

- Low profile case, module depth only 55 mm
- Suitable for mounting in domestic installation panels
- Very high efficiency and low standby power → compliance to ECO-Standard
- High power density
- Low output ripples and spikes
- Suitable for household appliance and industrial applications
- For distributed power
- UL 1310 class II, NEC class 2 compliance
- UL 508 listed
- Universal input range 85 to 264 VAC
- Operating temperature range: -25°C to +70°C
- Adjustable output voltage
- Short circuit and overload protection
- DC-OK indicator LED



This new DIN-Rail mounting power supplies are designed for industrial and residential applications. They are lower cost than the existing TBL range, with similar electrical specifications. Additionally, they fully comply to the new standby power and efficiency requirements (ECO Standard). They are intended for connecting as class II devices, so the safety earth connection is not required. They are mountable in flat racks due to their small dimensions in depth. Their dimensions comply to the DIN 43880 standard.

Models				
Order Code	Output Power (max.)	Output Voltage* (nom.)(adjustable)	Output Current (max.)	Efficiency (typ.)
TBLC 06-105	6 W	5.0 VDC	1.2 A	74 %
TBLC 06-112	6 W	12 VDC	0.5 A	81 %
TBLC 06-124	6 W	24 VDC	0.25 A	79 %
TBLC 15-105	12 W	5.0 VDC	2.4 A	81 %
TBLC 15-112	15 W	12 VDC	1.25 A	85 %
TBLC 15-124	15 W	24 VDC	0.63 A	85 %
TBLC 25-105	20 W	5.0 VDC	4.0 A	82 %
TBLC 25-112	24 W	12 VDC	2.0 A	86 %
TBLC 25-124	25 W	24 VDC	1.05 A	87 %
TBLC 50-112	48 W	12 VDC	4.0 A	88 %
TBLC 50-124	50 W	24 VDC	2.1 A	89 %
TBLC 75-112	72 W	12 VDC	6.0 A	89 %
TBLC 75-124	75 W	24 VDC	3.1 A	89 %
TBLC 90-112	90 W	12 VDC	7.5 A	90 %
TBLC 90-124	90 W	24 VDC	3.75 A	90 %

## Input Specifications

Input voltage	– nominal ranges – effective ranges	100 – 240 VAC; 50/60 Hz 85 – 264 VAC; 47-63 Hz (below 100 VAC a derating of 2 %/V is required)
Input voltage frequency		47 – 63 Hz
No load power consumption	6–50 W models: 75–90 W models:	< 0.3 W < 0.5 W
Harmonic limits		EN 61000-3-2, class A
Leakage current		0.25 mA max.
Inrush current	6–50 W models: 75–90 W models:	15/30 A (115/230 VAC) 25/50 A (115/230 VAC)

## Output Specifications

Output voltage / current	5 VDC models: 12 VDC models: 24 VDC models:	5.0 – 5.5 VDC* 12.0 – 16.0 VDC* 24.0 – 28.0 VDC*
Regulation	– Input variation – Load variation (10–90 %)	0.3 % max. 0.3 % max.
Hold-up time		60 ms min. (at 230 VAC) 15 ms typ. (at 115 VAC)
Start-up	– Start up behavior – Start up time	TBLC 75-112 and 90-112: other models: 0-75 % constant current load 0-100 % constant current load 1 s max.
Ripple and Noise (20 MHz bandwidth)		50 mVp-p max.
Current limit (continuous)		105 – 130 % of I <sub>out</sub> nom., constant current
Short circuit current	TBLC 75-112 and 90-112: other models:	70 – 90 % of I <sub>out</sub> nom. (typ.), foldback 120 – 200 % of I <sub>out</sub> nom.
Output overvoltage protection		150 % of V <sub>out</sub> nom. (typ.)
DC OK signal	– trigger threshold ON	> 95 % of the set voltage

## General Specifications

Operating temperature		–25°C to +70°C derating above +55°C: 2.5 %/K
Storage temperature		–40°C to +85°C
Temperature coefficient		0.02 %/K
Cooling		convection cooling, no internal fan
Pollution degree		2
Humidity (non condensing)		5–95 % rel. H max.
Altitude during operation		4800 m max.
Isolation	– I/O isolation	3000 VAC (4242 VDC)
Class of protection		safety class II
Degree of protection		IP 20 (IEC/EN 60529)
Reliability, calculated MTBF (at 25°C acc. to IEC 61709)		> 1.9 Mio. h

