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DC/DC Converter

TEL 8WI Series, 8 Watt

- Ultra compact 8 Watt converter in DIP-16 metal casing
- Ultra wide 4:1 input voltage range
- Operating temperature range -40°C to +80°C
- Built-In EN 55032 class A filter
- Protection against short circuit and overload condition



The TEL 8WI series is a range of isolated 8 Watt converters which come in a very compact DIP-16 metal package. They offer an ultra wide 4:1 input voltage range and feature a high efficiency of up to 86% which allows an operation temperature of up to 70°C at full load and up to 80°C with 50% load. The converters have an internal input filter to comply with conducted emission EN 55032 class A. The TEL 8WI Series models are an economical solution for space critical and cost sensitive applications in instrumentation, IT and industrial electronics.

Models				
Order code	Input voltage	Output voltage	Output current max.	Efficiency typ.
TEL 8-2410WI	9 - 36 VDC (nominal 24 VDC)	3.3 VDC	2000 mA	78 %
TEL 8-2411WI		5.0 VDC	1600 mA	82 %
TEL 8-2412WI		12 VDC	665 mA	85 %
TEL 8-2413WI		15 VDC	535 mA	85 %
TEL 8-2415WI		24 VDC	335 mA	86 %
TEL 8-2422WI		±12 VDC	±335 mA	85 %
TEL 8-2423WI		±15 VDC	±265 mA	86 %
TEL 8-4810WI	18 - 75 VDC (nominal 48 VDC)	3.3 VDC	2000 mA	78 %
TEL 8-4811WI		5.0 VDC	1600 mA	81 %
TEL 8-4812WI		12 VDC	665 mA	85 %
TEL 8-4813WI		15 VDC	535 mA	85 %
TEL 8-4815WI		24 VDC	335 mA	86 %
TEL 8-4822WI		±12 VDC	±335 mA	86 %
TEL 8-4823WI		±15 VDC	±265 mA	86 %

Input Specifications

Input current no load	24 Vin models: 10 mA typ. 48 Vin models: 8 mA typ.
Surge voltage (1 sec. max.)	24 Vin models: 50 V max. 48 Vin models: 100 V max.
Start-up voltage	24 Vin models: 9 VDC (or lower) 48 Vin models: 18 VDC (or lower)
Under voltage shut down	24 Vin models: 8 VDC typ. 48 Vin models: 16 VDC typ.
EMC emissions	<ul style="list-style-type: none"> – Conducted suppression on input – Radiated suppression on input – External filter proposal see Application note
EMC immunity	<ul style="list-style-type: none"> – ESD (electrostatic discharge) – Radiated immunity – Fast transient / surge (with external input capacitor) – Conducted immunity – Magnetic field immunity

EN 55032 class A (internal filter)
EN 55032 class B (external filter)
EN 55032 class A (external filter)
www.tracopower.com/overview/tel8wi

EN 55024
EN 61000-4-2, ±8 kV/±6 kV, perf. criteria A
EN 61000-4-3, 20 V/m, perf. criteria A
EN 61000-4-4, ±2 kV, perf. criteria A
EN 61000-4-5, ±1 kV perf. criteria A
External input capacitor: Nippon chemi-con KY 220 µF / 100 V
EN 61000-4-6, 10 Vrms, perf. criteria A
EN 61000-4-8, 100 A/m, perf. criteria A

Output Specifications

Voltage set accuracy	±2 % max.
Voltage balance (dual output models)	2 % max.
Regulation	<ul style="list-style-type: none"> – Input variation – Load variation 0 – 100 %
Minimum load	not required
Temperature coefficient	±0.02 %/K typ.
Ripple and noise (20 MHz Bandwidth)	55 mVp-p max.
Start up time	35 ms typ.
Transient response	<ul style="list-style-type: none"> – Recovery time (25% load step change) – Deviation
Current limitation	at 150 % typ. of lout max.
Short circuit protection	hiccup mode, automatic recovery
Capacitive load	<ul style="list-style-type: none"> – Single output – Dual output

3.3 & 5.0 VDC models: 680 µF max.
12 & 15 VDC models: 330 µF max.
24 VDC models: 150 µF max.
±12 & ±15 VDC models: 150 µF max. (each output)

General Specifications

Temperature ranges	<ul style="list-style-type: none"> – Operating (convection cooling 20LFM, 0,1m/s) – Case temperature – Storage temperature
Derating	5 %/K above 70°C
Humidity (non condensing)	95 % rel H max.
Isolation voltage	<ul style="list-style-type: none"> – Isolation test voltage (tested for 1 sec.) – I/O isolation voltage (60 sec.)
Isolation capacitance (input/output)	500 pF typ.
Isolation resistance (input/output)	>1 Gohm
Altitude during operation	5000 m

–40°C to +80°C
+105°C max.
–50°C to +125°C

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

General Specifications (continued)

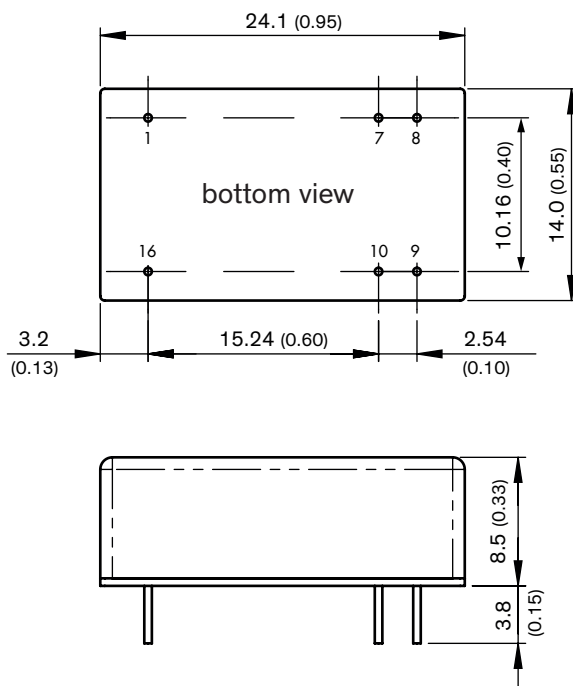
Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign)	2'360'000 h min.
Switching frequency	370 kHz typ.
Safety standards /approvals	IEC/EN 60950-1 UL 60950-1 www.tracopower.com/overview/tel8wi
Environmental compliance	– Reach – RoHS www.tracopower.com/products/reach-declaration.pdf RoHS directive 2011/65/EU

Physical Specifications

Casing material	aluminium alloy, black anodized coating
Pin material	tinned copper
Package weight	6.1 g (0,22 oz)
Soldering temperature	max. 260°C / 10 sec.

Supporting Documents: www.tracopower.com/overview/tel8wi

Outline Dimensions



Pin-Out		
Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
7	ntc	ntc
8	ntc	Common
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin	+Vin

ntc = not to connect

Dimensions in [mm], () = Inch
Tolerances: ± 0.5 (0.02)
Pin pitch tolerance: ± 0.25 (0.01)
Pin diameter: 0.5 (0.02) ± 0.05 (0.002)