Industrial Power Supplies
TBL Series, 15 to 150 Watt

Features

- Low profile case, module depth only 55mm
- Fits into flat control panels used in building automation
- Safety class II product
- UL 1310 class II, NEC class 2 compliance (models up to 90 W)
- UL 508 listed
- Power ranges from 12 to 150 W
- Universal input range 85 to 264 VAC (auto range for 150 Watt models)
- Operating temperature range: -25°C to +70°C max.
- Adjustable output voltage
- Short circuit and overload protection
- DC–OK indicator
- Easy snap-on mounting on DIN-rail or w/ wall mounting bracket (included)
- 3-year product warranty

The TBL series is a new range of small DIN-rail mount power supplies which have been designed particularly with building- and factory automation applications in mind. The ultra-compact low profile cases fit in the standardized wall mounted control panels used in the building automation industry. The power supplies can be operated at full load across an ambient temperature range of -25°C to +60°C without need of additional cooling. Universal input voltage range and full compliance with all important safety and EMC standards qualifies the TBL series power supplies for worldwide markets. For commercial and residential applications requesting safety class II the models up to 90 Watt are approved to UL 1310.

Models

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Output Power (max.)</th>
<th>Output Voltage* (nom.)</th>
<th>Output Current (max.)</th>
<th>Efficiency (typ.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBL 015-105</td>
<td>12 W</td>
<td>5.0 VDC</td>
<td>2.4 A</td>
<td>73 %</td>
</tr>
<tr>
<td>TBL 015-112</td>
<td>15 W</td>
<td>12 VDC</td>
<td>1.25 A</td>
<td>79 %</td>
</tr>
<tr>
<td>TBL 015-124</td>
<td>15 W</td>
<td>24 VDC</td>
<td>0.63 A</td>
<td>81 %</td>
</tr>
<tr>
<td>TBL 030-112</td>
<td>30 W</td>
<td>12 VDC</td>
<td>2.5 A</td>
<td>81 %</td>
</tr>
<tr>
<td>TBL 030-124</td>
<td></td>
<td>24 VDC</td>
<td>1.25 A</td>
<td>83 %</td>
</tr>
<tr>
<td>TBL 060-112</td>
<td>54 W</td>
<td>12 VDC</td>
<td>4.5 A</td>
<td>83 %</td>
</tr>
<tr>
<td>TBL 060-124</td>
<td>60 W</td>
<td>24 VDC</td>
<td>2.5 A</td>
<td>85 %</td>
</tr>
<tr>
<td>TBL 090-112</td>
<td>72 W</td>
<td>12 VDC</td>
<td>6.0 A</td>
<td>84 %</td>
</tr>
<tr>
<td>TBL 090-124</td>
<td>90 W</td>
<td>24 VDC</td>
<td>3.75 A</td>
<td>86 %</td>
</tr>
<tr>
<td>TBL 150-112</td>
<td>120 W</td>
<td>12 VDC</td>
<td>10 A</td>
<td>84 %</td>
</tr>
<tr>
<td>TBL 150-124</td>
<td>150 W</td>
<td>24 VDC</td>
<td>6.25 A</td>
<td>87 %</td>
</tr>
</tbody>
</table>

* adjustable
**Input Specifications**

<table>
<thead>
<tr>
<th>Input voltage</th>
<th>TBL 150 models: 100 – 240 VAC; 50/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC nominal rated</td>
<td>85 – 264 VAC; 47 – 63 Hz</td>
</tr>
<tr>
<td>AC range (designed for)</td>
<td>85 – 132 / 187 – 264 VAC; 47 – 63 Hz</td>
</tr>
<tr>
<td>Power derating at low input voltage</td>
<td>5% below 90 VAC</td>
</tr>
</tbody>
</table>

**Harmonic limits**

EN 61000-3-2, Class A

**Recommended circuit breaker** (characteristic C or slow blow fuse)

6.0 A

**Output Specifications**

<table>
<thead>
<tr>
<th>Output voltage adjustable range</th>
<th>5 VDC model: 5.0 – 5.2 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 VDC models: 12 – 16 VDC</td>
<td></td>
</tr>
<tr>
<td>24 VDC models: 24 – 28 VDC</td>
<td></td>
</tr>
</tbody>
</table>

**Output regulation**

1 %

**Ripple and noise** (20MHz bandwidth)

<100 mV pk-pk

**Electronic short circuit protection**

Current limitation at 100 – 150 % typ. (automatic recovery)

**Overvoltage protection, trigger point**

- 5 VDC model: 5.5 – 7.5 VDC
- 12 VDC models: 16 – 24 VDC
- 24 VDC models: 30 – 37 VDC
- TBL 015-124, TBL 060-124, TBL 090-124: 29 – 44 VDC

