### **AC/DC Industrial Power Supply**

- 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%
- Back power 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



# 

UL 508 UL 60950-1 IEC 62368-1

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

Input Specificatio	ons		
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)
Recommended Input Fus	se		(The need of an external fuse has to be assessed in the final application.)
Output Specificat	ions		
Output Voltage Adjustme	nt		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.
Output Current peak			Peak Operation Power: 150% max.
			Peak Operation Time: 4 s max. (auto switch off)
			Off Time: 10 s typ.
			During peak operation, the unit continuously
			switches off the output voltage after 4 s and
<b>D</b> ' 1 1 1 1 1			restarts after approx. 10 s.
Ripple and Noise			100 mVp-p max.
(20 MHz Bandwidth)			100 mVp-p max.
<u> </u>		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	1		155% min. of lout max.
Overvoltage Protection			117 - 158% of Vout nom.
			(depending on model)
			16 - 19 VDC (12 VDC model)
			<b>32 - 35 VDC</b> (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 turnes off and tries to
			restart after 10 s.)
Transiant Desperse	Deals Variation		
Transient Response	- Peak Variation		800 mV max. (10% to 90% Load Step)
	- Response Time		<b>2'000 μs typ.</b> (10% to 90% Load Step)

Safety Specifica	ations	
Safety 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

MI 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 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, $\pm 8$ 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, $\pm 2$ kV, perf. criteria B
		L to L: EN 61000-4-5, $\pm$ 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			
Relative Humidity		95% max. (non condensing)	
Temperature Ranges	- Operating Temperature	-40°C to +70°C	

