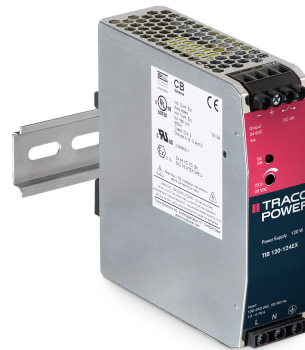


- **UL Hazloc Class I, division 2 approval and ATEX certification**
- **SEMI F47 compliant for voltage sag immunity**
- **Rugged metal case with optional side-mounting**
- **Back power immunity**
- **150% peak current for 4 s**
- **Operating Temp -40°C to +70°C (full load up to 60°C)**
- **Adjustable output voltage**
- **High Reliability: MTBF 1 mill hrs per IEC 61709**
- **Short circuit and overload protection**
- **5 year product warranty**



The TIB 120-EX family of next generation of 120 Watt din rail power supplies feature high efficiency operation of up to 94% enabling a slim design with alternative side-mounting for flat panels (DC OK Indicator on both front and side panel). These products certified to UL Hazloc Class 1 / Div 2, and ATEX (EN 60079-0, EN 60079-7, EN 60079-15) for operation in hazardous locations. These convection cooled power supplies have a -40°C to +60°C full load operating temperature range. 150% peak power for up to 4 seconds which is ideal for stepper motors, solenoids or actuators. The TIB 120-EX series has an important Back Power Immunity feature that helps protect against shut-down or malfunction with loads such as inductors and decelerating motors that can feed voltage back to the power supply. Outputs are radio-interference-suppressed to impede radiation at long output lines which reduces the common mode current to within limits of telecommunication ports. The series operate with a high power factor of up to 99% which also minimizes inrush current. Additional qualifications include IEC/EN/UL 60950-1, UL 508 and CB Report with EMC compliance to IEC/EN 61000-6-2 and IEC/EN 61000-6-3.

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

Input Specifications

| | | |
|----------------------|--------------|--|
| Input Voltage | | 85 - 264 VAC (Full Range) |
| Input Frequency | | 45 - 65 Hz |
| Power Consumption | - at no Load | 2'200 mW typ. |
| 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) |

Output Specifications

| | | |
|--|---------------------------------|---|
| 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 no exceed rated power! |
| Regulation | - Input Variation (Vmin - Vmax) | 0.1% max. |
| | - Load Variation (10 - 90%) | 0.5% max. |
| Output Current peak | | Peak Power: 105 - 150% of Iout max. Peak Operation Time: 4 s max. (switch off) Off Time: 10 s typ. In peak power mode, the unit continuously switches off the output voltage after 4 s and restarts after approx. 10 s. |
| 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. |
| Overload Protection | | CC-Mode |
| Output Current Limitation | | 155% min. of Iout max. |
| Short Circuit Protection | | Switch off after 4 s delay, automatic restart |
| 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 | 2000 µs typ. (10% to 90% Load Step) |

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

Safety Specifications

| | | |
|-----------------------|--------------------------------|--|
| Safety Standards | - IT / Multimedia Equipment | IEC 60950-1 EN 60950-1 UL 60950-1 CSA-C22.2, 60950-1-07 |
| | - Industrial Control Equipment | UL 508 |
| | - ATEX | EN 60079-0 EN 60079-7 EN 60079-15 |
| | - HazLoc | EX II3G Ex nA nC IIC T4 GC UL 121201 |
| | - Certification Documents | Class I; Div 2; Groups A,B,C,D; T4 www.tracopower.com/overview/tib120-ex |
| Protection Class | | Class I Prepared: Connection to PE |
| Pollution Degree | | PD 2: Office or Laboratory Environments |
| Over Voltage Category | | OVC II |

EMC Specifications

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

General Specifications

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

All specifications valid at nominal input voltage, 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) |
| Cooling System | | Natural convection (no internal fan, 20 LFM) |
| Altitude During Operation | | 2000 m max. |
| 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 | 4'250 VDC 1'500 VDC 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. |
| 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 3 axis, sine sweep, 10 - 55 Hz, 2 g, 11 oct/min EN 61373 IEC 60068-2-27 3 axis, 25 g half sine, 11 ms shock |
| Housing Material | | Aluminium (Chassis) Stainless Steel (Cover) |
| Connection Type | | Screw Terminal |
| Mounting | - DIN Rail | For DIN-rails as per EN 50022-35×15/7.5 |
| Weight | | 461 g |
| Thermal Impedance | | 0.8 K/W |
| 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 | 12 VDC model: OK: 10.9 VDC, Off: 10.7 VDC 24 VDC model: OK: 22.5 VDC, Off: 21.5 VDC 48 VDC model: OK: 45 VDC, Off: 43 VDC Relay contact closed Relay contact open 30 VDC / 1 A max. |
| Status Indicator | | Also indicated by green LEDs: front and side |
| Environmental Compliance | - Reach - RoHS | www.tracopower.com/info/reach-declaration.pdf www.tracopower.com/info/rohs-declaration.pdf |

