

Features

- ◆ High power block with excellent thermal convection
- ◆ Operating temperature -40°C to +85° without derating
- ◆ Increased shock & vibration resistance
- ◆ Ultra wide 4:1 input voltage range
- ◆ EN 50155 approval for railway applications
- ◆ Excellent efficiency up to 90%
- ◆ Input filter meet EN 55022, class A
- ◆ I/O isolation 2250 VDC
- ◆ Under voltage lock-out circuit
- ◆ Soft start
- ◆ Input protection filter



The TEQ-100WIR Series is a family of isolated high performance dc-dc converter modules with ultra-wide 4:1 input voltage ranges which come in a rugged, sealed metal case.

These converters are suitable for a wide range of applications, but the product is designed particularly also for industrial applications where often no PCB mounting is possible but the module has to be mounted on a chassis. A very high efficiency and the overall heatsink construction allows an operating temperature

up to +85°C with natural convection cooling without power derating and up to +95°C with power derating. Further features include output voltage trimming, Remote On/Off and under voltage lockout. The ultra wide input voltage range and reverse input voltage protection make these converters also an interesting solution for battery operated systems.

Models

| Order code* | Input voltage | Output voltage | Output current max. | Efficiency typ. |
|-----------------|--|----------------------|---------------------|-----------------|
| TEQ 100-2412WIR | 9 – 36 VDC (24 VDC nominal) | 12 VDC (9.6 – 13.2) | 8.4 A | 90 % |
| TEQ 100-2415WIR | | 24 VDC (19.2 – 26.4) | 4.2 A | 90 % |
| TEQ 100-2416WIR | | 28 VDC (22.4 – 30.8) | 3.6 A | 90 % |
| TEQ 100-2418WIR | | 48 VDC (38.4 – 52.8) | 2.1 A | 90 % |
| TEQ 100-4812WIR | 18 – 75 VDC (48 VDC nominal) | 12 VDC (9.6 – 13.2) | 8.4 A | 90 % |
| TEQ 100-4815WIR | | 24 VDC (19.2 – 26.4) | 4.2 A | 90 % |
| TEQ 100-4816WIR | | 28 VDC (22.4 – 30.8) | 3.6 A | 90 % |
| TEQ 100-4818WIR | | 48 VDC (38.4 – 52.8) | 2.1 A | 90 % |
| TEQ 100-7212WIR | 43 – 160 VDC (110 VDC nominal) | 12 VDC (9.6 – 13.2) | 8.4 A | 89 % |
| TEQ 100-7215WIR | | 24 VDC (19.2 – 26.4) | 4.2 A | 90 % |
| TEQ 100-7216WIR | | 28 VDC (22.4 – 30.8) | 3.6 A | 90 % |
| TEQ 100-7218WIR | | 48 VDC (38.4 – 52.8) | 2.1 A | 90 % |

Input Specifications

| | |
|--|---|
| Input current at no load | 24 Vin models: 25 mA typ. 48 Vin models: 20 mA typ. 110 Vin models: 10 mA typ. |
| Start-up voltage | 24 Vin models: 9.0 VDC (or lower) 48 Vin models: 18.0 VDC (or lower) 110 Vin models: 43.0 VDC (or lower) |
| Under voltage shut down (lock-out circuit) | 24 Vin models: 7.3 VDC min. 48 Vin models: 15.8 VDC min. 110 Vin models: 34.5 VDC min |
| Surge voltage (1 sec. max.) | 24 Vin models: 50 V max. 48 Vin models: 100 V max. 110 Vin models: 185 V max. |
| Conducted noise | EN 55022 class A |
| EMC immunity | EN 50121-3-2 EN 61000-4-2, air ±8 kV, contact ±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 EN 61000-4-6, 10 Vrms, perf. criteria A EN 50155 |
| <ul style="list-style-type: none"> – ESD (electrostatic discharge) – Radiated immunity – Fast transient / surge – Conducted immunity – Railway immunity | |
| Reverse voltage protection | parallel diode |

