

- 125 Watt open frame power supplies in a 3" x 2" package
- Compact and cost efficient design
- Peak power function up to 120%
- I/O reinforced isolation 3000 VAC
- Operating temperature range -40°C to +85°C
- No load input power <0.3W (acc. ErP directive)
- High efficiency up to 92%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 year product warranty



UL 62368-1 IEC 62368-1

The TPI 125A-J is a 125 Watt AC/DC open frame power supplies series with a 3000 VAC reinforced isolation system. Our TPI line specifically focuses on providing cost efficient industrial power supplies in compact designs. This series offers a peak power function which enables the unit to deliver up to 120% of the rated power for up to 10 seconds. Excellent efficiency of up to 92% allows a compact design and an operating temperature range (natural convection) of -40°C to +50°C without derating, while going up to +85°C with either load derating or forced cooling. They are designed to meet the ErP directive (< 0.3 W no load power consumption) and come with an EMC characteristics dedicated for applications in industrial/automation and test & measurement fields. High reliability is provided by use of industrial high-quality grade components and an excellent thermal management. It makes the TPI 125A-J an ideal solution for any demanding industrial devices or space critical applications.

Models						
Order Code	Output Power max.	Output Voltage nom. (adjustable)	Output Current max. (Forced air cooling)	Output Current max. (Natural convection)	Output Current peak	Efficiency typ.
TPI 125-112A-J	125 W	12 VDC (9.6 - 13.2 VDC)	10'420 mA	8'340 mA	12'500 mA	91 %
TPI 125-115A-J		15 VDC (12.0 - 16.5 VDC)	8'340 mA	6'670 mA	10'000 mA	92 %
TPI 125-124A-J		24 VDC (19.2 - 26.4 VDC)	5'210 mA	4'170 mA	6'250 mA	92 %
TPI 125-136A-J		36 VDC (28.8 - 39.6 VDC)	3'480 mA	2'780 mA	4'167 mA	91 %
TPI 125-148A-J		48 VDC (38.4 - 52.8 VDC)	2'610 mA	2'090 mA	3'125 mA	91 %

Note - Peak power is limited to 140 W max. when used below 130 VAC input

Input Specifications

Input Voltage	- AC Range - DC Range	85 - 264 VAC (Full Range) 120 - 370 VDC
Input Frequency		47 - 63 Hz
Input Current	- Full Load & Vin = 230 VAC - Full Load & Vin = 115 VAC	700 mA max. 1'800 mA max.
Power Consumption	- At no load	300 mW max. (Ready to meet ErP directive)
Input Inrush Current	- At 230 VAC - At 115 VAC	100 A max. 60 A max.
Power Factor	- At 230 VAC - At 115 VAC	0.95 min. 0.95 min.
Input Protection		T 3.15 A / 250 VAC (Internal Fuse in L)
Recommended Input Fuse		(The need of an external fuse has to be assessed in the final application.)

Output Specifications

Output Voltage Adjustment		-20% to +10% (For trim-down lower than -10% a minimum load of 0.25 W is required) (By trim potentiometer) Output power must not exceed rated power!
Voltage Set Accuracy		±1% max.
Regulation	- Input Variation (Vmin - Vmax) - Load Variation (0 - 100%)	0.2% max. 0.5% max.
Output Current peak		max. peak duration: 10 s with 20% duty cycle and 55% average operation power (detailed description see application note)
Ripple and Noise (20 MHz Bandwidth)		12 VDC model: 140 mVp-p typ. (w/ 10 µF, 25 V, MLCC) 15 VDC model: 150 mVp-p typ. (w/ 10 µF, 25 V, MLCC) 24 VDC model: 160 mVp-p typ. (w/ 1 µF, 50 V, MLCC) 36 VDC model: 190 mVp-p typ. (w/ 1 µF, 50 V, MLCC) 48 VDC model: 340 mVp-p typ. (w/ 0.1 µF, 100 V, MLCC)
Capacitive Load		12 VDC model: 8'700 µF max. 15 VDC model: 5'600 µF max. 24 VDC model: 2'200 µF max. 36 VDC model: 1'000 µF max. 48 VDC model: 550 µF max.
Minimum Load		Not required
Temperature Coefficient		±0.02 %/K max.
Hold-up Time	- At 230 VAC - At 115 VAC	40 ms min. 20 ms min.
Start-up Time	- At 230 VAC - At 115 VAC	730 ms max. 730 ms max.
Short Circuit Protection		Continuous, Automatic recovery
Output Current Limitation		120 - 160% of Iout max.
Overvoltage Protection		115 - 135% of Vout nom. (latch mode)
Transient Response	- Response Deviation - Response Time	3% max. (50% to 75% Load Step at 2.5 A/µs) 500 µs typ. (50% to 75% Load Step at 2.5 A/µs)

Safety Specifications

Safety Standards	- IT / Multimedia Equipment	EN 62368-1 IEC 62368-1 UL 62368-1
	- Certification Documents	www.tracopower.com/overview/tpi125a-j
Protection Class		Class I & II (Prepared): Reinforced Insulation

