

- Compact SIP-8 package
- Wide 4:1 input voltage range
- Temperature range -40° to $+70^{\circ}\text{C}$ without derating
- High efficiency up to 83%
- I/O isolation 1600 VDC
- Protection against short-circuit and over load
- Fully regulated outputs
- Remote On/Off control
- 3-year product warranty



The TMR 4WI is a regulated 4 Watt DC/DC converter series with 4:1 input voltage range. It comes in a compact SIP-8 package featuring single and dual output models, I/O isolation voltage of 1600 VDC and protection against short-circuit and over load. Being a 4 Watt converter this series acts as an excellent gap closer between the more common 3 & 6 Watt converters. It offers a cost-efficient alternative to 5 and 6 Watt converters in applications where a 3 Watt converter would operate at the absolute technical limits (e.g. output power). The intelligent design provides efficiencies up to 83% and a temperature range of -40°C to $+70^{\circ}\text{C}$ without derating which enables an unrestricted use of this converter series in applications with demanding temperature requirements. Additionally, the integrated remote On/Off function offers a convenient way to control your application. Certified according to the latest IEC/EN/UL 62368-1 industrial standard the TMR 4WI is designed to deliver a high quality, cost efficient and compact solution for many applications.

Models						
Order Code	Input Voltage Range	Output 1		Output 2		Efficiency typ.
		Vnom	I _{max}	Vnom	I _{max}	
TMR 4-2411WI	9 - 36 VDC (24 VDC nom.)	5 VDC	800 mA			79 %
TMR 4-2412WI		12 VDC	333 mA			83 %
TMR 4-2413WI		15 VDC	266 mA			83 %
TMR 4-2415WI		24 VDC	166 mA			83 %
TMR 4-2422WI		+12 VDC	166 mA	-12 VDC	166 mA	83 %
TMR 4-2423WI		+15 VDC	133 mA	-15 VDC	133 mA	83 %
TMR 4-4811WI	18 - 75 VDC (48 VDC nom.)	5 VDC	800 mA			78 %
TMR 4-4812WI		12 VDC	333 mA			82 %
TMR 4-4813WI		15 VDC	266 mA			82 %
TMR 4-4815WI		24 VDC	166 mA			82 %
TMR 4-4822WI		+12 VDC	166 mA	-12 VDC	166 mA	82 %
TMR 4-4823WI		+15 VDC	133 mA	-15 VDC	133 mA	82 %

Input Specifications

Input Current	- At no load	24 Vin models: 20 mA typ. 48 Vin models: 10 mA typ.
	- At full load	24 Vin models: 202 mA typ. 48 Vin models: 102 mA typ.
Surge Voltage		24 Vin models: 50 VDC max. (1 s max.) 48 Vin models: 100 VDC max. (1 s max.)
Recommended Input Fuse	(The need of an external fuse has to be assessed in the final application.)	
Input Filter	Internal Capacitor	

Output Specifications

Voltage Set Accuracy		±1% max.
Regulation	- Input Variation (Vmin - Vmax)	single output models: 0.5% max. dual output models: 0.5% max.
	- Load Variation (0 - 100%)	single output models: 1% max. dual output models: 1% max. (Output 1) 1% max. (Output 2)
	- Voltage Balance (symmetrical load)	dual output models: 2% max.
	- Cross Regulation (25% / 100% asym. load)	dual output models: 5% max.
Ripple and Noise	- 20 MHz Bandwidth	80 mVp-p max.
Capacitive Load	- single output	5 Vout models: 1'800 µF max.
		12 Vout models: 1'000 µF max.
		15 Vout models: 820 µF max.
		24 Vout models: 470 µF max.
	- dual output	12 / -12 Vout models: 560 / 560 µF max. 15 / -15 Vout models: 390 / 390 µF max.
Minimum Load		Not required
Temperature Coefficient		±0.02 %/K max.
Start-up Time		30 ms typ.
Short Circuit Protection		Continuous, Automatic recovery
Overload Protection		Foldback Mode
Output Current Limitation		160% typ. of Iout max.
Transient Response	- Response Deviation	3% typ. / 5% max. (25% Load Step)
	- Response Time	250 µs typ. (25% Load Step)

Safety Specifications

Safety Standards	- IT / Multimedia Equipment	EN 62368-1 IEC 62368-1 UL 62368-1
	- Certification Documents	www.tracopower.com/overview/tmr4wi

EMC Specifications

EMI Emissions	- Conducted Emissions	EN 55032 class A (with external filter) EN 55032 class B (with external filter) FCC Part 15 class A (with external filter) FCC Part 15 class B (with external filter)
	- Radiated Emissions	EN 55032 class A (with external filter) EN 55032 class B (with external filter) FCC Part 15 class A (with external filter) FCC Part 15 class B (with external filter)
		External filter proposal: www.tracopower.com/overview/tmr4wi

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

EMS Immunity	<ul style="list-style-type: none"> - Electrostatic Discharge - RF Electromagnetic Field - EFT (Burst) / Surge - Conducted RF Disturbances - PF Magnetic Field 	EN 55024 (IT Equipment) EN 55035 (Multimedia) Air: EN 61000-4-2, ± 8 kV, perf. criteria A Contact: EN 61000-4-2, ± 6 kV, perf. criteria A EN 61000-4-3, 10 V/m, perf. criteria A EN 61000-4-4, ± 2 kV, perf. criteria A EN 61000-4-5, ± 1 kV, perf. criteria A External filter proposal: www.tracopower.com/overview/tmr4wi EN 61000-4-6, 10 Vrms, perf. criteria A Continuous: EN 61000-4-8, 100 A/m, perf. criteria A 1 s: EN 61000-4-8, 1000 A/m, perf. criteria A
--------------	--	---