Output Specifications

| | |
|-------------------------------------|--|
| Voltage set accuracy | ±1 % |
| Output voltage adjustment | +10 % / -20 % |
| Regulation | <ul style="list-style-type: none"> – Input variation Vin min. to Vin max. 0.1 % max. – Load variation (0 – 100 %) 0.1 % max. |
| Temperature coefficient | ±0.02 %/K |
| Minimum load | not required |
| Remote sense | up to Vout nom. +10% |
| Ripple and noise (20 MHz Bandwidth) | <ul style="list-style-type: none"> 12 VDC models: 125 mVpk-pk max. 24 & 28 VDC models: 250 mVpk-pk max. 48 VDC models: 350 mVpk-pk max. |

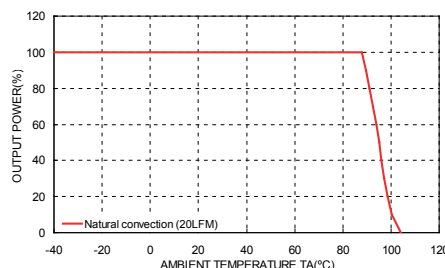
Output Specifications

| | |
|---|--|
| Start up time (nominal Vin and constant resistive load) | 75 ms typ. (at power On or remote On) |
| Transient response (25% load step change) | 250 µs max. |
| Output current limitation | at 120 -150 % of Iout max. |
| Over voltage protection | at 115 -130 % of Vout nom. |
| Short circuit protection | hiccup, automatic recovery |
| Capacitive load | 12 VDC models: 7'000 µF max. 24 VDC models: 1'750 µF max. 28 VDC models: 1'280 µF max. 48 VDC models: 430 µF max. |

General Specifications

| | | |
|---|--|--|
| Temperature ranges | - Operating - Storage | -40°C to +105°C (up to +85°C w/o derating) -40°C to +105°C |
| Thermal impedance | | 1.45°C/W |
| Derating | | See derating graph below |
| Over temperature protection | | at 120°C |
| Thermal shock | | acc. MIL-STD-810F |
| Shock & Vibration | | acc. EN61373, MIL-STD-810F |
| Humidity (non condensing) | | 95 % rel H max. |
| Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign) | | TBD |
| Isolation voltage (60sec.) | - Input/Output - Input/Case | 2'250 VDC (basic insulation) 1'600 VDC |
| Isolation resistance | - Input/Output (500 VDC) | >1 GOhm min. |
| Switching frequency | 24 & 48 Vin models: 110 Vin models: | 250 kHz typ. (puls width modulation) 300 kHz typ. (puls width modulation) |
| Safety standards | - CB test certificate - CSA certificate of compliance - UL online certification E188913, QGGQ2 - Railway immunity - Flamability identified acc. - Certification documents | IEC/EN 60950-1 (ed. 2), EN 60950-1:2006/ A11:2009/A1:2010/A12:2011/A2:2013 UL 508, CSA C22.2 No. 107.1-01 UL 60950-1 2nd ed. +Am1 EN50155 EN45545-2 www.tracopower.com/overview/teq100wir |
| Remote On/Off | - positive logic (standard) - negative logic (option -N) - Off idle current: | - On: 3 to 12 VDC or open circuit - Off: 0 to 1.2 VDC or short circuit terminal 1 and 4 - On: 0 to 1.2 VDC or short circuit terminal 1 and 4 - Off: 3 to 12 VDC or open circuit 3 mA |
| Environmental compliance | - Reach document - RoHS | www.tracopower.com/overview/teq100wir RoHS directive 2011/65/EU |

