

## INSTALLATION INSTRUCTIONS

### TBL Series Industrial and Residential Power Supply

#### Rated Values

Order Code	AC-Input Voltage Range	Output Power max.	Output	* Output Voltage Adjustment Range	recommended Circuit breaker (Characteristic C)
TBL 015-105	Nominal 100Vac – 240Vac 50 – 60Hz Operation 85Vac – 263Vac 47 – 63Hz	12 Watt	5.0Vdc / 2.4A	5.0 - 5.2Vdc	6A
TBL 015-112		15 Watt	12.0Vdc / 1.25A	12.0 – 16.0Vdc	
TBL 015-124			24.0Vdc / 0.63A	24.0 – 28.0Vdc	
TBL 030-112		30 Watt	12.0Vdc / 2.5A	12.0 – 16.0Vdc	
TBL 030-124			24.0Vdc / 1.25A	24.0 – 28.0Vdc	
TBL 060-112		54 Watt	12.0Vdc / 4.5A	12.0 – 16.0Vdc	
TBL 060-124			60 Watt	24.0Vdc / 2.5A	
TBL 090-112		72 Watt	12.0Vdc / 6.0A	12.0 – 16.0Vdc	
TBL 090-124		90 Watt	24.0Vdc / 3.75A	24.0 – 28.0Vdc	
TBL 150-112		Nominal 100-120/220-240Vac 50 – 60Hz	150 Watt	12.0Vdc / 10.0A	
TBL 150-124	Operation 85-132/187-263Vac 47-63Hz	24.0Vdc / 6.25A		24.0 – 28.0Vdc	

\* Adjustable by potentiometer with a screwdriver.

#### Typical Reference Values

Input current:	@ Vin=115VAC	@ Vin=230VAC	Power Consumption	@ Vin=115VAC	@ Vin=230VAC
➤ TBL 015-105	0.25A typ.	0.17A typ.	➤ TBL 015-105	16.3 Watt typ.	16.6 Watt typ.
➤ TBL 015-1xx	0.29A typ.	0.20A typ.	➤ TBL 015-1xx	18.7 Watt typ.	19.3 Watt typ.
➤ TBL 030-xxx	0.57A typ.	0.39A typ.	➤ TBL 030-xxx	35.8 Watt typ.	36.3 Watt typ.
➤ TBL 060-112	1.00A typ.	0.68A typ.	➤ TBL 060-112	64.4 Watt typ.	65.5 Watt typ.
➤ TBL 060-124	1.10A typ.	0.70A typ.	➤ TBL 060-124	68.0 Watt typ.	69.0 Watt typ.
➤ TBL 090-112	1.40A typ.	0.90A typ.	➤ TBL 090-112	84.0 Watt typ.	84.0 Watt typ.
➤ TBL 090-124	1.60A typ.	1.07A typ.	➤ TBL 090-124	104 Watt typ.	104.5 Watt typ.
➤ TBL 150-112	1.84A typ.	0.98A typ.	➤ TBL 150-112	144 Watt typ.	147 Watt typ.
➤ TBL 150-124	2.80A typ.	1.8A typ.	➤ TBL 150-124	160 Watt typ.	162 Watt typ.

Operating temperature range: Natural Air Convection Cooling	-25°C – +60°C max at nominal load, above +60°C see derating below -13°F – +140°F max at nominal load, above +140°F see derating below		
Output Power Derating:	above +60°C → 2.5%/°C up to +70°C above 140°F → 1.4%/°F up to +158°F <90Vac input voltage output power has to be derated by 5%/V for continuous operation		
Storage temperature range:	-25°C – +85°C max -13°F – +185°F max		
Wire recommendation:	Input wire:	0.518 – 3.31mm <sup>2</sup>	AWG: 24 – 12
	Output wire: TBL 015-xxx & TBL 030-xxx:	0.518 – 3.31mm <sup>2</sup>	AWG: 24 – 12
	TBL 060-xxx & TBL 090-xxx:	0.518 – 3.31mm <sup>2</sup>	AWG: 24 – 12
	** TBL 150-xxx	2.080 – 3.31mm <sup>2</sup>	AWG: 14 – 12
	Use: Strand / solid copper wire		
	Wire temperature specification:	70°C minimum (>70°C)	
	** TBL150-xxx - wire temperature specification	75°C minimum	
	Wire material:	Copper	
Connections:	Screw type terminal COMBICON. Recommended tightening torque 0.5 to 0.7Nm (6.0lb.in.)		
Case material:	Grey Plastic		

