

- 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



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 50-112	48 W	12 VDC (12.0 - 16.0 VDC)	4'000 mA	88 %
TBLC 50-124	50 W	24 VDC (24.0 - 28.0 VDC)	2'100 mA	89 %

Input Specifications

Input Voltage		85 - 264 VAC (Full Range)
Input Frequency		47 - 63 Hz
Power Consumption	- At no load	300 mW max. (Ready to meet ErP directive)
Input Inrush Current	- At 230 VAC	30 A max.
	- At 115 VAC	15 A max.
Recommended Input Fuse		(The need of an external fuse has to be assessed in the final application.)

Output Specifications

Output Voltage Adjustment		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!
Regulation	- Input Variation (Vmin - Vmax)	0.3% max.
	- Load Variation (10 - 90%)	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	60 ms min.
	- At 115 VAC	15 ms min.
Start-up Time	- At 230 VAC	1'000 ms max.
	- At 115 VAC	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	700 mV max. (10% to 90% Load Step)
	- Response Time	5000 µs typ. (10% to 90% Load Step)

Safety Specifications

Safety Standards	- IT / Multimedia Equipment	EN 60950-1 IEC 60950-1 UL 60950-1
	- Industrial Control Equipment	UL 508
	- Household	EN 60335-1 IEC 60335-1
	- Machines Equipment	EN 60204
	- Power Installation	EN 50178
	- Measurement, Control & Lab.	EN 61010-1 EN 61010-2-201 IEC 61010-1 IEC 61010-2-201
	- Power Transformers	EN 61558-2-8 EN 61558-2-16
	- Converter System	EN 62477 IEC 62477
	- Certification Documents	www.tracopower.com/overview/tb1c50
	Protection Class	Class I & II (Prepared): Reinforced Insulation
Class 2 Power Units		UL 1310
		NEC Class 2
Pollution Degree		PD 2
Over Voltage Category		OVC II

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

EMC Specifications

EMI Emissions		EN 61000-6-3 (Generic Residential)
	- Conducted Emissions	EN 61204-3 (Low Voltage Power Supplies)
		EN 55011 class B (internal filter)
		EN 55014-1 (internal filter)
	- Radiated Emissions	EN 55032 class B (internal filter)
		EN 55011 class B (internal filter)
		EN 55014-1 (internal filter)
		EN 55032 class B (internal filter)
	- Harmonic Current Emissions	EN 61000-3-2, class A
EMS Immunity		EN 61000-6-2 (Generic Industrial)
	- Electrostatic Discharge	EN 61204-3 (Low Voltage Power Supplies)
		Air: EN 61000-4-2, ± 8 kV, perf. criteria B
		Contact: EN 61000-4-2, ± 4 kV, perf. criteria B
	- RF Electromagnetic Field	EN 61000-4-3, 10 V/m, perf. criteria A
	- EFT (Burst) / Surge	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
	- Conducted RF Disturbances	EN 61000-4-6, 10 Vrms, perf. criteria A
	- PF Magnetic Field	Continuous: EN 61000-4-8, 30 A/m, perf. criteria A
	- Voltage Dips & Interruptions	230 VAC / 50 Hz: EN 61000-4-11
		30%, 25 periods, perf. criteria B
		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
	- Voltage Sag Immunity	SEMI F47, criteria A

General Specifications

Relative Humidity		95% max. (non condensing)
Temperature Ranges		-25°C to +70°C
	- Operating Temperature	+70°C max.
	- Case Temperature	-40°C to +85°C
	- Storage Temperature	
Power Derating		2.5 %/K above 55°C
	- High Temperature	2 %/V below 100 VAC
	- Low Input Voltage	
Cooling System		Natural convection (20 LFM)
Altitude During Operation		4'800 m max. (Lower altitude required for IEC61558-1 & 60335 of 3000 m)
Switching Frequency		80 - 105 kHz (PWM)
Insulation System		Reinforced Insulation
Isolation Test Voltage		3'000 VAC
	- Input to Output, 60 s	
Creepage		5 mm min.
	- Input to Output	
Clearance		4.6 mm min.
	- Input to Output	
Leakage Current		250 μ A max.
	- Touch Current	
Reliability		1'900'000 h (IEC 61709)
	- Calculated MTBF	
Environment		IEC 60068-2-6
	- Vibration	2 g, 3 axis, sine sweep, 3x60 min, 10-150 Hz
		IEC 60068-2-27
		30 g, 3 axis, half sine, 11 ms
	- Mechanical Shock	
Case Ingress Protection		IP 20 (acc. IEC 60529)
Housing Material		Plastic (UL 94 V-2 rated)
Connection Type		Screw Terminal
Mounting		For DIN-rails as per EN 50022 (snap-on with self locking spring) (included)
	- DIN Rail	
Weight		180 g

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

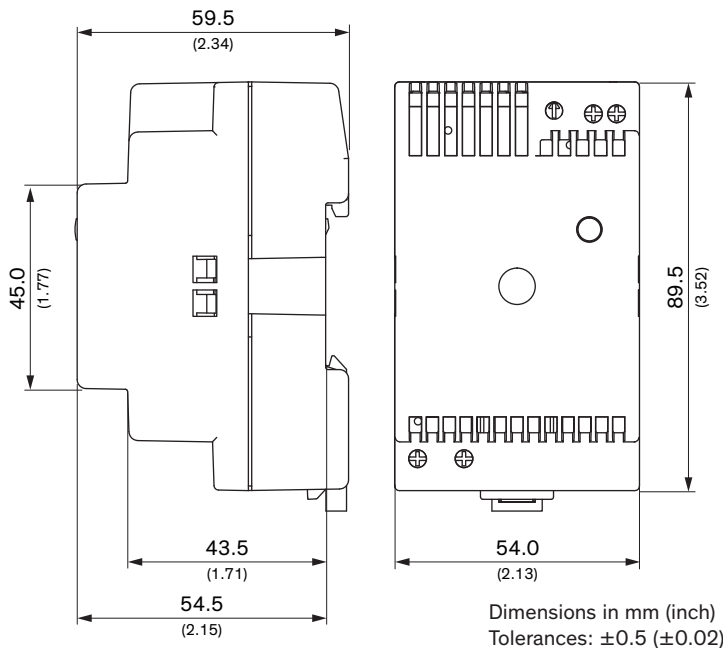
Thermal Impedance	1.42 K/W
Status Indicator	Indicated by green LED
Environmental Compliance	- REACH Declaration www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant
	- RoHS Declaration www.tracopower.com/info/rohs-declaration.pdf Exemptions: 6a, 6c, 7a, 7c-I, 7c-II

Supporting Documents

Overview Link (for additional Documents)

www.tracopower.com/overview/tbhc50

Outline Dimensions



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

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