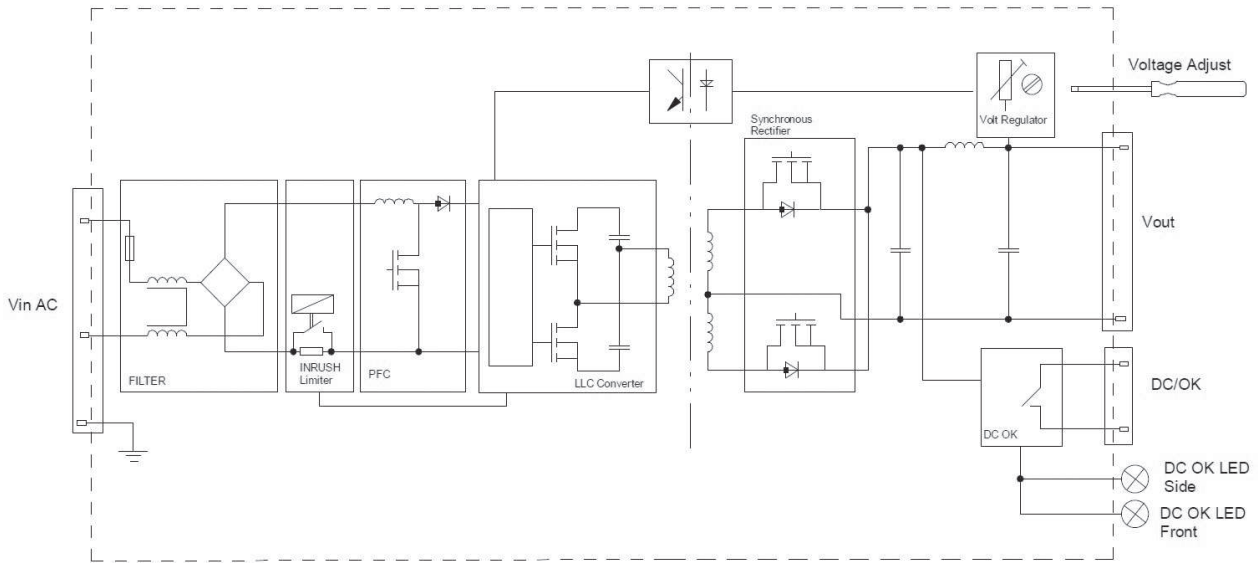
Supporting Documents

Overview Link (for additional Documents)

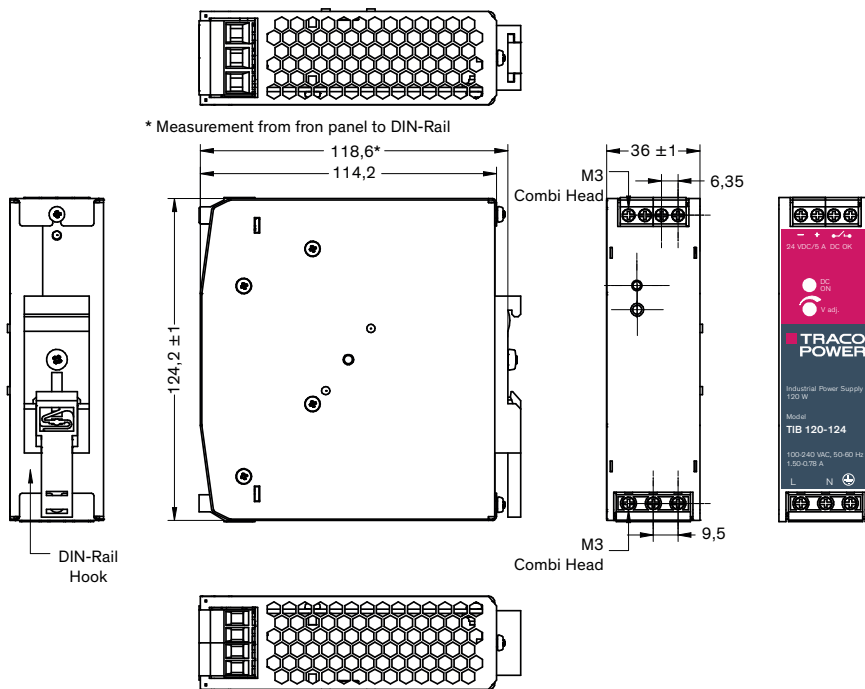
www.tracopower.com/overview/tib120-ex

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

Blockdiagram

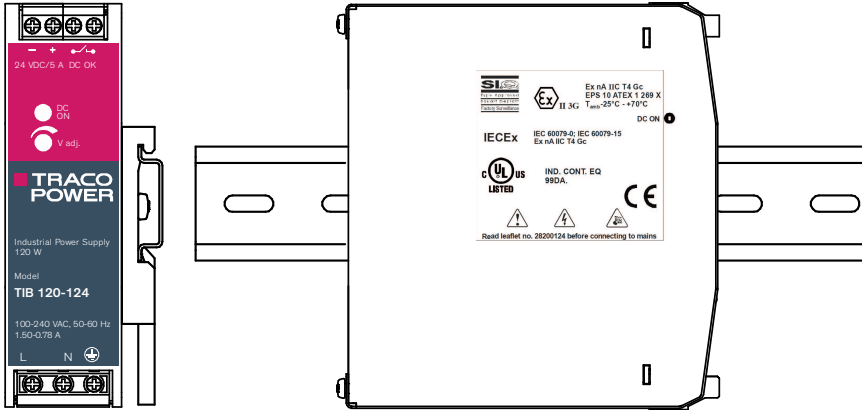


Outline Dimensions



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

Alternative side mounting



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[TRACO Power:](#)

[TIB120-112EX](#) [TIB120-124EX](#) [TIB120-148EX](#)