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 EX II3G Ex nA nC IIC T4 GC
	- HazLoc	UL 121201 Class I; Div 2; Groups A,B,C,D; T4
	- Certification Documents	www.tracopower.com/overview/tib120-ex
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, ±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		2 %/K above 60°C (at standard operation) 3 %/K above 60°C (at peak power mode)
	- Low Input Voltage		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			70 - 100 kHz (PWM)
Insulation System			Reinforced Insulation
Isolation Test Voltage	- Input to Output, 60 s		4'250 VDC
	- Input to Case or PE, 60 s		1'500 VDC
	- 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		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 3 axis, sine sweep, 10 - 55 Hz, 2 g, 11 oct/min
	- Mechanical Shock		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			Relay Output
	- Trigger Threshold	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
	- Power OK		Relay contact closed
	- Power Off		Relay contact open
	- Pin Specifications		30 VDC / 1 A max.
Status Indicator			Also indicated by green LEDs: front and side
Environmental Compliance	- Reach		www.tracopower.com/info/reach-declaration.pdf
	- RoHS		www.tracopower.com/info/rohs-declaration.pdf

Supporting Documents

Overview Link (for additional Documents)	www.tracopower.com/overview/tib120-ex

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