- Low Input Voltage     - Not Voltage     - Protection Mode     - Protection Mode     - Protection Mode     - Protection Mode     - Voltage     - Voltage     - Protection Mode     - Voltage     - Voltage     - Protection Mode     - Protection PE     - Protection Mode     - Protection PE     - Protection Mode     - Protection PE     - Protection PE     - Protection PE     - Protection PE     - Protection Mode     - Protection Mode     - Protection Mode     - Protection PE     - Protection Mode     - Protection PE     - Protection Mode     - Protection PE     - Mechanical Shock     - Mecha	Power Derating	- High Temperature		2 %/K above 60°C (at standard operation)
1.5 %/V below 100 VAC (st peak point)       Over Temperature Protection Switch Off     - Protection Mode       Caoling System     Natural convection (20 LFM)       Altitude During Operation     2'000 m max.       Switching Frequency     70 - 100 kHz (PMM)       Insulation System     Reinforced Insulation       Isolation Test Voltage     - Input to Output 60 s     3'000 VAC       - Input to Case or PE, 60 s     1'500 VDC       - Output to Case or PE, 60 s     750 VDC       Creepage     - Input to Case or PE     4 mm min.       - Input to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Output to Case or PE     4 mm min.       - Input to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Dutput to Case or PE     1.5 mm min.       - Dutput to Case or PE     1.5 mm min.       - Dutput to Case or PE     1.5 mm min.       - Dutput to Case or PE     1.5 mm min.       - Dutput to Case or PE     1.5 mm min.       - Dutput to Case or PE     1.5 mm min.       - Input to Case or PE     1.5 mm min.       - Barth Leakage Curent     3500 µA max.       - Mechanical Shock     EN 61373 </th <th></th> <th></th> <th></th> <th>3 %/K above 60°C (at peak power mode)</th>				3 %/K above 60°C (at peak power mode)
Over Temperature     - Protection Mode     Latch off       Protection Switch Off     Natural convection (20 LFM)       Attitude During Operation     2'000 m max.       Switching Frequency     70 - 100 kHz (PMW)       Insulation System     Reinforced Insulation       Isolation Test Voltage     - Input to Output, 60 s     3'000 VAC       - Input to Case or PE, 60 s     1'500 VDC       - Output to Case or PE     4 mm min.       - Input to Case or PE     4 mm min.       - Output to Case or PE     4 mm min.       - Input to Case or PE     1.5 mm min.       - Output to Case or PE     4 mm min.       - Input to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Input to Case or PE     1.5 mm min.       - Input to Case or PE     1.5 mm min.       - Input to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Input to Case or PE     1.5 mm min.       - Input to Case or PE     1.5 mm min.       - Input to Case or PE     2.5 mm min.       - Culput to Case or PE     1.5 mm min.       - Input to Case or PE     1.5 mm min.       - Culput to Case or PE     1.5 mm min.       - Earth Leakage Current     310 µA max.       Reliability     - Calculated MTEF		- Low Input Voltage		
Protection Switch Off Cooling System Cooling System Cooling Operation Switching Frequency Insulation System Switching Frequency Insulation System Isolation Test Voltage Input to Output, 60 s Output to Case or PE, 60 s Output to Case or P				1.5 %/V below 100 VAC (at peak power mode)
Cooling System       Natural convection (20 LFM)         Atitude During Operation       2'000 m max.         Switching Frequency       70 - 100 kHz (PMM)         Insulation System       Reinforced Insulation         Isolation Test Voltage       - Input to Output, 60 s       3'000 VAC         - Input to Case or PE, 60 s       1'500 VDC         Creepage       - Input to Case or PE, 60 s       750 VDC         Creepage       - Input to Case or PE       8 mm min.         - Output to Case or PE       1.5 mm min.         Clearance       - Input to Case or PE       1.5 mm min.         - Output to Case or PE       1.5 mm min.         - Output to Case or PE       1.5 mm min.         - Output to Case or PE       1.5 mm min.         - Output to Case or PE       1.5 mm min.         - Output to Case or PE       1.5 mm min.         - Output to Case or PE       1.5 mm min.         Leakage Current       - Earth Leakage Current       3500 µA max.         - Touch Current       310 µA max.       2 g, 3 axis, sine sweep, 10-55 Hz, 1 '         Environment       - Vibration       EN 61373 IEC 60086-2e7       2 g, 3 axis, sine sweep, 10-55 Hz, 1 '         Housing Material       - Mechanical Shock       EN 61373 IEC 60086-2e7       2 g, 3 axis, sine sweep,		- Protection Mode		Latch off
