

- Slim profile, for DIN-rail mounting
- Alternative side-mounting for flat panels
- High power factor by active power correction
- Very high efficiency up to 94%
- Power Back immunity
- 150% peak current for 4 s
- Operating temperature range: -40°C to +70°C max.
- Adjustable output voltage
- Short circuit and overload protection
- 3-year product warranty



This generation of DIN-rail power supplies combines the most efficient circuit topology with optimized cost/performance ratio for industrial environments and for electrical control cabinets. They have a very high efficiency of up to 94.0% which allows a very slim package design. The output voltage is adjustable from -2% to +17%. The case offers the potentially useful feature to fix the DIN-rail clip to the side wall for the mounting inside flat panels. Over a period of minimum 4 seconds they can operate with a boost power of 150%. The boost power facilitates the activation of stepper motors, solenoids or actuators. The units operate with a high power factor of up to 97% by active power factor correction which also keeps the input inrush current low. The TIB series are also available with other nominal power of 80, 240 or 480 Watt (+50% boost power). They come with the safety standard approvals for IEC/EN 60950-1, UL 60950-1 and UL 508.

Models

| Order Code | Output Power max. | Output Voltage nom. (adjustable) | Output Current max. | Output Current peak | Efficiency typ. |
|-------------|-------------------|----------------------------------|---------------------|---------------------|-----------------|
| TIB 120-112 | 120 W | 12 VDC (11.8 - 15.0 VDC) | 10'000 mA | 15'000 mA | 94 % |
| TIB 120-124 | | 24 VDC (23.5 - 28.0 VDC) | 5'000 mA | 7'500 mA | 94 % |
| TIB 120-148 | | 48 VDC (47.0 - 56.0 VDC) | 2'500 mA | 3'750 mA | 94 % |

Options

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|---|---|
| TIB-RMK01 | - Optional Ruggedized DIN-Rail Mounting Clip for EN 61373: www.tracopower.com/products/tib-rmk01.pdf |
| on demand (backorder with MOQ non stocking item) | - Optional models with certified DC input |

Input Specifications

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|------------------------|---------------------------|--|
| Input Voltage | - AC Range | Operational Range: 85 - 264 VAC (Full Range) Rated Range: 100 - 240 VAC (Full Range) |
| | - DC Range | Operational Range: 90 - 350 VDC Certified Range: 100 - 250 VDC Polarity: +DC: L / -DC: N (Models with certified DC input are on-demand.) |
| Input Frequency | | Operational Range: 45 - 65 Hz Certified: 50/60 Hz |
| Power Consumption | - No load & Vin = 230 VAC | 3'200 mW max. |
| | - No load & Vin = 115 VAC | 3'200 mW max. |
| Input Inrush Current | - At 230 VAC | 30 A max. |
| | - At 115 VAC | 15 A max. |
| Power Factor | - At 230 VAC | 0.8 min. (Active Power Factor Correction) |
| | - At 115 VAC | 0.97 min. (Active Power Factor Correction) |
| 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 | | 12 VDC model: 11.8 - 15.0 VDC 24 VDC model: 23.5 - 28.0 VDC 48 VDC model: 47.0 - 56.0 VDC (By trim potentiometer) Output power must not exceed rated power! |
| Voltage Set Accuracy | | ±0.25% max. |
| Regulation | - Input Variation (Vmin - Vmax) | 0.1% max. |
| | - Load Variation (10 - 90%) | 0.5% max. |
| Boost Power | | Output Current peak: See model table Peak power time: 4 s max. (auto switch off) Off Time: 10 s typ. |
| Ripple and Noise (20 MHz Bandwidth) | 12 VDC model: | 100 mVp-p max. |
| | 24 VDC model: | 100 mVp-p max. |
| | 48 VDC model: | 200 mVp-p max. |
| Capacitive Load | | Infinite |
| Minimum Load | | Not required |
| Temperature Coefficient | | ±0.02 %/K max. |
| Hold-up Time | - At 230 VAC | 20 ms min. |
| | - At 115 VAC | 20 ms min. |
| Start-up Time | - At 230 VAC | 2'000 ms max. |
| | - At 115 VAC | 2'000 ms max. |
| Short Circuit Protection | | Continuous, Automatic recovery |
| Overload Protection | | Constant Current Mode Switch off after 4 s delay, automatic restart |
| Output Current Limitation | | 155% min. of Iout max. |
| Overvoltage Protection | | 117 - 158% of Vout nom. (depending on model) 16 - 19 VDC (12 VDC model) 32 - 35 VDC (24 VDC model) 56 - 60 VDC (48 VDC model) (In case of an internal error a second voltage regulation loop keeps the output voltage at a save level, the power supply turns off and tries to restart after 10 s.) |
| Transient Response | - Peak Variation | 800 mV max. (10% to 90% Load Step) |
| | - Response Time | 2'000 µs typ. (10% to 90% Load Step) |

