

Features

- ◆ Wide 4:1 input voltage range
- ◆ Compact SIP-8 package
- ◆ Cost optimized design
- ◆ Temperature range -40°C to +85°C
- ◆ I/O isolation 1500 VDC
- ◆ Remote On/Off control
- ◆ 3-year product warranty



The TMR-3WIE series is a family of isolated 3 W dc-dc converter modules with regulated output, featuring wide 4:1 input voltage ranges. The product comes in a compact SIP-8 plastic package with small footprint occupying only 2.0 cm² (0.3 square in.) of board space.

An excellent efficiency allows -40°C to +85°C operation temperature. Further features include remote On/Off control and continuous short circuit protection. The compact dimensions and cost optimized design make this converters an ideal solution for applications in communication equipment, instrumentation and industrial electronics.

Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TMR 3-1210WIE TMR 3-1211WIE TMR 3-1212WIE TMR 3-1213WIE TMR 3-1221WIE TMR 3-1222WIE TMR 3-1223WIE	4.5 – 18 VDC (12 VDC nominal)	3.3 VDC 5.0 VDC 12 VDC 15 VDC ±5.0 VDC ±12 VDC ±15 VDC	700 mA 600 mA 250 mA 200 mA ±300 mA ±125 mA ±100 mA	74 % 78 % 80 % 80 % 70 % 80 % 80 %
TMR 3-2410WIE TMR 3-2411WIE TMR 3-2412WIE TMR 3-2413WIE TMR 3-2421WIE TMR 3-2422WIE TMR 3-2423WIE	9 – 36 VDC (24 VDC nominal)	3.3 VDC 5.0 VDC 12 VDC 15 VDC ±5.0 VDC ±12 VDC ±15 VDC	700 mA 600 mA 250 mA 200 mA ±300 mA ±125 mA ±100 mA	75 % 80 % 81 % 81 % 79 % 80 % 81 %
TMR 3-4810WIE TMR 3-4811WIE TMR 3-4812WIE TMR 3-4813WIE TMR 3-4821WIE TMR 3-4822WIE TMR 3-4823WIE	18 – 75 VDC (48 VDC nominal)	3.3 VDC 5.0 VDC 12 VDC 15 VDC ±5.0 VDC ±12 VDC ±15 VDC	700 mA 600 mA 250 mA 200 mA ±300 mA ±125 mA ±100 mA	74 % 79 % 79 % 79 % 79 % 79 % 80 %

Input Specifications

Input current at no load (nominal input voltage)	12 V models: 60 mA typ. 24 V models: 25 mA typ. 48 V models: 15 mA typ.
Surge voltage (1000 msec. max.)	12 V models: 25 V max. 24 V models: 50 V max. 48 V models: 100 V max.
Start-up voltage / under voltage lockout	12 V models: 4.5 VDC / 4 VDC or lower 24 V models: 9 VDC / 8 VDC or lower 48 V models: 18 VDC / 16 VDC or lower long term operation at undervoltage will damage the converter!
max. reverse polarity input current	1.0 A
Recommended Input Fuse (Slow Blow)	12 V models: 1500 mA 24 V models: 700 mA 48 V models: 350 mA
Conducted noise (input)	EN 55022 level A, FCC part 15, level A with external components (see application note)

Output Specifications

Voltage set accuracy	– Single Output Models – Dual Output Models	±1 % max. ±2 % max. (balanced load)
Regulation	– Input variation V_{in} min. to V_{in} max. – Load variation 25 – 100%	0.5 % max. 1.0 % max.
Minimum load		25 % of rated max. load (operation at lower load condition is safe but a higher output ripple will be experienced)
Temperature coefficient		0.02 %/K
Ripple and noise (20 MHz bandwidth)		75 mVp-p max.
Transient response setting time (25% load step change)		500 µs max.
Short circuit protection		continuous, automatic recovery
Capacitive load	3.3 VDC models: 5 VDC models: 12 VDC models: 15 VDC models: ±5 VDC models: ±12 VDC models: ±5 VDC models:	1'760 µF max. 1'000 µF max. 170 µF max. 110 µF max. 470 µF max. (each output) 100 µF max. (each output) 47 µF max. (each output)