Attitude During Operation       2'000 m max.         Switching Frequency       70 - 100 kHz (PWM)         Isolation Test Voltage       - Input to Output 60 s         - Input to Case or PE, 60 s       3'000 VAC         - Input to Case or PE, 60 s       750 VDC         Creepage       - Input to Output       8 mm min.         - Input to Case or PE, 60 s       750 VDC         Creepage       - Input to Output       8 mm min.         - Output to Case or PE       1.5 mm min.         Clearance       - Input to Output       8 mm min.         - Input to Case or PE       1.5 mm min.         Clearance       - Input to Case or PE       1.5 mm min.         - Output to Case or PE       1.5 mm min.         Leakage Current       - Earth Leakage Current       3500 µA max.         - Touch Current       310 µA max.         Reliability       - Calculated MTE/F       1'450'0000 h ((EC 61709)         Environment       - Vibration       EN 61373 IEC 60088-2-87         - Mechanical Shock       EN 61373 IEC 60088-2-87         - Mechanical Shock       EN 61373 IEC 60088-2-87         - Teriger Threshold       12 VDC model         9 were Back Immunity       12 VDC model       19 V max.         24 VDC model				
Switching Frequency         70 - 100 kHz (PWM)           Insulation System         Reinforced Insulation           Isolation Test Voltage         - Input to Output, 60 s         3'000 VAC           - Input to Case or PE, 60 s         1'500 VDC           Creepage         - Input to Case or PE         8 mm min.           - Input to Case or PE         4 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         4 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Calculated MTIBF         1450'000 h (IEC 61'709)           Environment         - Vibration         EN 61373           - Mechanical Shock         EN 60068-2-6         2 g. 3 axis, sine sweep, 10-55 Hz, 1'           Mounting         - Olin Rail         For Dintraits as per EN 50022-35 x'           Weight         461 g         11 ND raits as per EN 50022-35 x'           Weight         461 g         0.8				
Insulation System         Reinforced Insulation           Isolation Test Voltage         - Input to Output, 60 s         3'000 VAC           - Input to Case or PE, 60 s         1'500 VDC           Creepage         - Input to Case or PE         8 mm min.           - Output to Case or PE         4 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Output to Case or PE         1.5 mm min.           - Touch Current         310 µA max.           - Touch Current         310 µA max.           - Touch Current         310 µA max.           - Mechanical Shock         EN 61373           IEC 60068-2-61         2 g, 3 axis, sine sweep, 10-55 Hz, 1'           - Mechanical Shock         EN 61373           IBC 60068-2-27         25 g, 3 axis, sine sweep, 10-55 Hz, 1'           - Mechanical Shock         EN 61373           IBC 60068-2-27         25 g, 3 axis, sine sweep, 10-55 Hz, 1'           Housing Material         Aluminum (Chassis)           Stai				
Isolation Test Voltage - Input to Output, 60 s - Input to Case or PE, 60 s - Output to Case or PE, 60 s - Output to Case or PE - Trigger Threshold - Trigger Threshold				· · · · · ·
<ul> <li>Input to Case or PE, 60 s</li> <li>Output to Case or PE, 60 s</li> <li>Output to Case or PE</li> <li>Input to Case or PE</li> <li>Input to Case or PE</li> <li>Output to Case or PE</li> <li>Output to Case or PE</li> <li>Input to Output</li> <li>Bmm min.</li> <li>Clearance</li> <li>Input to Case or PE</li> <li>Input to Case or PE</li> <li>Output to Case or PE</li> <li>Stamm min.</li> <li>Clearance</li> <li>Input to Case or PE</li> <li>Stamm min.</li> <li>Clearance</li> <li>Input to Case or PE</li> <li>Output to Case or PE</li> <li>Stamm min.</li> <li>Clearance</li> <li>Input to Case or PE</li> <li>Stamm min.</li> <li>Clearance</li> <li>Input to Case or PE</li> <li>Stainless Steel (Cover)</li> <li>Environment</li> <li>Olin Rail</li> <li>Mounting</li> <li>DIN Rail</li> <li>For DIN-rails as per EN 50022-35×</li> <li>Weight</li> <li>Mounting</li> <li>DIN Rail</li> <li>For DIN-rails as per EN 50022-35×</li> <li>Weight</li> <li>Vibrand</li> <li>Vibrand</li> <li>Stainless Steel (Cover)</li> <li>Stave and voltage is supplied abo output sage and below OVP threshol</li> <li>Stave and voltage is supplied abo output voltage and below OVP threshol</li> <li>Stave and voltage is supplied abo output voltage and below OVP threshol</li> <li>Stave and voltage is supplied abo output voltage and below OVP threshol</li> <li>Stave and voltage is supplied abo output voltage and below OVP threshol</li> <li>Power OK Signal</li> <li>- Trigger Threshold</li> <li>12 VDC model:</li> <li>14 VDC</li> <li>14 VDC</li>     &lt;</ul>				
