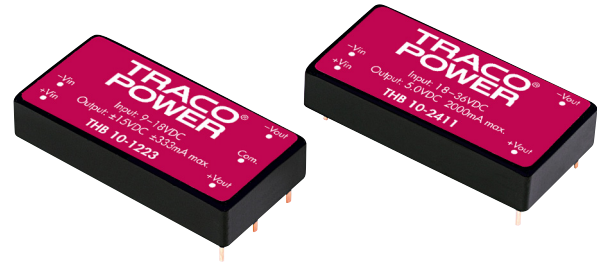


Features

- ◆ Supplementary and reinforced insulation
- ◆ I/O isolation 4200 VACrms rated for 300 Vrms working voltage
- ◆ Medical safety to UL 60601-1 and IEC/EN 60601-1 3rd edition, 2 x MOOP
- ◆ Industrial safety to IEC/EN/UL 60950-1
- ◆ Wide 2:1 input voltage ranges
- ◆ Extended operating temperature range -40°C to 85°C max.
- ◆ Input filter meets EN55022, class A
- ◆ Continuous short-circuit protection
- ◆ High reliability
- ◆ 3-year product warranty



The Traco THB 10 series is a new range of high performance DC/DC converter modules with a reinforced insulation system. The I/O- isolation voltage is specified for 4200 VACrms. The product comes in a compact 2"x1" industry standard package. All 12 models features wide 2:1 input voltage range and fully regulated output voltage. The THB 10 DC/DC converters offer an economical solution for demanding applications in industrial and medical instrumentation requesting a certified supplementary or reinforced insulation system to comply with industrial or latest medical safety standards.

Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
THB 10-1211	9 - 18 VDC (12 VDC nominal)	5.1 VDC	1600 mA	76 %
THB 10-1212		12.0 VDC	835 mA	80 %
THB 10-1222		±12.0 VDC	±417 mA	80 %
THB 10-1223		±15.0 VDC	±333 mA	81 %
THB 10-2411	18 - 36 VDC (24 VDC nominal)	5.1 VDC	2000 mA	77 %
THB 10-2412		12.0 VDC	835 mA	81 %
THB 10-2422		±12.0 VDC	±417 mA	81 %
THB 10-2423		±15.0 VDC	±333 mA	82 %
THB 10-4811	36 - 75 VDC (48 VDC nominal)	5.1 VDC	2000 mA	77 %
THB 10-4812		12.0 VDC	835 mA	81 %
THB 10-4822		±12.0 VDC	±417 mA	81 %
THB 10-4823		±15.0 VDC	±333 mA	82 %

Input Specifications

Input current at no load / full load	12 Vin; 5 VDC model: 30 mA typ. / 877 mA typ. 12 Vin; other models: 30 mA typ. / 1040 mA typ. 24 Vin; 5 VDC model: 20 mA typ. / 541 mA typ. 24 Vin; other models: 20 mA typ. / 515 mA typ. 48 Vin; 5 VDC model: 10 mA typ. / 271 mA typ. 48 Vin; other models: 10 mA typ. / 255 mA typ.
Start-up voltage / under voltage shut down	12 Vin models: 9 VDC / 8.5 VDC typ. 24 Vin models: 18 VDC / 16 VDC typ. 48 Vin models: 36 VDC / 34 VDC typ.
Recommended external input fuse (slow blow)	12 Vin models: 3 A 24 Vin models: 1.5 A 48 Vin models: 0.75 A
Surge voltage (1 sec. max.)	12 Vin models: 25 VDC max. 24 Vin models: 50 VDC max. 48 Vin models: 100 VDC max.
Input filter	EN 55022 class A and FCC, level A

Output Specifications

Voltage set accuracy	±1.0 %
Regulation	– Input variation Vin min. to Vin max. 0.5 % max. – Load variation 15 – 100 %: single output models: 1.0 % max. dual output models: 2.0 % max. balanced load
Minimum load	no minimum load required
Ripple and noise (20 MHz bandwidth)	5 VDC models: 100 mVp-p max. other models: 150 mVp-p max.
Transient Response (25% load step change)	600 µs max.
Current limitation	>120 % Iout max.
Short circuit protection	continuous
Capacitive load	5 VDC output models: 1000 µF max. 12 VDC output models: 470 µF max. dual output models: 220 µF max. (each output)

