

### Safety Specifications

Safety Standards	- IT / Multimedia Equipment	IEC 60950-1 EN 60950-1 UL 60950-1 CSA-C22.2, No 60950-1
	- 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 <a href="http://www.tracopower.com/overview/tib080-ex">www.tracopower.com/overview/tib080-ex</a>
Protection Class		Class I Prepared: Connection to PE
Pollution Degree		PD 2
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, $\pm 8$ kV, perf. criteria A Contact: EN 61000-4-2, $\pm 4$ kV, perf. criteria A EN 61000-4-3, 10 V/m, perf. criteria A EN 61000-4-4, $\pm 2$ kV, perf. criteria B
	- RF Electromagnetic Field	L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria B
	- EFT (Burst)	L to PE: EN 61000-4-5, $\pm 2$ kV, perf. criteria B
	- Surge	EN 61000-4-6, 10 Vrms, perf. criteria A EN 61000-4-8, 30 A/m, perf. criteria A
	- Conducted RF Disturbances	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
	- PF Magnetic Field	20%, 250 periods, perf. criteria C
	- Voltage Dips & Interruptions	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
	- Voltage Sag Immunity	20%, 250 periods, perf. criteria C 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)
Over Temperature Protection Switch off		(Automatical switch off at over temperature)
Cooling System		Natural convection (20 LFM)
Altitude During Operation		2'000 m max.
Switching Frequency		60 - 75 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	1'950'000 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 50022-35x15/7.5
Weight		367 g
Thermal Impedance		1.81 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	<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a> <a href="http://www.tracopower.com/info/rohs-declaration.pdf">www.tracopower.com/info/rohs-declaration.pdf</a>

## Supporting Documents

Overview Link (for additional Documents)

[www.tracopower.com/overview/tib080-ex](http://www.tracopower.com/overview/tib080-ex)

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