- Output to Case or PE, 60 s     750 VDC       Creepage     - Input to Output     8 mm min.       - Input to Case or PE     4 mm min.       - Output to Case or PE     1.5 mm min.       Clearance     - Input to Output     8 mm min.       - Input to Case or PE     4 mm min.       - Output to Case or PE     500 µA max.       - Output to Case or PE     15 mm min.       Leakage Current     3500 µA max.       - Touch Current     310 µA max.       Reliability     - Calculated MTBF     1450'000 h (IEC 61'709)       Environment     - Vibration     EN 61373       File C 60068-2-67     2 g, 3 axis, sine sweep, 10-55 Hz, 1'       Housing Material     - Mechanical Shock     EN 61373       Mounting     - DIN Rail     For DIN-rails as per EN 50022-35 x*       Weight     - 0.8 K/W     Power Back Immunity     12 VDC model:       Power OK Signal     - Trigger Threshold     12 VDC model:     21 - 23 VDC       - Trigger Threshold     12 VDC model:     21 - 23 VDC       - Trigger Threshold     12 VDC model:     21 - 24 VDC	Isolation Test Voltage			
Creepage     - Input to Output     8 mm min.       - Input to Case or PE     4 mm min.       - Output to Case or PE     1.5 mm min.       Clearance     - Input to Case or PE     4 mm min.       - Input to Case or PE     4 mm min.       - Output to Case or PE     4 mm min.       - Output to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       - Calculated MTBF     1450'000 h (IEC 61709)       Environment     - Vibration       - Mechanical Shock     EN 61373 IEC 60068-2-6       2 g, 3 axis, sine sweep, 10-55 Hz, 1'     - Mechanical Shock       Housing Material     Aluminum (Chassis)       Housing Material     Aluminum (Chassis)       Mounting     - DIN Rail       Mounting     - DIN Rail       For DIN-rails as per EN 50022-35 x*       Weight     461 g       Thermal Impedance     0.8 K/W       Power Back Immunity     12 VDC model:       Power OK Signal     - Trigger Threshold       - Trigger Threshold     12 VDC model:       12 VDC model:     21 - 23 VDC       48 VDC model:     21 - 23 VDC       48 VDC model:     21 - 23 VDC				
<ul> <li>Input to Case or PE</li> <li>Output to Case or PE</li> <li>Output to Case or PE</li> <li>Input to Case or PE</li> <li>Input to Case or PE</li> <li>Input to Case or PE</li> <li>Output to Case or PE</li> <li>Staines Steel (Cover)</li> <li>Advantage Steel (Cover)</li> <li>Advantage Steel (Cover)</li> <li>Advantage Steel (Cover)</li> <li>Stainess Steel (Cover)</li> <li>Connection Type</li> <li>Screw Terminal</li> <li>Oli Rail</li> <li>For DIN-rails as per EN 50022-35 xt</li> <li>Weight</li> <li>Oli Rail</li> <li>For DIN-rails as per EN 50022-35 xt</li> <li>Weight</li> <li>Oli Rail</li> <li>For DIN-rails as per EN 50022-35 xt</li> <li>Weight</li> <li>One Strema and Strema voltage is supplied aboo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage is supplied aboo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage is supplied aboo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage is supplied aboo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage applied continuously)</li> <li>Power OK Signal</li> <li>Frigger Threshold</li> <li>12 VDC model:</li> <li>24 VDC m</li></ul>		- Output to Case or PE, 60 s		750 VDC
- Output to Case or PE     1.5 mm min.       Clearance     - Input to Output     8 mm min.       - Input to Case or PE     4 mm min.       - Output to Case or PE     1.5 mm min.       - Output to Case or PE     1.5 mm min.       Leakage Current     - Earth Leakage Current     3500 µA max.       - Touch Current     310 µA max.       Reliability     - Calculated MTBF     1450'0000 h (IEC 61709)       Environment     - Vibration     EN 61373 IEC 60068-2-6       2 g, 3 axis, sine sweep, 10-55 Hz, 1' EN 61373 IEC 60068-2-27 25 g, 3 axis, shaff sine, 11 ms       Housing Material     - Mechanical Shock     2 g, 3 axis, half sine, 11 ms       Housing Material     - Screw Terminal     Stainless Steel (Cover)       Connection Type     Screw Terminal     Screw Terminal       Mounting     - DIN Rail     For DIN-rails as per EN 50022-35x*       Weight     - 0.8 K/W       Power Back Immunity     12 VDC model:     19 V max.       24 VDC model:     35 V max.     48 VDC model:     35 V max.       48 VDC model:     10 votto normally with or of or destruction, even if external voltage is supplied abor output voltage and below OVP thresho power supply will function normally with of of or destruction, even if external voltage is applied continuously)       Power OK Signal     Relay Output     12 VDC model:     11.1 VDC       24 VDC	Creepage	- Input to Output		8 mm min.
Clearance       - Input to Output       8 mm min.         - Input to Case or PE       4 mm min.         - Output to Case or PE       1.5 mm min.         Leakage Current       - Earth Leakage Current       3500 µA max.         - Touch Current       310 µA max.         Reliability       - Calculated MTBF       1'450'000 h (IEC 61709)         Environment       - Vibration       EN 61373         IEC 60068-2-6       2 g, 3 axis, sine sweep, 10-55 Hz, 1'         - Mechanical Shock       EN 61373         IEC 60068-2-27       25 g, 3 axis, half sine, 11 ms         Housing Material       Aluminum (Chassis)         Stainless Steel (Cover)       Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35×T         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.         48 VDC model: 40 V max.       404 upplied continuously.)         Power OK Signal       - Trigger Threshold       12 VDC model: 10.5 - 11.1 VDC         24 VDC model: 42 - 46 VDC       40 VDC       42 - 46 VDC		- Input to Case or PE		4 mm min.