General Specifications

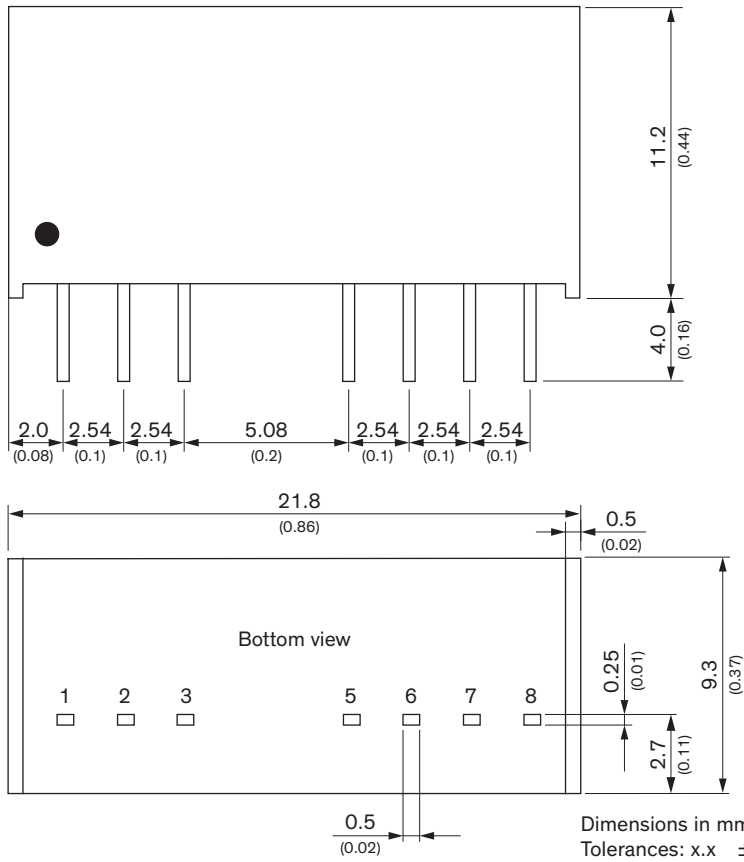
Relative Humidity		95% max. (non condensing)
Temperature Ranges	<ul style="list-style-type: none"> - Operating Temperature - Case Temperature - Storage Temperature 	-40°C to +85°C +100°C max. -55°C to +125°C
Power Derating	- High Temperature	3.33 %/K above 70°C
Cooling System		Natural convection (20 LFM)
Remote Control	<ul style="list-style-type: none"> - Voltage Controlled Remote - Off Idle Input Current 	On: < 0.6 VDC or open circuit Off: 6 to 15 VDC 2.5 mA typ.
Altitude During Operation		6'000 m max.
Switching Frequency		100 kHz min. (PFM)
Insulation System		Functional Insulation
Isolation Test Voltage	<ul style="list-style-type: none"> - Input to Output, 60 s - Input to Output, 1 s 	1'600 VDC 1'920 VDC
Isolation Resistance	- Input to Output, 500 VDC	1'000 M Ω min.
Isolation Capacitance	- Input to Output, 100 kHz, 1 V	200 pF typ.
Reliability	- Calculated MTBF	2'860'000 h (MIL-HDBK-217F, ground benign)
Housing Material		Non-conductive Plastic (UL94 V-0 rated)
Pin Material		Phosphor Bronze (C5191)
Pin Foundation Plating		Nickel (1 μ m min.)
Pin Surface Plating		Tin (3 - 5 μ m), matte
Connection Type		THD (Through-Hole Device)
Weight		4.8 g
Environmental Compliance	<ul style="list-style-type: none"> - REACH Declaration - RoHS Declaration 	www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant www.tracopower.com/info/rohs-declaration.pdf Exemptions: 7a

Supporting Documents

Overview Link (for additional Documents)	www.tracopower.com/overview/tmr4wi
--	--

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

Outline Dimensions



Pinout		
Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote On/Off	Remote On/Off
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

NC: Not connected

Dimensions in mm (inch)
 Tolerances: x.x ±0.5 (±0.02)
 x.xx ±0.25 (±0.01)
 Pins: ±0.1 (±0.004)

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Isolated DC/DC Converters](#) category:

Click to view products by [TRACO Power](#) manufacturer:

Other Similar products are found below :

[ESM6D044440C05AAQ](#) [FMD15.24G](#) [PSL486-7LR](#) [Q48T30020-NBB0](#) [JAHW100Y1](#) [SPB05C-12](#) [SQ24S15033-PS0S](#) [18952](#) [19-130041](#)
[CE-1003](#) [CE-1004](#) [GQ2541-7R](#) [RDS180245](#) [MAU228](#) [J80-0041NL](#) [DFC15U48D15](#) [XGS-0512](#) [XGS-1205](#) [XGS-1212](#) [XGS-2412](#) [XGS-2415](#) [XKS-1215](#) [06322](#) [NCT1000N040R050B](#) [SPB05B-15](#) [SPB05C-15](#) [L-DA20](#) [DCG40-5G](#) [QME48T40033-PGB0](#) [XKS-2415](#) [XKS-2412](#)
[XKS-1212](#) [XKS-1205](#) [XKS-0515](#) [XKS-0505](#) [XGS-2405](#) [XGS-1215](#) [XGS-0515](#) [PS9Z-6RM4](#) [73-551-5038I](#) [AK1601-9RT](#) [VI-N61-CM](#) [VI-R5022-EXWW](#) [PSC128-7iR](#) [RPS8-350ATX-XE](#) [DAS1004812](#) [PQA30-D24-S24-DH](#) [VI-M5F-CQ](#) [VI-LN2-EW](#) [VI-PJW01-CZY](#)