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 with 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>30 W</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
# Industrial Power Supplies

## TBL Series

### Input Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>100 – 240 VAC; 50/60 Hz</th>
<th>TBL 150 models: 85 – 264 VAC; 47 – 63 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>– AC nominal rated</td>
<td>100 – 120 / 220 – 240 VAC; 50/60 Hz</td>
</tr>
<tr>
<td></td>
<td>– AC range (designed for)</td>
<td>85 – 132 / 187 – 264 VAC; 47 – 63 Hz</td>
</tr>
<tr>
<td></td>
<td>– Power derating at low input voltage</td>
<td>5% below 90 VAC or 127 VDC</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>Specification</th>
<th>5 VDC model: 5.0 – 5.2 VDC</th>
<th>12 VDC models: 12 – 16 VDC</th>
<th>24 VDC models: 24 – 28 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output voltage adjustable range</td>
<td></td>
<td></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
  - TBL 030-124, TBL 150-124: 30 – 37 VDC
  - TBL 015-124, TBL 060-124, TBL 090-124: 29 – 44 VDC

- **Hold-up time**
  - 115 VAC: min. 10 ms
  - 230 VAC: min. 20 ms

### General Specifications

- **Temperature ranges** |
  - Operating: -25°C to +70°C max.
  - Storage: -40°C to +85°C max.
- **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 015: >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)
  - EN 50178, EN 60204-1, EN 61558-2-16
    - CAN/CSA-C22.2 No. 60950-1-07 2nd Ed
    - UL 60950-1 2nd Ed
  - Certification documents: [www.tracopower.com/overview/tbl](http://www.tracopower.com/overview/tbl)
- **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 61000-4-2 4 kV / 8 kV criteria B
  - Radiated RF field immunity: EN 61000-4-3 10 V/m criteria A
  - 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: EN 61000-4-6 3 V criteria A
  - Immunity to conducted RF disturbances: other models: EN 61000-4-6 10 V criteria A
  - Magnetic field immunity: EN 61000-4-8 100 A/m criteria A
  - Mains voltage dips and interruptions: EN 61000-4-11
  - Voltage Sag immunity: SEMI F47-0706
General Specifications

Protection class  
class II as per IEC/EN 61140

Case protection  
IP 20 (IEC 60529)

Environment  
- Vibration acc. IEC 60068-2-6;
- Shock acc. IEC 60068-2-27

Environment  
3 axis, sine sweep, 10 – 55 Hz, 0.075 mm
3 axis, 15 g half sine, 11 ms

Enclosure material  
plastic FR2010-110C (UL 94VO 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) mm (inch)</th>
<th>Weight g (oz)</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>
</tr>
</thead>
<tbody>
<tr>
<td>AC Input 15 – 90 W models</td>
<td>0.5 – 2.5 mm² / AWG 20 – 14</td>
</tr>
<tr>
<td>AC Input 150 W model</td>
<td>1.3 – 2.5 mm² / AWG 16 – 14</td>
</tr>
<tr>
<td>DC Output 15 – 90 W models</td>
<td>1.5 – 2.5 mm² / AWG 16 – 14</td>
</tr>
<tr>
<td>DC Output 150 W model</td>
<td>2.5 mm² / AWG 14</td>
</tr>
</tbody>
</table>

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