- Input to Case or PE       4 mm min.         - Output to Case or PE       1.5 mm min.         Leakage Current       3500 μA max.         - Touch Current       3100 μA max.         Reliability       - Calculated MTBF       1'450'000 h (IEC 61709)         Environment       - Vibration       IEC 60068-2-6         2 g, 3 axis, sine sweep, 10-55 Hz, 1'       - Mechanical Shock       EN 61373         Housing Material       - Mechanical Shock       EIC 60068-2-27         25 g, 3 axis, half sine, 11 ms       Aluminum (Chassel)         Housing Material       Aluminum (Chassel)         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35 x*         Weight       461 g         Power Back Immunity       12 VDC model:       19 V max.         48 VDC model:       35 V max.         48 VDC model:       35 V max.         48 VDC model:       40 V max.         When external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with of or destruction, even if external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with of or destruction, even if external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with of or destruction, even if external voltage is supplied abo output voltage and below OVP thresho apoled continuously.		- Output to Case or PE		1.5 mm min.
- Input to Case or PE       4 mm min.         - Output to Case or PE       1.5 mm min.         Leakage Current       3500 μA max.         - Touch Current       3100 μA max.         Reliability       - Calculated MTBF       1'450'000 h (IEC 61709)         Environment       - Vibration       IEC 60068-2-6         2 g, 3 axis, sine sweep, 10-55 Hz, 1'       - Mechanical Shock       EN 61373         Housing Material       - Mechanical Shock       EIC 60068-2-27         25 g, 3 axis, half sine, 11 ms       Aluminum (Chassel)         Housing Material       Aluminum (Chassel)         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35 x*         Weight       461 g         Power Back Immunity       12 VDC model:       19 V max.         48 VDC model:       35 V max.         48 VDC model:       35 V max.         48 VDC model:       40 V max.         When external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with of or destruction, even if external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with of or destruction, even if external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with of or destruction, even if external voltage is supplied abo output voltage and below OVP thresho apoled continuously.	Clearance	- Input to Output		8 mm min.
- Output to Case or PE       1.5 mm min.         Leakage Current       - Earth Leakage Current       3500 µA max.         - Touch Current       310 µA max.         Reliability       - Calculated MTBF       1'450'000 h (IEC 61709)         Environment       - Vibration       IEC 60068-2-6         2 g, 3 axis, sine sweep, 10-55 Hz, 1'       EN 61373         IEC 60068-2-6       2 g, 3 axis, sine sweep, 10-55 Hz, 1'         Environment       - Mechanical Shock       IEC 60068-2-27         25 g, 3 axis, half sine, 11 ms       Housing Material       Aluminum (Chassis)         Housing Material       Aluminum (Chassis)       Stainless Steel (Cover)         Connection Type       Screw Terminal       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35 x*         Weight       461 g          Thermal Impedance       0.8 K/W         Power Back Immunity       12 VDC modet:       19 V max.         48 VDC modet:       60 V max.         (When external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage is supplied abo output voltage and below OVP thresho power supply will function normalig				4 mm min.
Leakage Current       - Earth Leakage Current       3500 μA max.         - Touch Current       310 μA max.         Reliability       - Calculated MTBF       1'450'000 h (IEC 61709)         Environment       - Vibration       EN 61373 IEC 60068-2-6         2 g, 3 axis, sine sweep, 10-55 Hz, 1'         - Mechanical Shock       EN 61373 IEC 60068-2-27         25 g, 3 axis, half sine, 11 ms         Housing Material       Aluminum (Chassis) Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35 x*         Weight       461 g         Thermal Impedance       0.8 K/W         Power Back Immunity       12 VDC model:       35 V max.         48 VDC model:       35 V max.         48 VDC model:       60 V max.         Weight       - Trigger Threshold       12 VDC model:         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC       48 VDC model:       21 - 23 VDC         48 VDC model:       21 - 23 VDC       48 VDC model:       21 - 23 VDC				1.5 mm min.
