DC/DC Converters

TEN 15WI Series, 15 Watt

UL 60950-1

Features

- Ultra-wide 4:1 input range
- High efficiency up to 86 %
- Extended operating temperature range –40°C to +85°C max.
- Indefinite short circuit protection
- I/O isolation 1500 VDC
- Built-in filter meets EN 55022, Class A and FCC, Level A without external components
- Remote On/Off
- Industry standard pinout
- Six-side shielded case
- Lead free design, fully RoHS compliant
- 3–year product warranty

The TEN 15WI series of DC/DC converters, comprising 10 different models, has been designed for a wide range of applications including communications, industrial systems and battery powered equipments. Full SMD-design with use of ceramic chip capacitors guarantees a high reliability and a long lifetime. Other features of this converters are internal filter to meet EN 55022, class A and FCC, level A and an extended temperature range of –40°C to +85°C.

Models

Ordercode	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TEN 15-2410WI	9 – 36 VDC (24 VDC nominal)	3,3 VDC	3'000 mA	78 %
TEN 15-2411WI		5,1 VDC	2'950 mA	82 %
TEN 15-2412WI		12 VDC	1'250 mA	85 %
TEN 15-2422WI		±12 VDC	±625 mA	85 %
TEN 15-2423WI		±15 VDC	±500 mA	86 %
TEN 15-4810WI	18 – 75 VDC (48 VDC nominal)	3,3 VDC	3'000 mA	78 %
TEN 15-4811WI		5,1 VDC	2'950 mA	82 %
TEN 15-4812WI		12 VDC	1'250 mA	85 %
TEN 15-4822WI		±12 VDC	±625 mA	85 %
TEN 15-4823WI		±15 VDC	±500 mA	86 %

Input Specifications

Input current at no load		24 Vin models:	25 mA typ.
		48 Vin models:	15 mA typ.
Input current at full load	24 Vin;	3.3 Vout models:	528 mA typ.
	24 Vin;	other output models:	740 mA typ.
	48 Vin;	3.3 Vout models:	264 mA typ.
	48 Vin;	other output models:	370 mA typ.
Surge voltage (100 msec. max.)		24 Vin models:	50 V max.
		48 Vin models:	100 V max.
Conducted noise (input)			EN 55022 level A, FCC part 15, level A

Output Specifications

Voltage set accuracy			±1 %
Regulation	– Input variation Vin min. to Vin max.		0.5 % max.
	– Load variation 10 – 100 %		1 % max.
Ripple and noise (20 MHz Bandwidth)			80 mVpk-pk max.
Temperature coefficient			±0.02 %/K
Output current limitation			>110 % of Iout max., foldback
Short circuit protection			indefinite (automatic recovery)
Capacitive load		single output models:	470 µF max.
		dual output models:	220 µF max.

General Specifications

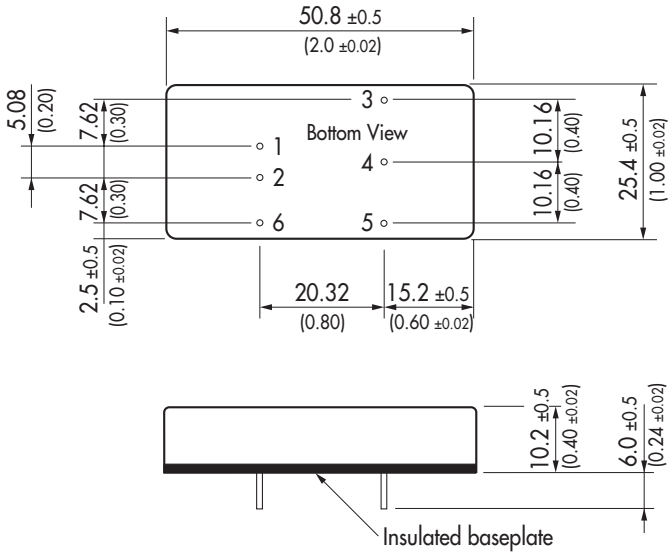
Temperature ranges	– Operating	–40°C to +85°C (–40F to +185°F)
	– Case temperature	+100°C max.
	– Storage	–55°C to +125°C (–67°F to +257°F)
Load derating	– without heatsink	2.5 %/K above 60°C
	– with heatsink	3.3 %/K above 70°C
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)		>700'000 h
Isolation voltage (60 sec.)	– Input/Output	1'500 VDC
Isolation capacitance	– Input/Output	1200 pF typ
Isolation resistance	– Input/Output (500 VDC)	>1'000 MOhm
Switching frequency (fixed)		330 kHz typ. (pulse width modulation)
Remote On/Off:	– On:	2.5 ... 5.5 VDC or open circuit.
	– Off:	-0.7 ... 0.8 VDC or short circuit pin 2 and pin 6
	– Off idle current:	10 mA max.
Safety approvals		cUL/UL 60950-1, IEC/EN 60950-1
	– Certification documents	www.tracopower.com/overview/ten15wi
Environmental compliance	– Reach	www.tracopower.com/info/reach-declaration.pdf
	– RoHS	RoHS directive 2011/65/EU

Physical Specifications

Casing material	copper, nickel plated
Baseplate material	non conductive FR4
Potting material	Epoxy (UL 94 V-0 rated)
Weight	32 g (1.09oz)
Soldering temperature	max. 265°C / 10 sec.

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

Outline Dimensions



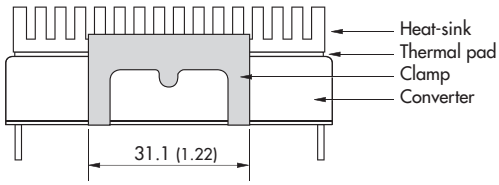
Pin-Out		
Pin	**Single**	**Dual**
1	+Vin (Vcc)	+Vin (Vcc)
2	–Vin (GND)	–Vin (GND)
3	+Vout	+Vout
4	No pin	Common
5	–Vout	–Vout
6	Remote On/Off	

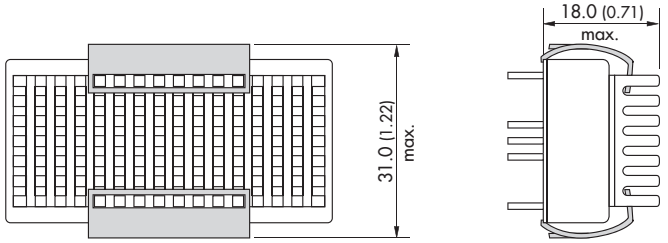
Dimensions in [mm], () = Inch
Pin diameter: 1.0 ±0.05 (0.039 ±0.002)
Pin pitsch tolerances: ±0.25 (±0.01)
Casing tolerances: ±0.5 (±0.02)

Supporting documents: www.tracopower.com/overview/ten15wi

Heat-Sink (Option)

Heat-sink TEN-HS4 (optional)





Order code: **TEN-HS4**
(cont.: heat-sink, thermal pad, 2 clamps)
Material: Aluminum
Finish: Anodic treatment (black)
Weight: 9 g (0.31oz) without converter
Thermal impedance after assembling: 10 K/W

Note:
Before attaching the heatsink, the product label on converter has to be removed for optimal performance.
For volume orders we can supply the converters with heatsink already mounted. Please contact us for a relative quotation.