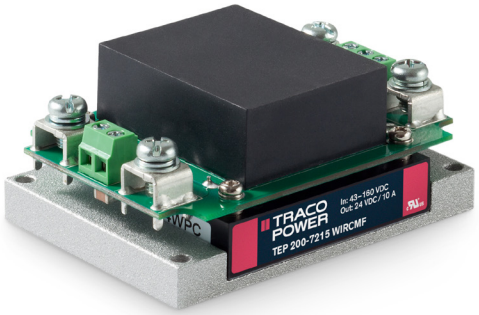
DC/DC Converters

TEP 200WIR Series, 180 – 240 Watt

Features

- Chassis mount with screw terminal block
- Including EMI filter to meet EN 55032, class A
- Ultra wide 4:1 input voltage ranges 9–36, 18–75, 43–160 VDC
- EN 50155 approval for railway applications
- Very high efficiency up to 91%
- No minimum load
- Soft start
- Under voltage lock-out circuit
- Ajustable output voltage +10/-20%
- Sense line
- Remote On/Off input
- Reverse input voltage protection
- Over temperature protection
- 3-year product warranty



The TEP 200WIR Series is a family of isolated high performance dc-dc converter modules with ultra-wide 4:1 input voltage ranges. They come in chassis mount version with screw terminal block and with integrated EMI input filter to meet EN 55032 class A. A very high efficiency allows full power operation at 25°C with only 100 LFM air flow couling and operation at 60°C with only 40% power derating.

The very wide input voltage range and reverse input voltage protection make these converters interesting solution for battery operated systems. Typical applications are in telecom/datacom, industry control and railway systems for on board power distribution.

Standard Models

Order code	Input voltage	Output voltage	Output current max.	Efficiency typ.
TEP 200-2412WIRCMF	9 – 36 VDC (24 VDC nominal)	12 VDC	15 A	89 %
TEP 200-2413WIRCMF		15 VDC	12 A	90 %
TEP 200-2415WIRCMF		24 VDC	7.5 A	90 %
TEP 200-2416WIRCMF		28 VDC	6.5 A	90 %
TEP 200-2418WIRCMF		48 VDC	3.7 A	89 %
TEP 200-4812WIRCMF	18 – 75 VDC (48 VDC nominal)	12 VDC	18 A	90 %
TEP 200-4813WIRCMF		15 VDC	14 A	91 %
TEP 200-4815WIRCMF		24 VDC	9 A	90 %
TEP 200-4816WIRCMF		28 VDC	7.5 A	91 %
TEP 200-4818WIRCMF		48 VDC	4.5 A	90 %
TEP 200-7212WIRCMF	43 – 160 VDC (110 VDC nominal)	12 VDC	20 A	89 %
TEP 200-7213WIRCMF		15 VDC	16 A	90 %
TEP 200-7215WIRCMF		24 VDC	10 A	89 %
TEP 200-7216WIRCMF		28 VDC	8.5 A	90 %
TEP 200-7218WIRCMF		48 VDC	5 A	89 %

Options

TEP-MK1	Din-rail mounting kit (incl. mounting screws)
on demand (backorder with MOQ)	Models with 3.3 VDC or 5.0 VDC output
	Models with 53 VDC output (input voltage range 33 - 75 VDC)
	Models with 2:1 input voltage ranges: 8.5-22, 16.5-36, 33-75 VDC (only to optimize cost at high volumes)
	Models for PCB mount (EMI Filter not included), optional heatsink and chokes for external filter
	Negative (passive = Off) Remote On/Off function (standard is passive = On)

Input Specifications

Input current at no load (nominal input voltage)	24 V, 12 & 15 VDC models:	30 mA typ.
	24 V, 24 VDC model:	35 mA typ.
	24 V, 28 VDC model:	40 mA typ.
	24 V, 48 VDC model:	45 mA typ.
	48 V, 28 & 48 VDC models:	25 mA typ.
	48 V, other models:	20 mA typ.
	110 V, 28 & 48 VDC models:	15 mA typ.
	110 V, other models:	10 mA typ.
Start-up voltage	24 V models:	9.0 VDC max.
	48 V models:	18 VDC max.
	110 V models:	43 VDC max.
Under voltage shut down (lock-out circuit)	24 V models:	7.3 – 8.1 VDC
	48 V models:	15.5 – 16.3 VDC
	110 V models:	33.0 – 36.0 VDC
Surge voltage (1 s max.)	24 V models:	50 VDC
	48 V models:	100 VDC
	110 V models:	185 VDC
Conducted noise		EN 55032 class A without external components
EMC immunity		EN 50121-3-2
– ESD (electrostatic discharge)		EN 61000-4-2, air ±8 kV, contact ±6 kV, perf. criteria A
– Radiated immunity		EN 61000-4-3, 20 V/m, perf. criteria A
– Fast transient / surge (with external input capacitor)		EN 61000-4-4, ±2 kV, perf. criteria A EN 61000-4-5, ±2 kV perf. criteria A,
	24 / 48V models:	chemi-con KY 220 µF, 100 V, ESR 48 mOhm
	110 V models:	ruby-con BXF 150 µF, 250 V
– Conducted immunity		EN 61000-4-6, 10 Vrms, perf. criteria A
Reverse voltage protection		parallel diode
Recommended input fuse (fast blow)	24 V models:	32 A
	48 V models:	20 A
	110 V models:	10 A

Output Specifications

Voltage set accuracy (at full load, nominal input)		±1 %
Output voltage adjustment		+10 % / –20 % by external resistor
– Application note		www.tracopower.com/overview/tep200wir
Regulation	– Input variation Vin min. to Vin max.	0.1 % max.
	– Load variation (0 – 100 %) 12 / 15 VDC models:	0.25 % max.
	24 – 48 VDC models:	0.2 % max.
Temperature coefficient		±0.02 %/K
Minimum load		not required
Remote sense		10 % max. of Vout nom. (trim up value to subtract)
Ripple and noise (20 MHz Bandwidth)	12 / 15 VDC models:	100 mVp-p typ.
	24 / 28 VDC models:	200 mVp-p typ.
	48 VDC models:	300 mVp-p typ.
Start up time (nominal Vin and constant resistive load)		75 ms typ. (at power On or remote On/Off)
Transient response (25 % load step change)		200 µs typ., 250 µs max.
Output current limitation		at 120 – 150 % of Iout max.
Over voltage protection		at 115 – 130 % of Vout nom.
Short circuit protection		indefinite, automatic recovery.