- Touch Current       310 μA max.         Reliability       - Calculated MTBF       1'450'000 h (IEC 61709)         Environment       - Vibration       EN 61373 IEC 60068-2-6         2 g, 3 axis, sine sweep, 10-55 Hz, 1' EN 61373       EN 60068-2-7         - Mechanical Shock       2 g, 3 axis, sine sweep, 10-55 Hz, 1' EN 60068-2-27         - Mechanical Shock       EN 61373         Housing Material       Aluminum (Chassis)         Stainless Steel (Cover)       Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35 x*         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.         Windt on for adstruction, even if external voltage is supplied abo output voltage and below OVP thresho opower supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       Relay Output       12 VDC model:       21 - 23 VDC 48 VDC model:       21 - 23 VDC	Leakage Current			
Reliability       - Calculated MTBF       1'450'000 h (IEC 61709)         Environment       - Vibration       EN 61373 IEC 60068-2-6       2 g, 3 axis, sine sweep, 10-55 Hz, 1' EN 61373 IEC 60068-2-27 25 g, 3 axis, half sine, 11 ms         Housing Material       Aluminum (Chassis) Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35x*         Weight       461 g         Thermal Impedance       0.8 K/W         Power Back Immunity       12 VDC model:       19 V max. 24 VDC model:         80 V max.       48 VDC model:       35 V max. 48 VDC model:         Power OK Signal       - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC 24 VDC model:         Power W Signal       - Trigger Threshold       12 VDC model:       21 - 23 VDC 48 VDC model:       21 - 23 VDC	Leanage ourient			•
Environment       - Vibration       EN 61373 IEC 60068-2-6 2 g, 3 axis, sine sweep, 10-55 Hz, 1 EN 61373 IEC 60068-2-27 25 g, 3 axis, half sine, 11 ms         Housing Material       Aluminum (Chassis) Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail         Power Back Immunity       12 VDC model:         19 V max.         24 VDC model:       60 V max.         48 VDC model:       60 V max.         Weight       - Trigger Threshold         12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC         48 VDC model:       12.2 VDC model:         24 VDC model:       12.2 VDC model:         48 VDC model:       12.2 VDC         48 VDC model:       12.2 VDC         48 VDC model:       12.5 - 11.1 VDC         24 VDC model:       12.2 VDC         48 VDC model:       12.2 VDC	Deliability			•
- Mechanical Shock       IEC 60068-2-6         2 g, 3 axis, sine sweep, 10-55 Hz, 11         EN 61373         IEC 60068-2-27         25 g, 3 axis, half sine, 11 ms         Housing Material         Housing Material         Mounting         - DIN Rail         Mounting         - DIN Rail         For DIN-rails as per EN 50022-35x*         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:         of 0 V max.         When external voltage is supplied aboroutput voltage and below OVP threshor power supply will function normally with off or destruction, even if external voltage is applied continuously.)         Power OK Signal         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       10.5 - 11.1 VDC       24 VDC model:       21 - 23 VDC         48 VDC model:       21 - 23 VDC       48 VDC model:       21 - 24 VDC				
- Mechanical Shock 2 g, 3 axis, sine sweep, 10-55 Hz, 1 EN 61373 IEC 60068-2-27 25 g, 3 axis, half sine, 11 ms Housing Material Aluminum (Chassis) Stainless Steel (Cover) Connection Type Screw Terminal Mounting - DIN Rail For DIN-rails as per EN 50022-35×** 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: 35 V max. 48 VDC model: 60 V max. (When external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external volta applied continuously.) Power OK Signal - Trigger Threshold 12 VDC model: 10.5 - 11.1 VDC 24 VDC model: 21 - 23 VDC 48 VDC model: 42 - 46 VDC	Environment	- vibration		
- Mechanical Shock       EN 61373 IEC 60068-2-27 25 g, 3 axis, half sine, 11 ms         Housing Material       Aluminum (Chassis) Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35×1         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 abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage applied continuously.)         Power OK Signal       - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC 24 VDC model:         - Trigger Threshold       12 VDC model:       21 - 23 VDC 48 VDC model:       21 - 23 VDC				
Housing Material       Aluminum (Chassis) Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35 x*1         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.         Wight       KWhen external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage         Power OK Signal       Trigger Threshold       12 VDC model:         12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC         48 VDC model:       42 - 46 VDC		Machanical Shack		-
