

- 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 06-105 | 6 W | 5 VDC (5.0 - 5.5 VDC) | 1'200 mA | 74 % |
| TBLC 06-112 | | 12 VDC (12.0 - 16.0 VDC) | 500 mA | 81 % |
| TBLC 06-124 | | 24 VDC (24.0 - 28.0 VDC) | 250 mA | 79 % |

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. |
| Recommended Input Fuse | | (The need of an external fuse has to be assessed in the final application.) |

Output Specifications

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|--|--|---|
| 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 |
| Output Current Limitation | | 105 - 130% of Iout max. |
| Overvoltage Protection | | 125 - 150% of Vout nom. |
| Transient Response | - Peak Variation - Response Time | 500 mV max. (10% to 90% Load Step) 4'000 µs typ. (10% to 90% Load Step) |

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/tb1c06 |
| Protection Class | | Class I & II (Prepared): Reinforced Insulation |

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

| | |
|-----------------------|------------------------|
| Class 2 Power Units | UL 1310 NEC Class 2 |
| Pollution Degree | PD 2 |
| Over Voltage Category | OVC II |

EMC Specifications

| | |
|--------------------------------|--|
| EMI Emissions | EN 61000-6-3 (Generic Residential) EN 61204-3 (Low Voltage Power Supplies) |
| - Conducted Emissions | EN 55011 class B (internal filter) EN 55032 class B (internal filter) |
| - Radiated Emissions | EN 55011 class B (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) EN 61204-3 (Low Voltage Power Supplies) |
| - Electrostatic Discharge | 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 |
| - RF Electromagnetic Field | L to L: EN 61000-4-5, ± 1 kV, perf. criteria B |
| - EFT (Burst) / Surge | L to PE: EN 61000-4-5, ± 2 kV, perf. criteria B EN 61000-4-6, 10 Vrms, perf. criteria A |
| - Conducted RF Disturbances | Continuous: EN 61000-4-8, 30 A/m, perf. criteria A |
| - PF Magnetic Field | 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 |
| - Voltage Dips & Interruptions | 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 | - Operating Temperature: -25°C to $+70^{\circ}\text{C}$ - Case Temperature: $+70^{\circ}\text{C}$ max. - Storage Temperature: -40°C to $+85^{\circ}\text{C}$ |
| 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 | 59 - 71 kHz (PWM) |
| Insulation System | Reinforced Insulation |
| Isolation Test Voltage | 3'000 VAC |
| Creepage | 7.4 mm min. |
| Clearance | 6.6 mm min. |
| Leakage Current | 250 μA max. |
| Reliability | 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) |

All specifications valid at nominal voltage, resistive full load and $+25^{\circ}\text{C}$ after warm-up time, unless otherwise stated.

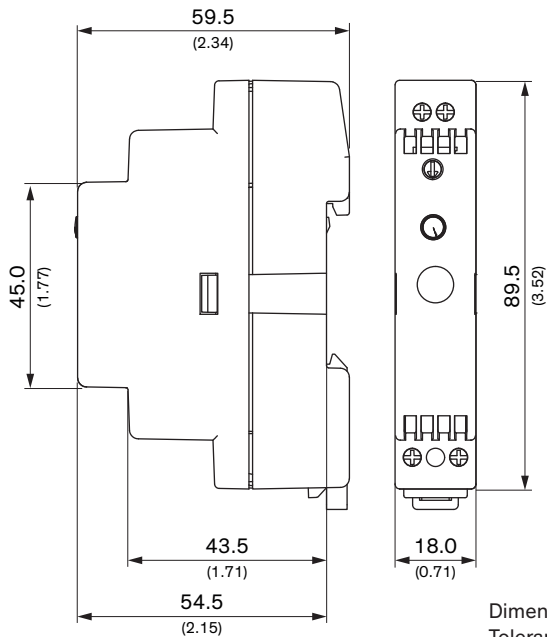
| | |
|--------------------------|---|
| Housing Type | Plastic Case |
| Mounting Type | DIN-Rail Mount (EN 60715 - 35x7.5mm/35x15mm) |
| Connection Type | Screw Terminal |
| Weight | 60 g |
| Thermal Impedance | - Case to Ambient 4.8 K/W typ. |
| Status Indicator | Indicated by green LED |
| Environmental Compliance | - REACH Declaration www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant |
| | - RoHS Declaration www.tracopower.com/info/rohs-declaration.pdf Exemptions: 7a, 7c-I (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule)) |
| | - SCIP Reference Number 4cd28c82-cbd8-4bfd-ba24-4d34da57093e |

Supporting Documents

Overview Link (for additional Documents)

www.tracopower.com/overview/tbhc06

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 |