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

<table>
<thead>
<tr>
<th>Ordercode</th>
<th>Input voltage range</th>
<th>Output voltage</th>
<th>Output current max.</th>
<th>Efficiency typ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEN 15-2410WI</td>
<td>3,3 VDC</td>
<td>3000 mA</td>
<td>78 %</td>
<td></td>
</tr>
<tr>
<td>TEN 15-2411WI</td>
<td>5,1 VDC</td>
<td>2950 mA</td>
<td>82 %</td>
<td></td>
</tr>
<tr>
<td>TEN 15-2412WI</td>
<td>12 VDC</td>
<td>1250 mA</td>
<td>85 %</td>
<td></td>
</tr>
<tr>
<td>TEN 15-2422WI</td>
<td>±12 VDC</td>
<td>±625 mA</td>
<td>85 %</td>
<td></td>
</tr>
<tr>
<td>TEN 15-2423WI</td>
<td>±15 VDC</td>
<td>±500 mA</td>
<td>86 %</td>
<td></td>
</tr>
<tr>
<td>TEN 15-4810WI</td>
<td>3,3 VDC</td>
<td>3000 mA</td>
<td>78 %</td>
<td></td>
</tr>
<tr>
<td>TEN 15-4811WI</td>
<td>5,1 VDC</td>
<td>2950 mA</td>
<td>82 %</td>
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</tr>
<tr>
<td>TEN 15-4812WI</td>
<td>12 VDC</td>
<td>1250 mA</td>
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<td>TEN 15-4822WI</td>
<td>±12 VDC</td>
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<td></td>
</tr>
</tbody>
</table>

http://www.tracopower.com

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Input Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>24 Vin models</th>
<th>48 Vin models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input current at no load</td>
<td>25 mA typ.</td>
<td>15 mA typ.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specification</th>
<th>24 Vin; 3.3 Vout models</th>
<th>other output models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input current at full load</td>
<td>528 mA typ.</td>
<td>740 mA typ.</td>
</tr>
<tr>
<td>48 Vin; 3.3 Vout models</td>
<td>264 mA typ.</td>
<td>370 mA typ.</td>
</tr>
<tr>
<td>other output models</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Surge voltage (100 msec. max.)

<table>
<thead>
<tr>
<th>Specification</th>
<th>24 Vin models</th>
<th>48 Vin models</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 V max.</td>
<td>100 V max.</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Specification</th>
<th>single output models</th>
<th>dual output models</th>
</tr>
</thead>
<tbody>
<tr>
<td>470 µF max.</td>
<td>220 µF max.</td>
<td></td>
</tr>
</tbody>
</table>

General Specifications

Temperature ranges

- Operating -40°C to +85°C (~-40°F 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

Environmental compliance - Reach www.tracopower.com/overview/ten15wi
- RoHS www.tracopower.com/info/reach-declaration.pdf
- 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.

Thermal Impedance 12.2 K/W typ.

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

**TEN 15WI**

15 Watt

### Outline Dimensions

[Diagram showing dimensions and tolerances]

- **Insulated baseplate**
- **Dimensions in [mm]**
- **() = Inch**
- **Pin diameter: 1.0 ±0.05 (0.039 ±0.002)**
- **Pin pitch tolerances: ±0.25 (±0.01)**
- **Casing tolerances: ±0.5 (±0.02)**

### Pin-Out

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single</th>
<th>Dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+Vin (Vcc)</td>
<td>+Vin (Vcc)</td>
</tr>
<tr>
<td>2</td>
<td>–Vin (GND)</td>
<td>–Vin (GND)</td>
</tr>
<tr>
<td>3</td>
<td>+Vout</td>
<td>+Vout</td>
</tr>
<tr>
<td>4</td>
<td>No pin</td>
<td>Common</td>
</tr>
<tr>
<td>5</td>
<td>–Vout</td>
<td>–Vout</td>
</tr>
<tr>
<td>6</td>
<td>Remote On/Off</td>
<td></td>
</tr>
</tbody>
</table>

### 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

**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.

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