TH8300 Series

Modular Programmable DC Electronic Load

A modular, high-power DC electronic load platform for validating power supplies, chargers, battery packs and DC/DC converters. Choose a 5-slot (TH8300) or 2-slot (TH8310) mainframe and populate it with any combination of nine plug-in load modules — single- or dual-channel, 80 V or 600 V, from 100 W to 500 W — to match the exact test requirement, with up to ten channels and 2500 W in a single unit.

TH8300 mainframe: 477(W) × 177(H) × 590(D) mm, 15 kg, 5 module slots · TH8310 mainframe: 255(W) × 177(H) × 590(D) mm, 10.5 kg, 2 module slots



- **Modular design** — mainframe and load modules ordered and installed separately; each module runs independently or under master/slave control
- Up to **10 channels / 2500 W** in one TH8300 mainframe; up to **400 A** when modules are paralleled
- High resolution: **0.1 mV / 10 µA** class
- Dynamic load frequency up to **50 kHz**; sampling up to **500 kHz**
- Four standard modes — CC, CR, CV, CP — plus 12 advanced test modes
- 2.8" 24-bit colour LCD per module; English user interface
- Module parallel/master-slave linking (Power mode or Copy mode)
- Data logging, 40 setting files per module, timing and power-on-hold functions
- Protections: OVP, OCP, OPP, OTP, reverse-polarity (REV), low-voltage (LVP); independent short-circuit test mode
- RS232, USB Host, USB Device, LAN, GPIB and SYSTEM I/O — all standard

Applications

Power supplies

Chargers, switching power supplies, communication power supplies, LED drivers, mobile-phone batteries, power banks.

New energy

Solar cells / modules, EV power systems, electric bicycles.

Power components

Fuses, connectors, relays, sensors and other electronic power components.

Automation & integration

Multi-channel automated test cells built around the modular mainframe.

Interfaces (standard on both mainframes)

RS232	USB Host	USB Device	LAN	GPIB	SYSTEM I/O	SCPI
standard	standard	standard	standard	standard	standard	standard

How it works: mainframe + modules

TH8300 and TH8310 are empty mainframes — the load-carrying electronics live in the plug-in modules, selected independently for each slot. The photos below show the nine available module types (illustrative front panels); a fully populated TH8300, for example, could combine any five of them.


TH8301-80-20


TH8301A-80-20


TH8302-80-40


TH8303-80-60


TH8304-80-80


TH8305-80-80


TH8302-600-10


TH8303-600-15


TH8305-600-30

Mainframe comparison

Parameter	TH8300	TH8310
Module slots	5	2
Max. channels	10	4
Max. unit power (5 × 500 W modules)	2500 W	—
Frame size (W×H×D)	477 × 177 × 590 mm	255 × 177 × 590 mm
Frame weight	15 kg	10.5 kg
Power supply	90–130 VAC or 175–253 VAC, 47–63 Hz, < 300 VA	
Setting storage	40 setting groups (50 status-memory groups)	
Module link modes	Power mode (current shared proportionally to each module's rating) · Copy mode (all linked modules follow the master module's set current)	
Sold as	Empty mainframe — load modules are ordered and installed separately	

Module lineup

Module	Channels	Module power	Input voltage	Input current	Min. operating voltage*
80 V modules — dual-channel					
TH8301-80-20	2	100 W × 2	0–80 V	0–20 A / ch	0.5 V @ 0.2 A
TH8301A-80-20	2	200 W × 2	0–80 V	0–20 A / ch	0.5 V @ 0.2 A
80 V modules — single-channel					
TH8302-80-40	1	200 W	0–80 V	0–40 A	0.5 V @ 0.4 A
TH8303-80-60	1	300 W	0–80 V	0–60 A	0.5 V @ 0.6 A
TH8304-80-80	1	400 W	0–80 V	0–80 A	0.4 V @ 0.8 A
TH8305-80-80	1	500 W	0–80 V	0–80 A	0.4 V @ 0.8 A
600 V modules — single-channel					
TH8302-600-10	1	200 W	0–600 V	0–10 A	2 V @ 0.1 A
TH8303-600-15	1	300 W	0–600 V	0–15 A	2 V @ 0.15 A
TH8305-600-30	1	500 W	0–600 V	0–30 A	2 V @ 0.3 A

* Lowest input voltage at which the module can still sink its full rated current; also specified at 10% and 100% of the current range — see full specification tables. All modules: 85.5(W) × 142(H) × 550(D) mm, 4.2 kg; standard CC / CR / CV / CP modes.

