Industrial Power Supplies

TBL Series, 15 to 150 Watt

Scheme
IEC/EN 60950-1

UL 508

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
- 5 power ranges from 15 to 150 W
- Universal input range 85 to 264 VAC
- 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 60 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	86 %
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
	– DC range (designed for)		120 – 373 VDC (except TLB 150 models)
	– Power derating at low input voltage		5% below 90 VAC or 127 VDC
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

Hold-up time	115 VAC	230 VAC
	min. 10 ms	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:	>1,500 Mio h
		TBL 060:	>2,100 Mio h
		all other models:	>1,300 Mio h
Safety standards		15 – 90 W models:	UL 508 UL 1310, class II IEC/EN 60950-1, UL 60950-1, EN 50178, EN 60204, EN 61558-2-8 CSA C22.2 No. 60950-1 2003
Safety approvals	– CB report (IEC/EN 60950-1)		www.tracopower.com/products/tbl-cb.pdf
	– UL approval		UL 508 listed www.tracopower.com/products/tbl-ul508.pdf
		15 – 90 W models:	UL 1310 listed www.tracopower.com/products/tbl-ul1310.pdf
	– CSA certification (UL 60950-1, CSA 60950-1-03)		www.tracopower.com/products/tbl-csa.pdf
	– SIQ certificate (IEC/EN 60950-1)		www.tracopower.com/products/tbl-siq.pdf
	– Bureau Veritas		www.tracopower.com/products/tbl-bv.pdf
Electromagnetic compatibility (EMC), emissions			EN 61000-6-3
	– Conducted RI suppression on input		EN 55022 class B
	– Radiated RI suppression		EN 55022 class B

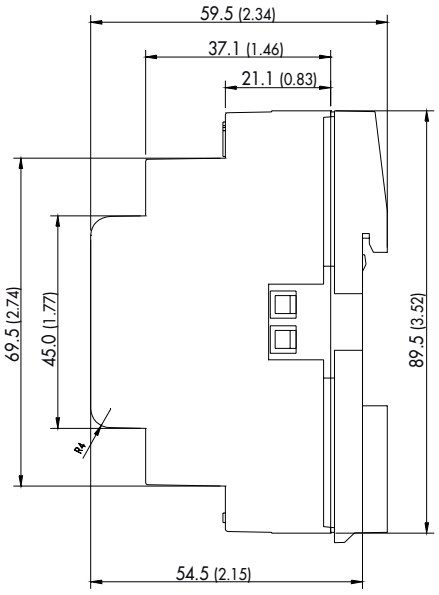
Electromagnetic compatibility (EMC), immunity			EN 61000-6-2
	– Electrostatic discharge (ESD)	EN 61000-4-2	4 kV / 8 kV
	– Radiated RF field immunity	EN 61000-4-3	3 V/m
	– Electrical fast transient / burst immunity	EN 61000-4-4	1 kV / 0.5 kV
	– Surge immunity line – ground	EN 61000-4-5	2 kV
	– Surge immunity line – line	EN 61000-4-5	1 kV
	– Surge immunity output	EN 61000-4-5	0.5 kV
	– Immunity to conducted RF disturbances	EN 61000-4-6	3 V
	– Mains voltage dips and interruptions	EN 61000-4-11	30 % /10 mS, 60 % /100 mS

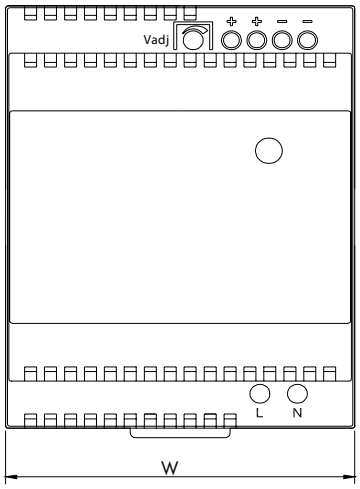
General Specifications

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	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/products/tbl-inst.pdf
Environmental compliance	– Reach – RoHS	www.tracopower.com/products/tbl-reach.pdf RoHS directive 2011/65/EU

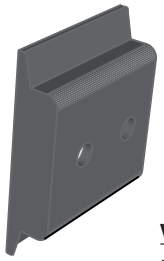
Case Dimensions

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
AC Input	all models: L, N only (2 pin terminal)	AWG 26 – 16 / 1.5 mm² max.
DC Output	15 – 30 W models: single terminal	AWG 26 – 14 / 1.5 mm² max.
DC Output	60 – 150 W models: double terminal	AWG 26 – 14 / 1.5 mm² max.

Specifications can be changed any time without notice.

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