Industrial Power Supplies

TBL Series, 15 to 150 Watt

UL508 UL60950-1

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

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

* adjustable

Input Specifications

Input voltage	– AC nominal rated		**100 – 240 VAC; 50/60 Hz**
		TBL 150 models:	**100 – 120 / 220 – 240 VAC; 50/60 Hz**
	– AC range (designed for)		**85 – 264 VAC; 47 – 63 Hz**
		TBL 150 models:	**85 – 132 / 187 – 264 VAC; 47 – 63 Hz**
	– Power derating at low input voltage		**5% below 90 VAC**
Harmonic limits			**EN 61000-3-2, Class A**
Recommended circuit breaker (characteristic C or slow blow fuse)			**6.0 A**

Output Specifications

Output voltage adjustable range	5 VDC model:	**5.0 – 5.2 VDC**
	12 VDC models:	**12 – 16 VDC**
	24 VDC models:	**24 – 28 VDC**
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**
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

Temperature ranges	– Operating	**–25°C to +70°C max. (with derating)**
	– 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 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)
	– CB test certificate	**IEC 60950-1** **IEC/EN 61010-1, IEC/EN 61010-2-201**
	– SIQ type approved	**EN 60950-1** **IEC/EN 61010-1, IEC/EN 61010-2-201** **EN 50178, EN 60204-1, EN 61558-2-16**
	– CSA certificate of compliance	**CAN/CSA-C22.2 No. 60950-1-07 2nd Ed** **UL 60950-1 2nd Ed**
	– Certification documents	www.tracopower.com/overview/tbl

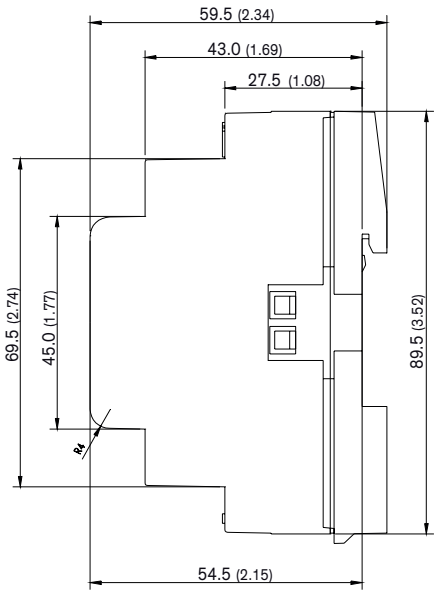
Electromagnetic compatibility (EMC), emissions			**EN 61000-6-3**	
	– Conducted RI suppression on input		**EN 55022 class B**	
	– Radiated RI suppression		**EN 55022 class B**	
Electromagnetic compatibility (EMC), immunity			**EN 61000-6-2**	
	– Electrostatic discharge (ESD)		**EN 61000-4-2**	**4 kV / 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**	

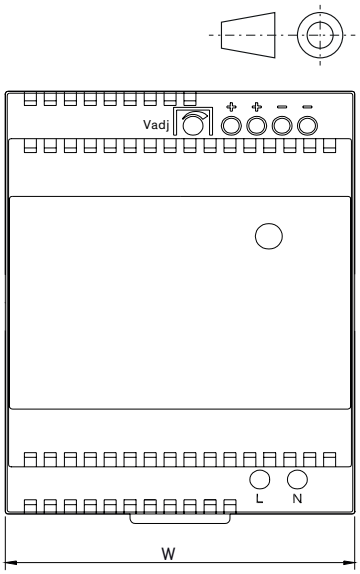
General Specifications

Protection class		class II as per IEC/EN 61140
Case protection		IP 20 (IEC 60529)
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	www.tracopower.com/overview/tbl RoHS directive 2011/65/EU

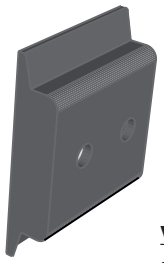
Case Dimensions

Model	Width (W) mm (inch)	Weigth g (oz)
TBL 015	26.3 (1.04)	100 (3.53)
TBL 030	52.5 (2.07)	160 (5.64)
TBL 060	70.0 (2.76	230 (8.11)
TBL 090	105.0 (4.13)	340 (12.0)
TBL 150	175 (6.89)	625 (22.0)





Dimensions in [mm], () = Inch
Tolerances: ±0.5 mm (±0.02)



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

	Description	Wire size	Max. terminal screw locked torque
AC Input	15 – 90 W models	0.5 – 2.5 mm² / AWG 20 – 14	0.5 Nm
AC Input	150 W model	1.3 – 2.5 mm² / AWG 16 – 14	
DC Output	15 – 90 W models	1.5 – 2.5 mm² / AWG 16 – 14	
DC Output	150 W model	2.5 mm² / AWG 14	