## Safety Instructions:

- Before installation read these instructions carefully and completely. This installation instruction cannot account for every possible condition of installation, operation or maintenance. Further information can be obtained from your local distributor's office or from the product datasheet, which can be downloaded, from the Internet at <http://tracopower.com/products/tbl.pdf>. You will find additional information in our Instruction Manual, which can also be downloaded from the Internet at: [http://www.tracopower.com/products/tbl\\_manual.pdf](http://www.tracopower.com/products/tbl_manual.pdf).
- The power supplies are constructed in accordance with the safety requirements of IEC/EN/UL60950-1, and UL508. They comply with the requirements for "Limited Power Sources" UL1310 (except TBL 090-112, TBL150-xxx), are approved (BG-mark) in accordance with EN60950-1, EN50178 and fulfil the requirements of the Low Voltage Directive (LVD). They are UL and cUL approved by UL in accordance to UL1310 class II ((listed) (TBL015-124, 60°C, 24V)) and UL508 ((listed) (max surrounding air temperature 60°C) as well as UL 60950-1 by CSA. For UL1310 the leakage current measurements shall be performed on the combination at the equipment connection in the end-use product.
- Before any installation, maintenance or modification work ensure that the main switch is switched off and prevented from being switched on again. Non-observance, touching of any live components or improper handling of this power supply can result in death, severe personal injury or substantial property damage. Proper and safe operation is dependent on proper storage, handling, installation and operation.
- Compliance with the relevant national regulations (in the USA, Europe and other countries) must be ensured. Before operation is started the following conditions must be ensured:
  - ❖ Connection to mains supply in compliance with national regulations (VDE0100 and EN50178).
  - ❖ By use of stranded wires, all strands must be fastened in the terminal blocks. (Potential danger of contact with the case)
  - ❖ Power supply and mains cables must be sufficiently fused.
  - ❖ Degree of protection II to IEC536. (Protection Class II).
  - ❖ All output wires must be rated for the power supply output current and must be connected with the correct polarity.
  - ❖ Sufficient cooling must be ensured.
- **Never work on the power supply if power is supplied!** Risk of electric arcs and electrical shock, which can cause death, severe personal injury or substantial property damage.
- **Warning:** Hazardous voltages and components storing a very substantial amount of energy are present in this power supply during normal operating conditions. However, these are inaccessible. Improper handling may result in an electric shock or serious burns! **Do not open the power supply until at least 5 minutes after it has been disconnected from the mains on all poles.**
  - ❖ Only trained personnel may open the power supply.
  - ❖ Do not introduce any objects into the power supply. The output voltage adjustment potentiometer may only be actuated using an insulated screwdriver.
  - ❖ Keep away from fire and water

## Installation Instructions:

- This power supply is designed for professional indoor systems. The unit shall be mounted in an enclosure without openings in the end application. In operation the power supply must not be accessible. It may be installed and put into service by qualified personnel only.
- The correct mounting position for optimal cooling performance must be observed. **Do not cover any ventilation holes.** Leave a free space of minimum 50mm (2in.) above and below the power supply. Observe power derating.
- The internal fuse is not accessible, as it may not be replaced by the user. If this internal fuse has blown, the power supply has an internal defect and, for safety reasons, must be shipped to the local distributor. In case this internal fuse has to be replaced in the field, replace only with same type and rating of fuse for continued protection against risk of fire.
- **Recycling:** The unit contains elements that are suitable for recycling, and components that need special disposal. You are therefore requested to make sure that the power supply will be recycled at the end of its service life.