80 V module family — technical specifications

Parameter	TH8301-80-20	TH8301A-80-20	TH8302-80-40	TH8303-80-60	TH8304-80-80	TH8305-80-80
Constant voltage (CV)						
Range / resolution	6 V / 0.1 mV · 16 V / 1 mV · 80 V / 1 mV					
Accuracy	0.05% + 0.1% FS					
Constant current (CC)						
Range / resolution	0–0.2 A/0.01 mA 0–2 A/0.1 mA 0–20 A/1 mA	0–0.2 A/0.01 mA 0–2 A/0.1 mA 0–20 A/1 mA	0–0.4 A/0.01 mA 0–4 A/0.1 mA 0–40 A/1 mA	0–0.6 A/0.01 mA 0–6 A/0.1 mA 0–60 A/1 mA	0–0.8 A/0.01 mA 0–8 A/0.1 mA 0–80 A/1 mA	0–0.8 A/0.01 mA 0–8 A/0.1 mA 0–80 A/1 mA
Accuracy	0.2% + 0.2% FS					
Constant resistance (CR)						
Range (power/V tier)	0.04–80 Ω (6V) 1.4–2.9 kΩ (16V) 6–12 kΩ (80V)	0.04–80 Ω (6V) 1.4–2.9 kΩ (16V) 6–12 kΩ (80V)	0.03–60 Ω (6V) 1.0–2.16 kΩ (16V) 4.3–9 kΩ (80V)	0.015–30 Ω (6V) 0.3–600 Ω (16V) 1.5–3 kΩ (80V)	0.01–20 Ω (6V) 0.36–720 Ω (16V) 1.5–2.9 kΩ (80V)	0.01–20 Ω (6V) 0.3–720 Ω (16V) 1.5–2.9 kΩ (80V)
Resolution	0.1 Ω					
Accuracy*[1]	1%					
Constant power (CP)						
Range / resolution	0–2 W/1 mW 0–10 W/10 mW 0–100 W/100 mW	0–4 W/2 mW 0–20 W/20 mW 0–200 W/200 mW	0–4 W/2 mW 0–20 W/20 mW 0–200 W/200 mW	0–6 W/3 mW 0–30 W/30 mW 0–300 W/300 mW	0–8 W/4 mW 0–40 W/40 mW 0–400 W/400 mW	0–10 W/5 mW 0–50 W/50 mW 0–500 W/500 mW
Accuracy	1%					
Dynamic mode (constant-current)						
Min. working voltage	1.5 V					
Frequency range	100 Hz–50 kHz / 0.01 Hz–1 kHz · accuracy 1 µs/1 ms + 100 ppm					
Duty cycle	1–99% (min. rise time controlled)					
Slew rate (range/res.)	0.04–4 A/ms (0.02–2 A/µs) 0.01 mA/µs res.	0.04–4 A/ms (0.02–2 A/µs) 0.01 mA/µs res.	0.08–8 A/ms (0.04–4 A/µs) 0.01 mA/µs res.	0.12–12 A/ms (0.06–6 A/µs) 0.01 mA/µs res.	0.16–16 A/ms (0.08–8 A/µs) 0.01 mA/µs res.	0.16–16 A/ms (0.08–8 A/µs) 0.01 mA/µs res.
Slew accuracy / min. rise time	10% ± 20 µs / 10 µs					
Measurement (readback)						
Voltage range/res.	0–6 V/0.2 mV · 0–16 V/0.3 mV · 0–80 V/1.4 mV					
Voltage accuracy	0.025% + 0.01% FS (6V/16V) · 0.01% + 0.025% FS (80V)					
Current range/res.	0–0.2 A/0.004 mA 0–2 A/0.04 mA 0–20 A/0.4 mA	0–0.2 A/0.004 mA 0–2 A/0.04 mA 0–20 A/0.4 mA	0–0.4 A/0.008 mA 0–4 A/0.08 mA 0–40 A/0.8 mA	0–0.6 A/0.012 mA 0–6 A/0.12 mA 0–60 A/1.2 mA	0–0.8 A/0.016 mA 0–8 A/0.16 mA 0–80 A/1.6 mA	0–0.8 A/0.016 mA 0–8 A/0.16 mA 0–80 A/1.6 mA
Current accuracy	0.2% + 0.2% FS					
Power range	16/30/100 W	30/60/200 W	30/60/200 W	30/60/300 W	60/60/400 W	60/60/500 W
Power accuracy	0.2% + 0.2% FS					
Protection & mechanical						
Protections	OVP · OCP · OPP · OTP (per module)					
Operating temperature	0–40 °C					
Dimensions / weight	85.5(W) × 142(H) × 550(D) mm / 4.2 kg					

