

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) EN 55011 class B (internal filter) EN 55032 class B (internal filter) EN 55011 class B (internal filter) EN 55032 class B (internal filter) EN 61000-3-2, class A
- Conducted Emissions		
- Radiated Emissions		
- Harmonic Current Emissions		
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 61000-4-3, $\pm 4$ kV, perf. criteria A
- RF Electromagnetic Field		EN 61000-4-3, 10 V/m, perf. criteria A
- EFT (Burst)		EN 61000-4-4, $\pm 2$ kV, perf. criteria B
- Surge		L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria B L to PE: EN 61000-4-5, $\pm 2$ 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
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		60 - 75 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

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

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 $\mu$ A max.
	- Touch Current	310 $\mu$ A max.
Reliability	- Calculated MTBF	1'950'000 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 50022-35x15/7.5
Weight		367 g
Thermal Impedance		1.81 K/W
Power Back Immunity		12 VDC model: <b>19 V max.</b>
		24 VDC model: <b>35 V max.</b>
		48 VDC model: <b>60 V max.</b>
		(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	12 VDC model: <b>OK: 10.9 VDC, Off: 10.7 VDC</b>
		24 VDC model: <b>OK: 22.5 VDC, Off: 21.5 VDC</b>
		48 VDC model: <b>OK: 45 VDC, Off: 43 VDC</b>
	- 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	<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a>
	- RoHS	<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](http://www.tracopower.com/overview/tib080)

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