General Specifications

Temperature ranges	– Operating – Case temperature – Storage	–40°C to +85°C (with derating) +105°C max. –55°C to +125°C
Load derating		3.3 %/K above +70°C
Humidity (non condensing)		95 % rel. H max.
Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)		> 800'000 h
Isolation voltage (60 sec.)	– Input/Output	1'500 VDC
Isolation capacitance	– Input/Output	200 pF typ.
Isolation resistance	– Input/Output (500 VDC)	>1 GOhm

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

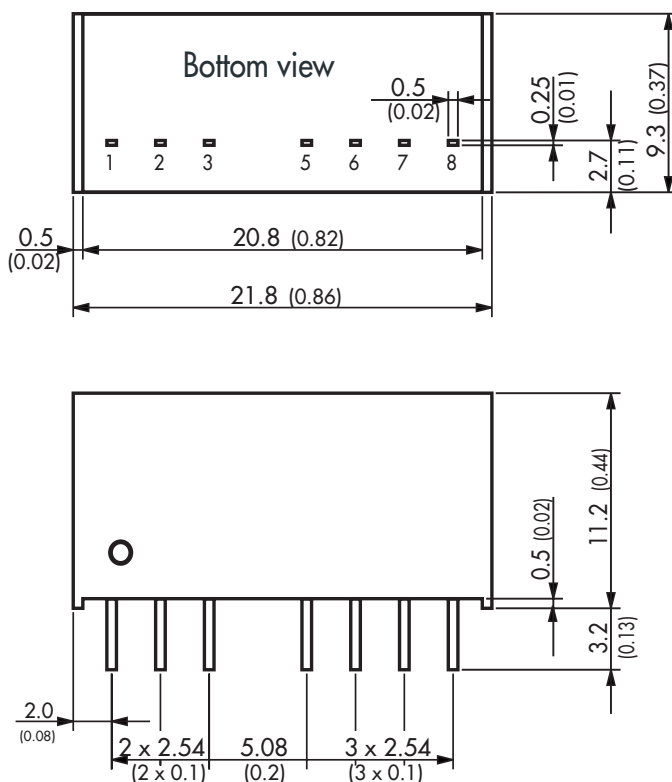
General Specifications

Switching frequency	350 kHz typ. (PFM)
Remote On/Off	– On: < 0.6 VDC or open circuit – Off: 2.7 to 15 VDC (ref. to -V_{in}) – Off standby current: 2.5 mA max. – Off control input current: 1 mA max.
Safety standards	UL 60950-1, IEC/EN 60950-1
Safety approvals	– CB test certificate according IEC 60950-1 www.tracopower.com/products/tmr3wie-cb.pdf – CSA certificate for UL/cUL 60950-1 www.tracopower.com/products/tmr3wie-csa.pdf
Casing material	non-conductive plastic (UL 94V-0 rated)
Potting material	Silicon, (UL 94V-0 rated)
Weight	4.8 g (0.17 oz)
Soldering temperature	max. 260°C / 10 sec.
Environmental compliance	– Reach www.tracopower.com/products/tmr3wie-reach.pdf – RoHS RoHS directive 2011/65/EU

Physical Specifications

Application note: www.tracopower.com/products/tmr3wie-application.pdf

Outline Dimensions



Pinout		
Pin	single output	dual output
1	-V _{in} (GND)	-V _{in} (GND)
2	+V _{in} (V _{cc})	+V _{in} (V _{cc})
3	Remote On/Off	Remote On/Off
5	ntc.	ntc.
6	+V _{out}	+V _{out}
7	-V _{out}	Common
8	ntc.	-V _{out}

ntc. = Not to connect

Dimensions in [mm], () = Inch
Tolerances: ±0.5 (±0.02)
Pin pitch tolerances: ±0.25 (±0.01)

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