



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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### 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

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	30 W	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
	– AC range (designed for)	TBL 150 models: 100 – 120 / 220 – 240 VAC; 50/60 Hz
	– Power derating at low input voltage	TBL 150 models: 85 – 264 VAC; 47 – 63 Hz 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**

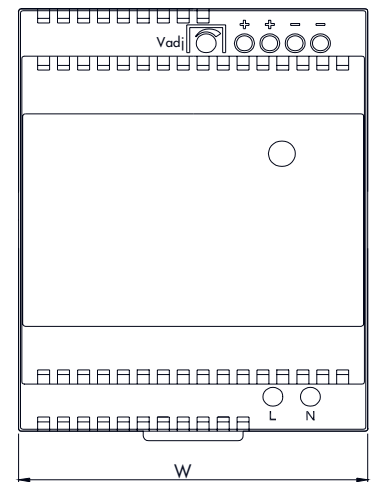
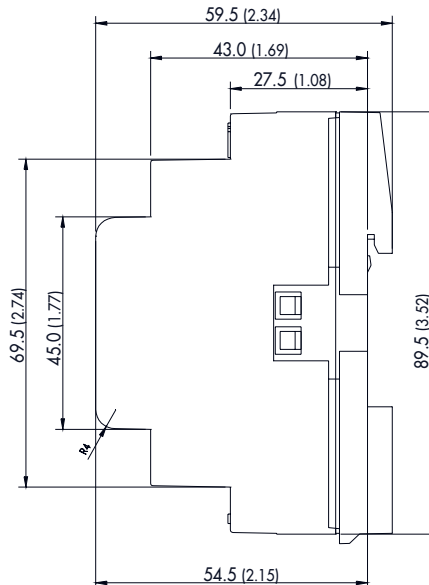
Temperature ranges	– Operating	–25°C to +70°C max.		
	– Storage	–40°C to +85°C max.		
Power derating		2.5 %/K above 60°C		
Humidity (non condensing)		5 – 95 % rel. H		
Temperature coefficient		0.02 %/K		
Reliability, calculated MTBF at +25°C acc. to IEC 61709	TBL 015:	>1.5 Mio h		
	TBL 060:	>2.1 Mio h		
	all other models:	>1.3 Mio h		
Safety standards	– UL certificate of compliance	UL 508 listed UL 1310, class II (15 – 90 W models)		
	– CB test certificate	IEC 60950-1:2005 2nd Ed +A1:2009		
	– SIQ type approved	EN 60950-1:2006 +Am1:2010 +Am11:2009 +Am12:201		
	– CSA certificate of compliance	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		<a href="http://www.tracopower.com/overview/tbl">www.tracopower.com/overview/tbl</a>		
Electromagnetic compatibility (EMC), emissions	– Conducted RI suppression on input	EN 61000-6-3		
	– Radiated RI suppression	EN 55022 class B EN 55022 class B		
Electromagnetic compatibility (EMC), immunity	– Electrostatic discharge (ESD)	EN 61000-6-2		
	– Radiated RF field immunity	EN 61000-4-2	4 kV / 8 kV	criteria B
	– Electrical fast transient / burst immunity	EN 61000-4-3	10 V/m	criteria A
	– Surge immunity line – ground	EN 61000-4-4	±2 kV	criteria B
	– Surge immunity line – line	EN 61000-4-5	2 kV	criteria B
	– Immunity to conducted RF disturbances	EN 61000-4-5	1 kV	criteria B
	– Immunity to conducted RF disturbances	TBL 90/150: EN 61000-4-6	3 V	criteria A
	– Magnetic field immunity	other models: EN 61000-4-6	10 V	criteria A
	– Mains voltage dips and interruptions	EN 61000-4-8	100 A/m	criteria A
	– Voltage Sag immunity	EN 61000-4-11 SEMI F47-0706		

**General Specifications**

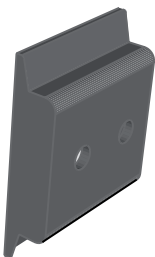
Protection class		class II as per IEC/EN 61140
Case protection		IP 20 (IEC 60529)
Environment	<ul style="list-style-type: none"> <li>- Vibration acc. IEC 60068-2-6;</li> <li>- Shock acc. IEC 60068-2-27</li> </ul>	3 axis, sine sweep, 10 – 55 Hz, 0.075 mm 3 axis, 15 g half sine, 11 ms
Enclosure material		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 mm <sup>2</sup>
Installation instructions		<a href="http://www.tracopower.com/overview/tbl">www.tracopower.com/overview/tbl</a>
Environmental compliance	<ul style="list-style-type: none"> <li>- Reach</li> <li>- RoHS</li> </ul>	<a href="http://www.tracopower.com/overview/tbl">www.tracopower.com/overview/tbl</a> RoHS directive 2011/65/EU

**Case Dimensions**

Model	Width (W) mm (inch)	Weight 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	15 – 90 W models	0.5 – 2.5 mm <sup>2</sup> / AWG 20 – 14
AC Input	150 W model	1.3 – 2.5 mm <sup>2</sup> / AWG 16 – 14
DC Output	15 – 90 W models	1.5 – 2.5 mm <sup>2</sup> / AWG 16 – 14
DC Output	150 W model	2.5 mm <sup>2</sup> / AWG 14

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at [www.tracopower.com](http://www.tracopower.com)