Temperature derating



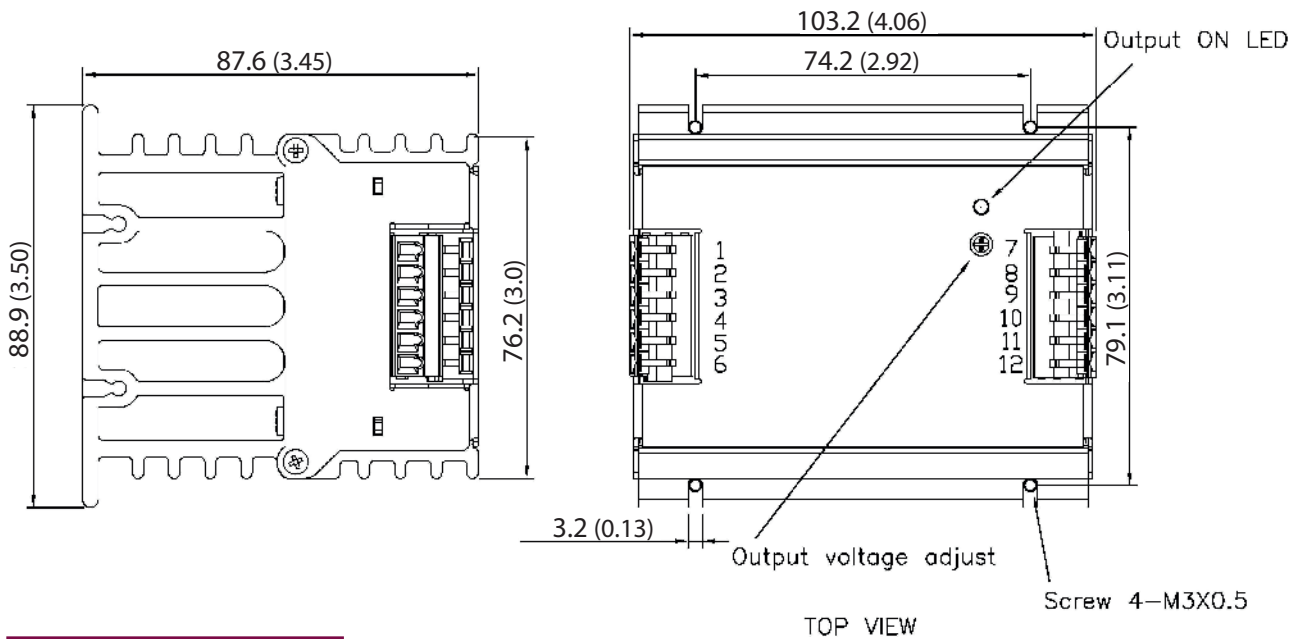
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Physical Specifications

| | |
|------------------|--------------------------|
| Casing material | aluminium |
| Potting material | silicone (UL94V-0 rated) |
| Base material | FR4 |
| Weight | 800 g (28.22oz) |

Dimensions

TEQ 100WIR module:

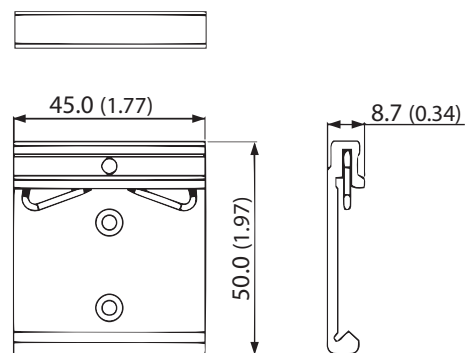


Weight: 800 g (28.22 oz)

| Connection | |
|------------|----------------------|
| Terminal | |
| 1 | - Vin |
| 2 | - Vin |
| 3 | NC |
| 4 | Ctrl (Remote On/Off) |
| 5 | + Vin |
| 6 | + Vin |
| 7 | - Vout |
| 8 | - Vout |
| 9 | - Sense* |
| 10 | + Sense* |
| 11 | + Vout |
| 12 | + Vout |

DIN-Rail clip:

Order code: TEP-MK1



*Sense line to be connected to the output either at the module or at the load under regard of polarity.

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



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
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- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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