Isolation / Safety Standards

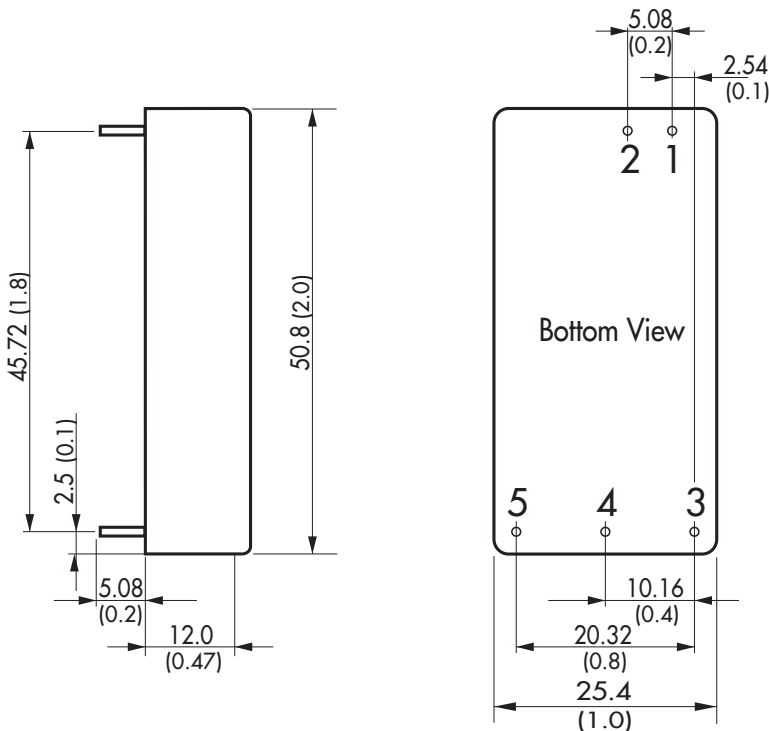
Isolation test voltage (flash tested 1 sec.)	6000 Vpk
I/O isolation voltage (50Hz, 60sec.)	4200 VACrms
Leakage current (at 240VAC, 60Hz)	10 µA
I/O isolation capacity (at 100KHz, 1V)	60 pF typ.
I/O isolation resistance (at 500VDC)	>10 Gohm
Safety standards	cUL/UL60950-1, CSA C22.2 No. 60950-1-03 UL60601-1, CSA C22.2 No. 601-1 IEC/EN 60950-1, IEC/EN 60601-1 3rd Edition 2 MOOP
Safety approvals	– CB test certificate according IEC 60950-1 www.tracopower.com/products/thb10-cb60950.pdf – CB test certificate according IEC 60601-1(3rd edition) www.tracopower.com/products/thb10-cb60601.pdf – UL certificate according UL 60950-1 www.tracopower.com/products/thb10-ul60950.pdf – UL certificate according UL 60601-1 www.tracopower.com/products/thb10-ul60601.pdf

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

General Specifications

Temperature ranges	- Operating - Case - Storage	-40°C to +75°C +95°C max. -50°C to +125°C
Derating		2.5 %/K above 55°C
Humidity (non condensing)		95 % rel H max.
Altitude		4000m
Temperature coefficient		±0.02 %/K typ.
Reliability, calculated MTBF (MIL-HDBK-217F @ 25°C, ground benign)		>1'000'000 h
Switching frequency		150 kHz typ. (puls width modulation)
Casing material		non conductive plastic (UL 94V-0-rated)
Pin Material		copper alloy with gold plate over Nickel subplate
Weight		24.5 g (0.86 oz)
Soldering temperature		max. 260°C / 10 sec.

Outline Dimensions



Pin-Out		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin(GND)	-Vin(GND)
3	+Vout	+Vout
4	No pin	Common
5	-Vout	-Vout

Dimensions in [mm], () = Inch
 Pin diameter \varnothing 1.0 \pm 0.05 (0.04 \pm 0.002)
 Tolerances \pm 0.25 (\pm 0.01)
 Pin pitch tolerances \pm 0.13 (\pm 0.005)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at www.tracopower.com