*[1] CR accuracy does not apply below 5% of the current measurement range. Advanced modes (DYN, SWP, CR-LED, BATT, TIMING, MPPT, OCPT, OVPT, OPPT, SINE, LIST, AUTO) share the dynamic-mode ratings above where applicable.

600 V module family — technical specifications

Parameter	TH8302-600-10	TH8303-600-15	TH8305-600-30
Constant voltage (CV)			
Range / resolution	80 V/1 mV · 150 V/10 mV · 600 V/10 mV		
Accuracy	0.05% + 0.1% FS		
Constant current (CC)			
Range / resolution	0–0.1 A/0.005 mA 0–1 A/0.05 mA 0–10 A/0.5 mA	0–0.15 A/0.005 mA 0–1.5 A/0.05 mA 0–15 A/0.5 mA	0–0.3 A/0.005 mA 0–3 A/0.05 mA 0–30 A/0.5 mA
Accuracy	0.2% + 0.2% FS		
Constant resistance (CR)			
Range (power/V tier)	0.2–400 Ω (80V) 3–6 kΩ (150V) 300–300 kΩ (600V)	0.13–270 Ω (80V) 1.9–4 kΩ (150V) 208–200 kΩ (600V)	0.1–200 Ω (80V) 1.5–3 kΩ (150V) 150–150 kΩ (600V)
Resolution	1 Ω		
Accuracy*[1]	1%		
Constant power (CP)			
Range / resolution	0–4 W/2 mW 0–20 W/20 mW 0–200 W/200 mW	0–6 W/3 mW 0–30 W/30 mW 0–300 W/300 mW	0–10 W/5 mW 0–50 W/50 mW 0–500 W/500 mW
Accuracy	1%		
Dynamic mode (constant-current)			
Min. working voltage	3 V		
Frequency range	100 Hz–50 kHz / 0.01 Hz–1 kHz · accuracy 1 µs/1 ms + 100 ppm		
Duty cycle	1–99% (min. rise time controlled)		
Slew rate (range/res.)	0.02–2 A/ms (0.01–1 A/µs) 0.005 mA/µs res.	0.03–3 A/ms (0.015–1.5 A/µs) 0.005 mA/µs res.	0.06–6 A/ms (0.03–3 A/µs) 0.005 mA/µs res.
Slew accuracy / min. rise time	10% ± 20 µs / 10 µs		
Measurement (readback)			
Voltage range/res.	0–80 V/1.5 mV · 0–150 V/2.7 mV · 0–600 V/10.7 mV		
Voltage accuracy	0.025% + 0.01% FS (80/150V) · 0.01% + 0.025% FS (600V)		
Current range/res.	0–0.1 A/0.002 mA 0–1 A/0.02 mA 0–10 A/0.2 mA	0–0.15 A/0.003 mA 0–1.5 A/0.03 mA 0–15 A/0.3 mA	0–0.3 A/0.003 mA 0–3 A/0.03 mA 0–30 A/0.3 mA
Current accuracy	0.2% + 0.2% FS		
Power range	60/200/200 W	90/300/300 W	180/500/500 W
Power accuracy	0.2% + 0.2% FS		
Protection & mechanical			
Protections	OVP · OCP · OPP · OTP (per module)		
Operating temperature	0–40 °C		
Dimensions / weight	85.5(W) × 142(H) × 550(D) mm / 4.2 kg		

*[1] CR accuracy does not apply below 5% of the current measurement range.

Standard accessories

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

Optional accessories

Item	Description
TH26035D	Test cable
TH26035E	Test cable
TH26081	26-pin analog control interface

More cables and fixtures available on request — ask your Techmize contact or authorized distributor.

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