

AC/DC Industrial Power Supply

TBLC 15 Series, 15 Watt

- High power density in low profile case, module depth < 55 mm
- Suitable for mounting in domestic installation panels
- Very high efficiency and low standby power -> compliance to ECO-Standard
- Low output ripples and spikes
- Suitable for household appliance and industrial application
- For distributed power
- Operating temperature range: -25°C to +70°C
- UL 508 listed
- UL 1310 class II, NEC class 2 compliance
- 3-year product warranty



UL 508 UL 60950-1 IEC 60335-1

IEC 60950-1

IEC 60335-1

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 15-105	12 W	5 VDC (5.0 - 5.5 VDC)	2'400 mA	81 %
TBLC 15-112		12 VDC (12.0 - 16.0 VDC)	1'250 mA	85 %
TBLC 15-124	15 W	24 VDC (24.0 - 28.0 VDC)	630 mA	85 %

Input Specifications

Input Voltage	Operational Range: 85 - 264 VAC (Full Range) Rated Range: 100 - 240 VAC (Full Range)
Input Frequency	Operational Range: 47 - 63 Hz Certified: 50/60 Hz
Power Consumption	- No load & Vin = 230 VAC - No load & Vin = 115 VAC 300 mW max. (Ready to meet ErP directive) 300 mW max.
Input Inrush Current	- At 230 VAC - At 115 VAC 30 A max. 15 A max.
Input Protection	T 2 A / 250 VAC (Internal Fuse in L)
Recommended Input Fuse	(The need of an external fuse has to be assessed in the final application.)

Output Specifications

Output Voltage Adjustment	5 VDC model: 5.0 - 5.5 VDC 12 VDC model: 12.0 - 16.0 VDC 24 VDC model: 24.0 - 28.0 VDC (By trim potentiometer) Output power must not exceed rated power!
Voltage Set Accuracy	±1% max.
Regulation	- Input Variation (Vmin - Vmax) - Load Variation (10 - 90%) 0.3% max. 0.3% max.
Ripple and Noise (20 MHz Bandwidth)	50 mVp-p max.
Minimum Load	Not required
Temperature Coefficient	±0.02 %/K max.
Hold-up Time	- At 230 VAC - At 115 VAC 60 ms min. 15 ms min.
Start-up Time	- At 230 VAC - At 115 VAC 1'000 ms max. 1'000 ms max.
Short Circuit Protection	Continuous, Automatic recovery 120 - 200% of Iout nom.
Overload Protection	Constant Current Mode
Output Current Limitation	105 - 130% of Iout max.
Overvoltage Protection	125 - 150% of Vout nom.
Transient Response	- Peak Variation - Response Time 300 mV max. (10% to 90% Load Step) 2'500 µs typ. (10% to 90% Load Step)

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Safety Specifications

Standards	- IT / Multimedia Equipment - Industrial Control Equipment - Household - Machines Equipment - Power Installation - Measurement, Control & Lab. - Power Transformers - Converter System - Certification Documents	EN 60950-1 IEC 60950-1 UL 60950-1 UL 508 EN 60335-1 IEC 60335-1 EN 60204 EN 50178 EN 61010-1 EN 61010-2-201 IEC 61010-1 IEC 61010-2-201 EN 61558-2-8 EN 61558-2-16 EN 62477 IEC 62477 www.tracopower.com/overview/tblc15
Protection Class		Class I & II (Prepared): Reinforced Insulation
	See application note:	www.tracopower.com/info/protection-class.pdf
Class 2 Power Units		UL 1310 NEC Class 2
Pollution Degree		PD 2
Over Voltage Category		OVC II

EMC Specifications

EMI (Emissions)	- Conducted Emissions - Radiated Emissions - Harmonic Current Emissions	EN 61000-6-3 (Generic Residential) EN 61204-3 (Low Voltage Power Supplies) EN 55011 class A (internal filter) EN 55011 class B (internal filter) EN 55032 class A (internal filter) EN 55032 class B (internal filter) EN 55011 class A (internal filter) EN 55011 class B (internal filter) EN 55032 class A (internal filter) EN 55032 class B (internal filter) EN 61000-3-2, class A
EMS (Immunity)	- Electrostatic Discharge - RF Electromagnetic Field - EFT (Burst) / Surge - Conducted RF Disturbances - PF Magnetic Field - Voltage Dips & Interruptions - Voltage Sag Immunity	Air: EN 61000-4-2, ±8 kV, perf. criteria B Contact: EN 61000-4-2, ±4 kV, perf. criteria B EN 61000-4-3, 10 V/m, perf. criteria A EN 61000-4-4, ±2 kV, perf. criteria B L to L: EN 61000-4-5, ±1 kV, perf. criteria B L to PE: EN 61000-4-5, ±2 kV, perf. criteria B EN 61000-4-6, 10 Vrms, perf. criteria A Continuous: EN 61000-4-8, 30 A/m, perf. criteria A 230 VAC / 50 Hz: EN 61000-4-11 30%, 25 periods, perf. criteria A 60%, 10 periods, perf. criteria B >95%, 1 period, perf. criteria A 115 VAC / 60 Hz: EN 61000-4-11 30%, 25 periods, perf. criteria B 60%, 10 periods, perf. criteria B >95%, 1 period, perf. criteria B SEMI F47, criteria A
EMC / Environmental	- Certification Documents	www.tracopower.com/overview/tblc15