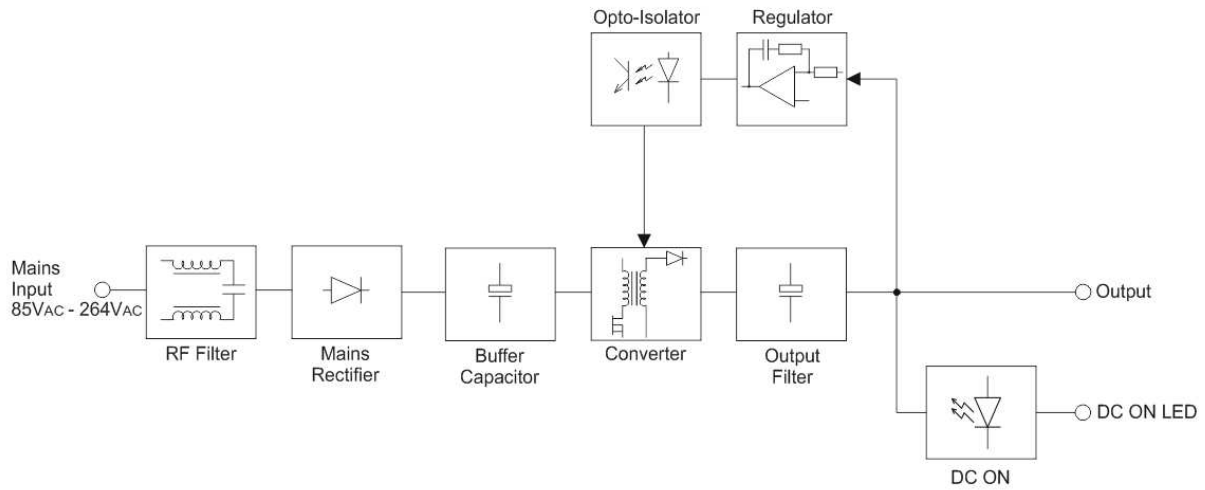
\* Output voltage can be adjusted as indicated. However, output power has to be maintained at nominal value. This means the output nominal current has to be reduced in accordance with the increase of output voltage.

**General Specifications (continued)**

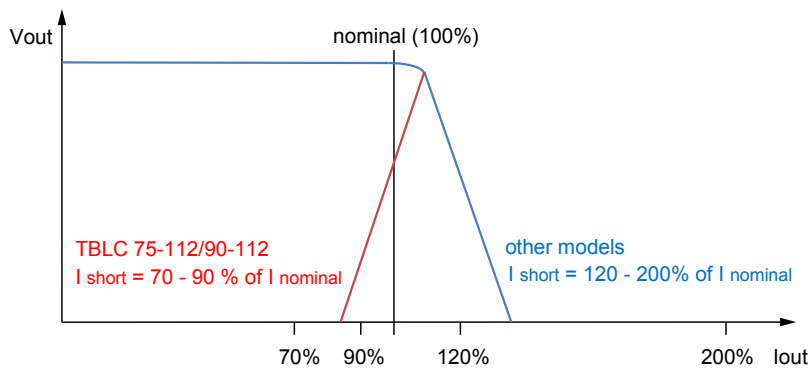
<b>Safety standards</b>	<ul style="list-style-type: none"> <li>– Information technology equipment</li> <li>– Household applications</li> <li>– Safety of machinery</li> <li>– Safety for power electronic converter systems</li> <li>– Industrial control equipment</li> <li>– Class II Power units</li> <li>– NEC class 2</li> <li>– Electronic equipment for power installation</li> <li>– Safety of transformers</li> <li>– Certification documents</li> </ul>	IEC/EN 60950-1, UL 60950-1 IEC/EN 60335-1 EN 60204 IEC/EN 62477 UL 508 UL 1310 UL 1310 (not TBLC 90-xxx and TBLC 75-112) EN 50178 EN 61558-2-8, EN 61558-2-16 <a href="http://www.tracopower.com/overview/tbhc">www.tracopower.com/overview/tbhc</a>
<b>Electromagnetic compatibility (EMC), Emissions</b>	<ul style="list-style-type: none"> <li>– Conducted RI suppression on input</li> <li>– Conducted disturbance on output TBLC 50/75/90:</li> <li>– Radiated RI suppression</li> <li>– Harmonic current emissions</li> </ul>	EN 61000-6-3, EN 61204-3 EN 55032 class B EN 55014 class B, CISPR 16-1-1 EN 55032 class B IEC 61000-3-2 class A
<b>Electromagnetic compatibility (EMC), Immunity</b>	<ul style="list-style-type: none"> <li>– Electrostatic discharge (ESD)</li> <li>– Radiated RF field immunity</li> <li>– Electrical fast transient / burst immunity</li> <li>– Surge immunity</li> <li>– Immunity to conducted RF disturbances</li> <li>– Power frequency field immunity</li> <li>– Mains voltage dips and interruptions</li> </ul>	EN 61000-6-2, EN 61204-3 IEC/EN 61000-4-2 4 kV/8 kV criteria B IEC/EN 61000-4-3 10 V/m criteria A IEC/EN 61000-4-4 2 kV criteria B IEC/EN 61000-4-5 1 kV/2 kV criteria B IEC/EN 61000-4-6 10 V criteria A IEC/EN 61000-4-8 30 A/m criteria A IEC/EN 61000-4-11 0% / 20 ms 40% / 200 ms 70% / 500 ms
<b>Environment</b>	<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, 2 g sine sweep, 10 – 150 Hz, 90 min 3 axis, 30 g half sine, 11 ms
<b>Enclosure material</b>		V2 rated plastic
<b>Mounting</b>	<ul style="list-style-type: none"> <li>– DIN-rail mounting</li> </ul>	for DIN-rails as per EN 50022 – 35×15/7.5 (snap-on with self-locking spring) (included)
<b>Environmental compliance</b>	<ul style="list-style-type: none"> <li>– Reach</li> <li>– RoHS</li> </ul>	<a href="http://www.tracopower.com/products/reach-declaration.pdf">www.tracopower.com/products/reach-declaration.pdf</a> RoHS directive 2011/65/EU
<b>Connection</b>		screw terminal with combi-type screw heads for wire size 0.5 – 2.5 mm <sup>2</sup>