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

Pollution Degree	PD 2
Over Voltage Category	OVC II

EMC Specifications

EMI Emissions	- Conducted Emissions	EN 55032 class B (internal filter) FCC Part 15 class B (internal filter)
	- Radiated Emissions	EN 55032 class A (internal filter) FCC Part 15 class A (internal filter)
	- Harmonic Current Emissions	EN 61000-3-2, class A EN 61000-3-2, class D
	- Voltage Fluctuations & Flicker	EN 61000-3-3
EMS Immunity		EN 55024 (IT Equipment)
	- Electrostatic Discharge	Air: EN 61000-4-2, ± 8 kV, perf. criteria A Contact: EN 61000-4-2, ± 6 kV, perf. criteria A
	- RF Electromagnetic Field	EN 61000-4-3, 20 V/m, perf. criteria A
	- EFT (Burst) / Surge	EN 61000-4-4, ± 2 kV, perf. criteria A L to L: EN 61000-4-5, ± 1 kV, perf. criteria A L to PE: EN 61000-4-5, ± 2 kV, perf. criteria A
	- Conducted RF Disturbances	EN 61000-4-6, 20 Vrms, perf. criteria A
	- PF Magnetic Field	Continuous: EN 61000-4-8, 10 A/m, perf. criteria A
	- Voltage Dips & Interruptions	230 VAC / 50 Hz: EN 61000-4-11 115 VAC / 60 Hz: EN 61000-4-11

General Specifications

Relative Humidity		95% max. (non condensing)
Temperature Ranges	- Operating Temperature	-40°C to +85°C
	- Storage Temperature	-40°C to +85°C (-40°C startup: 80% load max. at Vin >100 VAC -40°C startup: 100% load max. at Vin >200 VAC)
Power Derating	- High Temperature	See application note: www.tracopower.com/overview/tpi125a-j 1.33 %/V below 100 VAC
	- Low Input Voltage	
Cooling System	- Option 1	Forced air cooling (with external fan, 400 LFM)
	- Option 2	Natural convection (20 LFM)
Altitude During Operation		5'000 m max.
Switching Frequency		60 kHz typ.
Insulation System		Reinforced Insulation
Working Voltage (rated)		527 VAC
Isolation Test Voltage	- Input to Output, 60 s	4'000 VAC
Creepage	- Input to Output	8 mm min.
Clearance	- Input to Output	6.8 mm min.
Isolation Resistance	- Input to Output, 500 VDC	100 M Ω min.
Leakage Current (at 264 VAC)	- Touch Current	300 μ A max.
Reliability	- Calculated MTBF	790'000 h (MIL-HDBK-217F, ground benign)
Environment	- Vibration	IEC 60068-2-6
	- Mechanical Shock	IEC 60068-2-27
Connection Type		JST
Weight		156 g
Environmental Compliance	- REACH Declaration	www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant
	- RoHS Declaration	www.tracopower.com/info/rohs-declaration.pdf Exemptions: 7a, 7c-I

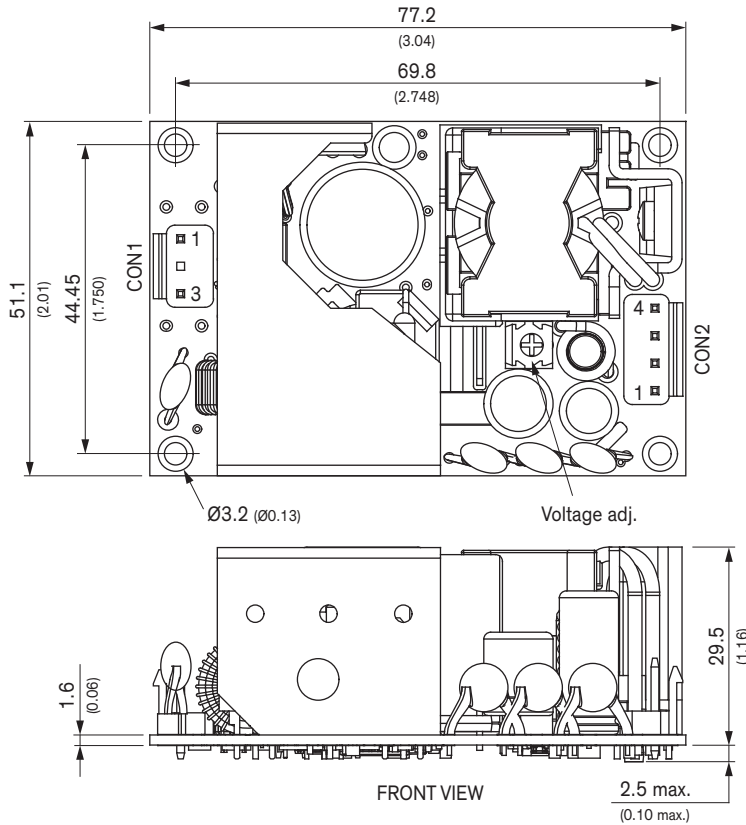
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Supporting Documents

Overview Link (for additional Documents)

www.tracopower.com/overview/tpi125a-j

Outline Dimensions



Dimensions in mm (inch)
 Tolerances: x.x ±0.5 (x.xx ±0.02)
 Tolerances: x.xx±0.25 (x.xxx ±0.01)
 Screw lock torque: Max. 0.49 Nm (5 kgfcm)

Pin connectors

Input (CON1)		Output (CON2)	
Pin	Function	Pin	Function
1	Line	1-2*	-Vout
3	Neutral	3-4*	+Vout

Terminal rated for 10 A max. per pin.

CON1: JST series
 mates with JST crimp terminal: SVH-21T-P1.1
 and terminal housing: VHR-3N

CON2: JST series
 mates with JST crimp terminal: SVH-21T-P1.1
 and terminal housing: VHR-4N