Housing Material       Aluminum (Chassis)         Housing Material       Aluminum (Chassis)         Stainless Steel (Cover)       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35 × 1         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 abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltag applied continuously.)         Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC 24 VDC model:         21 - 23 VDC 48 VDC model:       42 - 46 VDC		- Mechanical Shock		
Housing Material       Aluminum (Chassis) Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35×1         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 aboo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external voltage applied continuously.)         Power OK Signal       - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC       48 VDC model:       21 - 23 VDC				
Stainless Steel (Cover)         Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35×1         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 abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC 24 VDC model:         21 VDC model:       21 - 23 VDC 48 VDC model:       21 - 23 VDC 48 VDC model:	Housing Material			
Connection Type       Screw Terminal         Mounting       - DIN Rail       For DIN-rails as per EN 50022-35×1         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 abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC       48 VDC model:       21 - 23 VDC         48 VDC model:       42 - 46 VDC       42 - 46 VDC       42 - 46 VDC	riousing material			
Mounting       - DIN Rail       For DIN-rails as per EN 50022-35 × 1         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 abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       12 VDC model:       21 - 23 VDC         48 VDC model:       21 - 23 VDC       48 VDC model:       21 - 23 VDC	Connection Type			
Weight       461 g         Thermal Impedance       0.8 K/W         Power Back Immunity       12 VDC model:       19 V max.         24 VDC model:       35 V max.         24 VDC model:       60 V max.         (When external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC 24 VDC model:         12 VDC model:       21 - 23 VDC 48 VDC model:       42 - 46 VDC		- DIN Rail		
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 abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC         48 VDC model:       42 - 46 VDC	_			
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 abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC         48 VDC model:       42 - 46 VDC	-			
24 VDC model:       35 V max.         48 VDC model:       60 V max.         (When external voltage is supplied aboroutput voltage and below OVP threshopower supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC         48 VDC model:       42 - 46 VDC	•		101/00	
48 VDC model: 60 V max. (When external voltage is supplied abo output voltage and below OVP thresho power supply will function normally with off or destruction, even if external volta applied continuously.) Power OK Signal - Trigger Threshold 12 VDC model: 10.5 - 11.1 VDC 24 VDC model: 21 - 23 VDC 48 VDC model: 42 - 46 VDC	Power Back Immunity			
When external voltage is supplied abooutput voltage and below OVP threshopower supply will function normally with off or destruction, even if external volta applied continuously.)         Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC         48 VDC model:       42 - 46 VDC				
Power OK Signal       output voltage and below OVP thresho         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC         48 VDC model:       42 - 46 VDC				
Power OK Signal       Relay Output         - Trigger Threshold       12 VDC model:       10.5 - 11.1 VDC         24 VDC model:       21 - 23 VDC         48 VDC model:       42 - 46 VDC				
Power OK Signal - Trigger Threshold - Trigger Threshold 24 VDC model: 48 VDC model: 42 - 46 VDC				
Power OK Signal - Trigger Threshold 12 VDC model: 24 VDC model: 21 - 23 VDC 48 VDC model: 42 - 46 VDC				
Power OK Signal         Relay Output           - Trigger Threshold         12 VDC model:         10.5 - 11.1 VDC           24 VDC model:         21 - 23 VDC           48 VDC model:         42 - 46 VDC				
- Trigger Threshold 12 VDC model: 10.5 - 11.1 VDC 24 VDC model: 21 - 23 VDC 48 VDC model: 42 - 46 VDC				
24 VDC model: <b>21 - 23 VDC</b> 48 VDC model: <b>42 - 46 VDC</b>	Power OK Signal		10100	
48 VDC model: 42 - 46 VDC		- Trigger Threshold		
- Power OK Relay contact closed			48 VDC model:	
		- Power OK		Relay contact closed
- Power Off Relay contact open				
- Pin Specifications <b>30 VDC / 1 A max.</b>		- Pin Specifications		
Status Indicator Also indicated by green LEDs: front a	Status Indicator			Also indicated by green LEDs: front and side