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

General Specifications

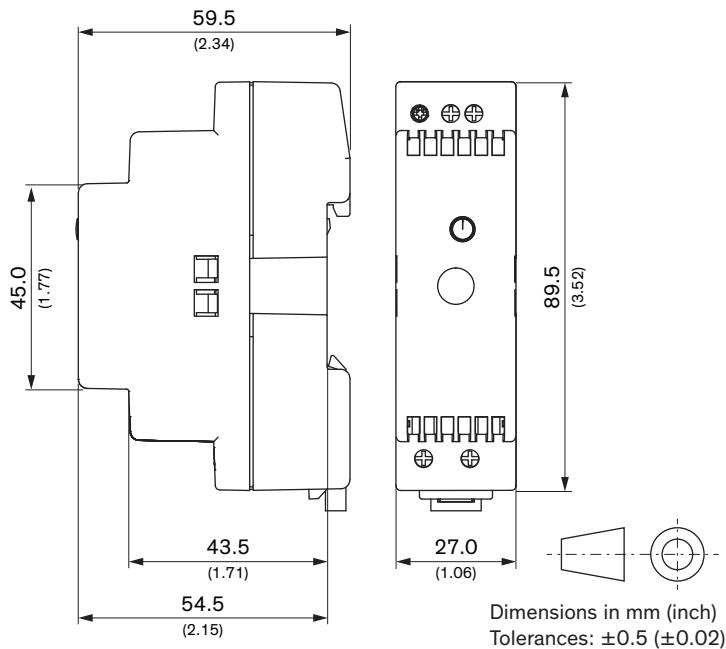
Relative Humidity	95% max. (non condensing)	
Temperature Ranges	- Operating Temperature	-25°C to +70°C
	- Case Temperature	+70°C max.
	- Storage Temperature	-40°C to +85°C
Power Derating	- High Temperature	2.5 %/K above 55°C
	- Low Input Voltage	2 %/V below 100 VAC
Cooling System	Natural convection (20 LFM)	
Altitude During Operation	5'000 m max. (Lower altitude required for IEC61558-1 & 60335 of 3000 m)	
Regulator Topology	Flyback Converter	
Switching Frequency	93 - 130 kHz (PWM)	
Insulation System	Reinforced Insulation	
Isolation Test Voltage	- Input to Output, 60 s	3'000 VAC
Creepage	- Input to Output	7.4 mm min.
Clearance	- Input to Output	7.4 mm min.
Leakage Current	- Touch Current	250 µA max.
Reliability	- Calculated MTBF	1'900'000 h (IEC 61709)
Environment	- Vibration	IEC 60068-2-6 2 g, 3 axis, sine sweep, 3x60 min, 10-150 Hz
	- Mechanical Shock	IEC 60068-2-27 30 g, 3 axis, half sine, 11 ms
Case Ingress Protection	IP 20 (acc. IEC 60529)	
Housing Material	Plastic (UL 94 V-2 rated)	
Housing Type	Plastic Case	
Mounting Type	DIN-Rail Mount (EN 60715 - 35x7.5mm/35x15mm)	
Connection Type	Screw Terminal	
Weight	80 g	
Thermal Impedance	- Case to Ambient	3.11 K/W typ.
Status Indicator	Indicated by green LED	
Environmental Compliance	- REACH Declaration	www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant www.tracopower.com/info/rohs-declaration.pdf Exemptions: 7(a), 7(c)-I (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (Q5A rule).)
	- RoHS Declaration	www.tracopower.com/info/rohs-declaration.pdf
	- SCIP Reference Number	6b9e688d-3700-4b93-b964-d24e50fea049

Additional Information

Supporting Documents	www.tracopower.com/overview/tblc15
Frequently Asked Questions	www.tracopower.com/glossary-faq
Glossary	www.tracopower.com/info/glossary.pdf

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Outline Dimensions



Dimensions in mm (inch)
Tolerances: ± 0.5 (± 0.02)

Wiring		
Description	Wire size	Torque
AC Input all models: L, N only (2 pin terminal)	AWG 20 - 14 0.5 - 2.5 mm ² max.	0.5 Nm
DC Output single terminal	AWG 20 - 14 0.5 - 2.5 mm ² max.	0.5 Nm