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

Safety Specifications

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|-----------------------|--------------------------------|--|
| Standards | - IT / Multimedia Equipment | CSA-C22.2, No. 60950-1 EN 60950-1 EN 62368-1 IEC 60950-1 IEC 62368-1 UL 60950-1 |
| | - Industrial Control Equipment | UL 508 |
| | - Measurement, Control & Lab. | EN 61010-1 EN 61010-2-201 IEC 61010-1 IEC 61010-2-201 UL 61010-1 UL 61010-2-201 |
| | - Certification Documents | www.tracopower.com/overview/tib120 |
| Protection Class | | Class I (Prepared): Connection to PE |
| Pollution Degree | | PD 2 |
| Over Voltage Category | | OVC II |

EMC Specifications

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|---------------|--------------------------------|--|
| EMI Emissions | | EN 61000-6-3 (Generic Residential) EN 61204-3 (Low Voltage Power Supplies) EN 50121-3-2 (EMC for Rolling Stock) EN 50121-4 (Railway Application Signalling) |
| | - 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) EN 50121-3-2 (EMC for Rolling Stock) EN 50121-4 (Railway Application Signalling) |
| | - Electrostatic Discharge | Air: EN 61000-4-2, ± 8 kV, perf. criteria A Contact: EN 61000-4-2, ± 4 kV, perf. criteria A |
| | - 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 20%, 250 periods, perf. criteria C 30%, 25 periods, perf. criteria C 60%, 10 periods, perf. criteria C >95%, 1 period, perf. criteria B >95%, 5 periods, perf. criteria C 115 VAC / 60 Hz: EN 61000-4-11 20%, 250 periods, perf. criteria C 30%, 25 periods, perf. criteria C 60%, 10 periods, perf. criteria C >95%, 1 period, perf. criteria B >95%, 5 periods, perf. criteria C |
| | - Voltage Sag Immunity | SEMI F47, criteria A |

General Specifications

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|--------------------|-------------------------|---------------------------|
| Relative Humidity | | 95% max. (non condensing) |
| Temperature Ranges | - Operating Temperature | -40°C to +70°C |

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

| | | |
|--|--|---|
| Power Derating | - High Temperature - Low Input Voltage | 2 %/K above 60°C (at standard operation) 3 %/K above 60°C (at peak power mode) 3 %/V below 90 VAC (at standard operation) 1.5 %/V below 100 VAC (at peak power mode) 1 %/V below 100 VDC (for DC models) |
| Over Temperature Protection Switch Off | - Protection Mode | Automatic recovery |
| Cooling System | | Natural convection (20 LFM) |
| Altitude During Operation | | 2'000 m max. |
| Regulator Topology | | LCC Converter |
| Switching Frequency | | 70 - 100 kHz (PWM) |
| Insulation System | | Reinforced Insulation |
| Isolation Test Voltage | - Input to Output, 60 s - Input to Case or PE, 60 s - Output to Case or PE, 60 s | 3'000 VAC 1'500 VAC 750 VDC |
| Creepage | - Input to Output - Input to Case or PE - Output to Case or PE | 8 mm min. 4 mm min. 1.5 mm min. |
| Clearance | - Input to Output - Input to Case or PE - Output to Case or PE | 8 mm min. 4 mm min. 1.5 mm min. |
| Isolation Resistance | - Input to Output, 500 VDC | 4'000 MΩ min. |
| Leakage Current | - Earth Leakage Current - Touch Current | 3500 μA max. 310 μA max. |
| Reliability | - Calculated MTBF | 1'450'000 h (IEC 61709) |
| Environment | - Vibration - Mechanical Shock | EN 61373 IEC 60068-2-6 2 g, 3 axis, sine sweep, 10-55 Hz, 11 oct/min EN 61373 IEC 60068-2-27 25 g, 3 axis, half sine, 11 ms |
| Housing Material | | Aluminum (Chassis) Stainless Steel (Cover) |
| Housing Type | | Metal Case |
| Mounting Type | | DIN-Rail Mount (EN 60715 - 35x7.5mm/35x15mm) |
| Connection Type | | Screw Terminal |
| Weight | | 461 g |
| Thermal Impedance | - Case to Ambient | 0.8 K/W typ. |
| Power Back Immunity | | 12 VDC model: 19 V max. 24 VDC model: 35 V max. 48 VDC model: 60 V max. (When external voltage is supplied above set output voltage and below OVP threshold, the power supply will function normally without switch off or destruction, even if external voltage is applied continuously.) |
| Power OK Signal | - Trigger Threshold - Power OK - Power Off - Pin Specifications | Relay Output 12 VDC model: 10.5 - 11.1 VDC 24 VDC model: 21 - 23 VDC 48 VDC model: 42 - 46 VDC Relay contact closed Relay contact open 30 VDC / 1 A max. |
| Status Indicator | | Also indicated by green LEDs: front and side |