Environmental Compliance - REACH Declaration

- RoHS Declaration

www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant www.tracopower.com/info/rohs-declaration.pdf

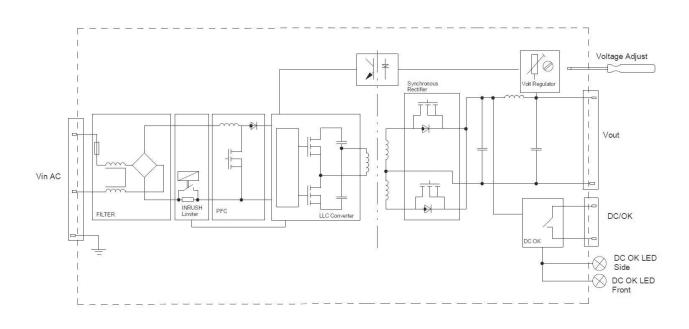
**Exemptions: 6a, 6c, 7a, 7c-I, 7c-II** (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule). The SCIP number is provided on request.)

www.tracopower.com/overview/tib120

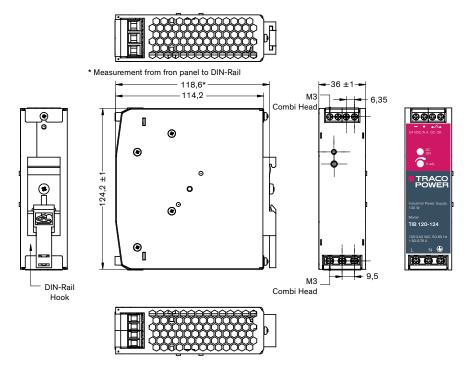
### **Supporting Documents**

**Overview Link** (for additional Documents)

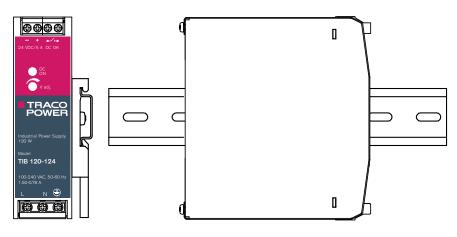
#### Blockdiagram



### **Outline Dimensions**



#### Alternative side mounting



© Copyright 2021 Traco Electronic AG

**TRACO POWER** 

Specifications can be changed without notice. Rev. September 29, 2021 Page 6 / 6