### Function Specification

#### Block Diagram



#### Current Limit Characteristic



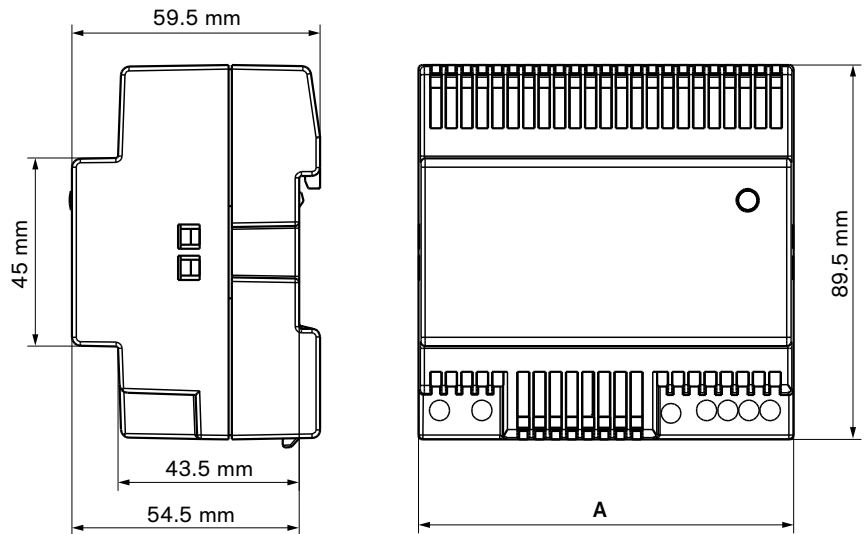
The load characteristic is designed to accomplish reliable start-up of heavy loads.

Note: All 6 Watt models (TBLC 06-xxx) implement a pulsing power characteristic when in overload or short circuit conditions.

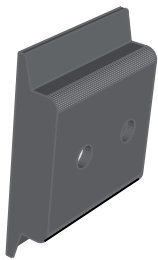
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

### Outline Dimensions

DIN 43880 Size 1		Weight
Model	Width A	[g]
TBLC 06	18 mm	60
TBLC 15	27 mm	80
TBLC 25	36 mm	110
TBLC 50	54 mm	180
TBLC 75	72 mm	220
TBLC 90	90 mm	280



Tolerances:  $\pm 0.5$  mm



#### Wall Mounting Bracket

Instead of on a DIN-rail, the modules can also be 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	Torque
<b>AC Input</b>	all models: L, N only (2 pin terminal)	AWG 20 – 14 / 0.5 – 2.5 mm <sup>2</sup> max.	0.5 Nm
<b>DC Output</b>	6 – 50 W models: single terminal	AWG 20 – 14 / 0.5 – 2.5 mm <sup>2</sup> max.	0.5 Nm
<b>DC Output</b>	75 – 90 W models: double terminal	AWG 20 – 14 / 0.5 – 2.5 mm <sup>2</sup> max.	0.5 Nm