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

Environmental Compliance - REACH Declaration

www.tracopower.com/info/reach-declaration.pdf

- RoHS Declaration

REACH SVHC list compliant

REACH Annex XVII compliant

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

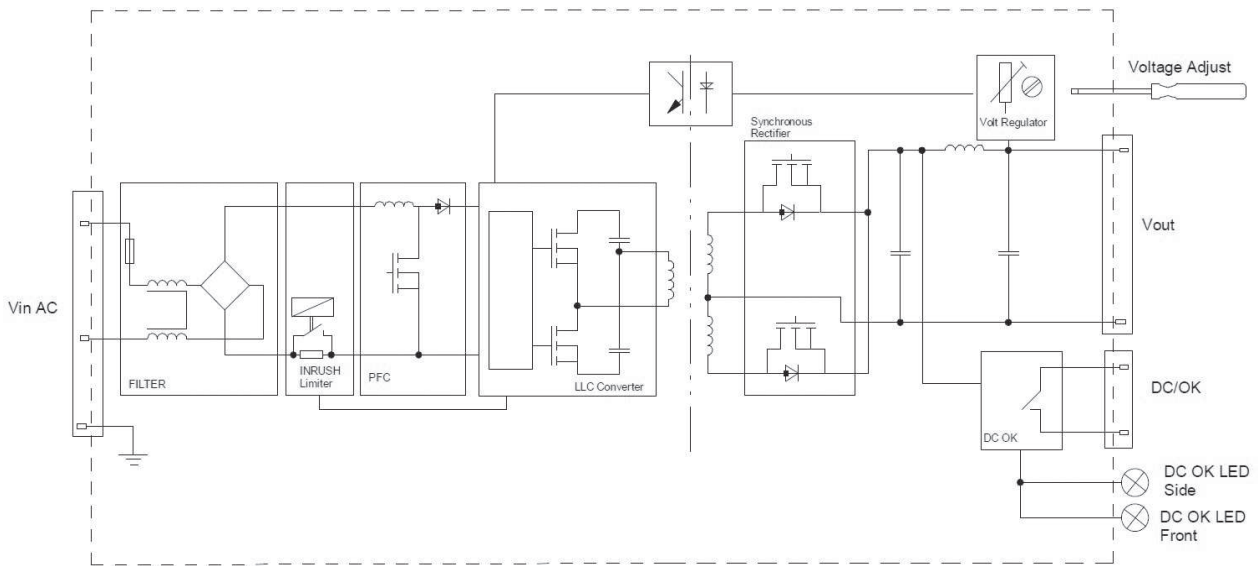
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Supporting Documents

Overview Link (for additional Documents)

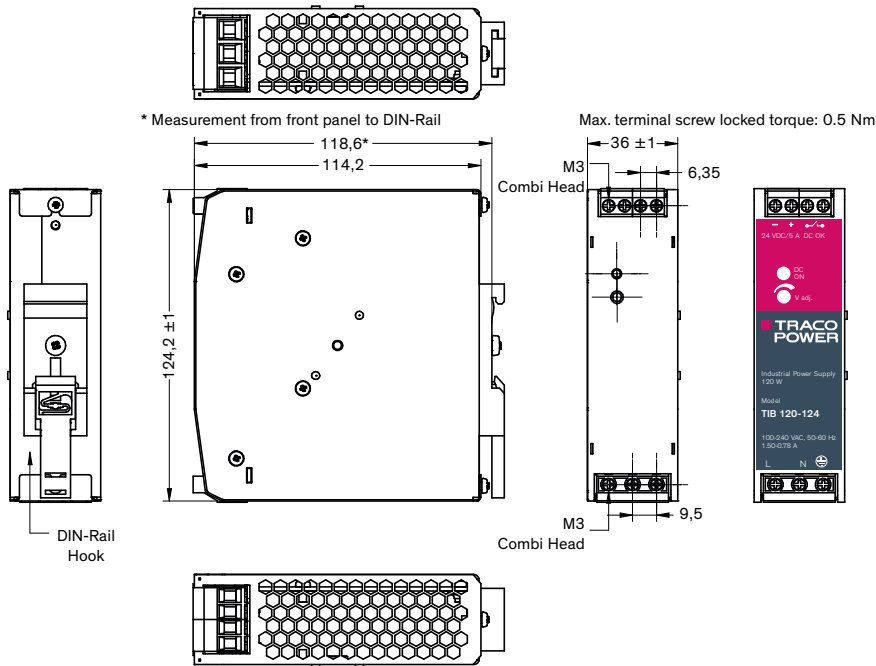
www.tracopower.com/overview/tib120

Blockdiagram



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

Outline Dimensions



Alternative side mounting