**Status indicator**

Bi-colour LED (green: normal operation, red: overload or short circuit)

**Hold-up time**

min. 10 ms (115 VAC), min. 20 ms (230 VAC)

**General Specifications**

<table>
<thead>
<tr>
<th>Temperature ranges</th>
<th>Operating –25°C to +70°C max. (with derating)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Storage –40°C to +85°C max.</td>
</tr>
</tbody>
</table>

**Power derating**

2.5 %/K above 60°C

**Humidity (non condensing)**

5 – 95 % rel. H

**Temperature coefficient**

0.02 %/K

**Reliability, calculated MTBF at +25°C acc. to IEC 61709**

- TBL 015: >1.5 Mio h
- TBL 060: >2.1 Mio h
- all other models: >1.3 Mio h

**Isolation voltage** (60 s)

- Input to Output 3000 VAC

**Safety standards**

- UL certificate of compliance UL 508 listed
- UL 1310, class II (15 – 90 W models)
- IEC 60950-1
- IEC/EN 61010-1, IEC/EN 61010-2-201
- EN 60950-1
- IEC/EN 61010-1, IEC/EN 61010-2-201
- EN 50178, EN 60204-1, EN 61558-2-16
- CAN/CSA-C22.2 No. 60950-1-07 2nd Ed
- UL 60950-1 2nd Ed

**Electromagnetic compatibility (EMC), emissions**

- Conducted RI suppression on input EN 61000-6-3
- Radiated RI suppression EN 55022 class B

**Electromagnetic compatibility (EMC), immunity**

- Electrostatic discharge (ESD) EN 61000-6-2
- Radiated RF field immunity EN 61000-4-3 4 kV / 8 kV criteria B
- Electrical fast transient / burst immunity EN 61000-4-4 ±2 kV criteria B
- Surge immunity line – ground EN 61000-4-5 2 kV criteria B
- Surge immunity line – line EN 61000-4-5 1 kV criteria B
- Immunity to conducted RF disturbances TBL 90/150: other models: 3 V criteria A
- Mains voltage dips and interruptions EN 61000-4-8 3 V criteria A
- Voltage Sag immunity EN 61000-4-11 100 A/m criteria A

http://www.tracopower.com
General Specifications

Protection class | class II as per IEC/EN 61140
Case protection | IP 20 [IEC 60529]
Altitude during operation | 2’000 m max.
Environment | - Vibration acc. IEC 60068-2-6;
- Shock acc. IEC 60068-2-27
        | 3 axis, sine sweep, 10 – 55 Hz, 0.075 mm
        | 3 axis, 15 g half sine, 11 ms
Enclosure material | plastic FR2010-110C (UL 94V-0 rated)
Mounting | DIN-rails as per EN 50022-35x15/7.5
        | (snap-on with self-locking spring or wall mounting
        | with bracket) (included)
Connection | screw terminals with combi-type screw heads
        | for wire size 0.5 – 1.5 mm²
Installation instructions | www.tracopower.com/overview/tbl
Environmental compliance | - Reach
        | - RoHS
        | RoHS directive 2011/65/EU

Case Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Width (W)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBL 015</td>
<td>26.3 (1.04)</td>
<td>100 (3.53)</td>
</tr>
<tr>
<td>TBL 030</td>
<td>52.5 (2.07)</td>
<td>160 (5.64)</td>
</tr>
<tr>
<td>TBL 060</td>
<td>70.0 (2.76)</td>
<td>230 (8.11)</td>
</tr>
<tr>
<td>TBL 090</td>
<td>105.0 (4.13)</td>
<td>340 (12.0)</td>
</tr>
<tr>
<td>TBL 150</td>
<td>175 (6.89)</td>
<td>625 (22.0)</td>
</tr>
</tbody>
</table>

Wall Mounting Bracket

Instead on a DIN-rail, the modules can be also mounted on a chassis or wall with help of
a mounting bracket which is supplied as standard with each power supply

Wiring

<table>
<thead>
<tr>
<th>Description</th>
<th>Wire size</th>
<th>Max. terminal screw locked torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Input 15 – 90 W models</td>
<td>0.5 – 2.5 mm² / AWG 20 – 14</td>
<td>0.5 Nm</td>
</tr>
<tr>
<td>AC Input 150 W model</td>
<td>1.3 – 2.5 mm² / AWG 16 – 14</td>
<td></td>
</tr>
<tr>
<td>DC Output 15 – 90 W models</td>
<td>1.5 – 2.5 mm² / AWG 16 – 14</td>
<td></td>
</tr>
<tr>
<td>DC Output 150 W model</td>
<td>2.5 mm² / AWG 14</td>
<td></td>
</tr>
</tbody>
</table>

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