&D & design verification

General-purpose bench supply for design verification, ageing and burn-in tests that need stable, low-ripple, low-noise output over long run times.

Production & automated test

Production-line routine testing and maintenance; front/rear-panel output and SCPI/MODBUS support make the series easy to integrate into automated test systems.

Energy & education

Solar photovoltaic simulation, new-energy-vehicle power simulation, and teaching laboratories needing multi-channel, series/parallel-capable supplies.

Rated output & over-voltage protection (0–40 °C)

Model	CH1	CH2	CH3	CH4	Total power[1]
TH6402A	0–30 V / 3 A OVP 0–36 V	0–30 V / 3 A OVP 0–36 V	0–5 V / 3 A OVP 0–10 V	—	195 W
TH6402B	0–30 V / 3 A OVP 0–36 V	0–30 V / 3 A OVP 0–36 V	0–10 V / 3 A OVP 0–16 V	0–5 V / 1 A OVP 0–10 V	215 W
TH6402	0–30 V / 3 A OVP 0–36 V	0–30 V / 3 A OVP 0–36 V	0–6 V / 5 A OVP 0–11 V	—	210 W
TH6412	0–30 V / 6 A OVP 0–36 V	0–30 V / 6 A OVP 0–36 V	0–6 V / 5 A OVP 0–11 V	—	390 W
TH6413	0–60 V / 3 A OVP 0–65 V	0–60 V / 3 A OVP 0–65 V	0–6 V / 5 A OVP 0–11 V	—	390 W

1 Total power is the sum of the per-channel ratings shown.

Regulation, accuracy & noise

Parameter	TH6402A	TH6402B	TH6402	TH6412	TH6413
Load / power regulation — V	≤0.01%+3 mV				
Load / power regulation — I	≤0.1%+3 mA			≤0.01%+3 mA	
Programming resolution — V / I	10 mV / 1 mA	1 mV / 0.1 mA			
Read-back resolution — V / I	10 mV / 1 mA	1 mV / 0.1 mA			
Setting/read-back accuracy — V	≤0.05%+20 mV	≤0.1%+20 mV	≤0.03%+10 mV		
Setting/read-back accuracy — I	≤0.2%+5 mA	≤0.2%+5 mA	≤0.1%+5 mA	≤0.1%+8 mA[3]	≤0.1%+5 mA
Ripple & noise — V (pk-pk / rms)	3 mVp-p / 1 mVrms	3 mVp-p / 1 mVrms	4 mVp-p / 1 mVrms	4 mVp-p / 1 mVrms	4 mVp-p / 1 mVrms
Ripple & noise — I (rms)	3 mArms	3 mArms	5 mArms	4 mArms	5 mArms
Series synchronization error	≤0.02%+5 mA	≤0.2%+10 mA	≤0.05%+10 mA		
Parallel setting accuracy — V	≤0.02%+20 mV	≤0.02%+5 mV	≤0.02%+10 mV		
Parallel setting accuracy — I	≤0.1%+30 mA	≤0.1%+20 mA	≤0.1%+30 mA		

3 TH6412 current accuracy is ≤0.1%+8 mA on CH1/CH2 and ≤0.1%+5 mA on CH3 — channel-to-channel variation on a mixed-power model.

Parameter	TH6402A	TH6402B	TH6402	TH6412	TH6413
Timer	0.1 – 99999.9 s, 0.1 s resolution, per channel				
Memory	40 setting files per channel				
Working temperature	0 – 40 °C				
Rack mount (W×H×D)	215×88×412 mm	215×88×473 mm	215×88×412 mm	215×88×473 mm	
Outline (W×H×D)	235×111×440 mm	235×111×501 mm	235×111×440 mm	235×111×501 mm	
Net weight	8.1 kg	12 kg	8.1 kg	13 kg	

Interfaces

RS232	USB Host	USB Device	SCPI / MODBUS	GPIB
std.*	standard	std.*	standard	optional

* RS232 and USB Device are standard on TH6402B / TH6402 / TH6412 / TH6413. TH6402A has USB Host only — no RS232, no USB Device.

Standard accessories

Item	Description
—	EU power cable (Schuko, CEE 7/7)
YT3007	Test cable
YT3008	Test cable

Optional accessories

Item	Description
TH26035D	High-current test lead
TH26035E	High-current test lead
—	GPIB interface (factory option)

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