TRACO POWER

AC/DC Industrial Power Supply

TPI 100A Series, 100 Watt

- **Highest power density 100 W open frame power supply in 2” x 3” package**
- **I/O reinforced isolation 3000 VDC**
- **Ready to meet ErP directive, < 0.3 W no load power consumption**
- **Highest efficiency 91% - 92% across 10% - 100% load range**
- **Active power factor correction > 95**
- **Protection class II prepared**
- **Operating up to 5000 m altitude**
- **Adjustable output voltage**
- **3-year product warranty**



prepared ErP ready cULus CB Scheme

UL 60950-1 IEC 60950-1

The TPI 100A Series of 100 Watt AC/DC power supplies features a 3000 VAC I/O reinforced isolation. Excellent efficiency of up to 92% allows a high power density for the standard 2.0” x 3.0” packaging format. The full load operating temperature range is –40°C to +50°C while it goes up to 80°C with load derating. The power supplies are designed to meet the ErP directive (< 0.3 W no load power consumption). They come with an active power factor correction and the EMC characteristic is dedicated for applications in industrial and domestic fields. High reliability is provided by use of industrial quality grade components and an excellent thermal management. It makes the products an ideal solution for any demanding industrial devices and space critical applications.

Models

Order Code	Output Power max.	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPI 100-112A-J	100 W	12 VDC (10.8 - 13.2 VDC)	8'340 mA	91 %
TPI 100-115A-J		15 VDC (13.5 - 16.5 VDC)	6'670 mA	92 %
TPI 100-124A-J		24 VDC (21.6 - 26.4 VDC)	4'170 mA	92 %
TPI 100-128A-J		28 VDC (25.2 - 30.8 VDC)	3'580 mA	92 %
TPI 100-136A-J		36 VDC (32.4 - 39.6 VDC)	2'780 mA	91 %
TPI 100-148A-J		48 VDC (43.2 - 52.8 VDC)	2'090 mA	91 %

Input Specifications

Input Voltage	- AC Range	85 - 264 VAC (Full Range)
	- DC Range	120 - 370 VDC (Designed for, no certification)
Input Frequency		47 - 63 Hz
Input Current	- Full Load & Vin = 230 VAC	550 mA max.
	- Full Load & Vin = 115 VAC	1'150 mA max.
Power Consumption	- At no load	300 mW max. (Ready to meet ErP directive)
Input Inrush Current	- At 230 VAC	100 A max.
Power Factor	- At 230 VAC	0.95 min.
	- At 115 VAC	0.95 min.
Input Protection		T 3.15 A / 250 VAC (Internal Fuse in L & N)
Recommended Input Fuse		(The need of an external fuse has to be assessed in the final application.)

Output Specifications

Output Voltage Adjustment			±10% (By trim potentiometer) Output power must not exceed rated power!
Voltage Set Accuracy			±1% max.
Regulation	- Input Variation (Vmin - Vmax)		0.2% max.
	- Load Variation (0 - 100%)		0.5% max.
Ripple and Noise (20 MHz Bandwidth)		12 VDC model:	120 mVp-p typ. (w/ 10 µF X7R)
		15 VDC model:	150 mVp-p typ. (w/ 10 µF X7R)
		24 VDC model:	160 mVp-p typ. (w/ 1 µF X7R)
		28 VDC model:	180 mVp-p typ. (w/ 1 µF X7R)
		36 VDC model:	190 mVp-p typ. (w/ 1 µF X7R)
		48 VDC model:	340 mVp-p typ. (w/ 0.1 µF X7R)
Capacitive Load		12 VDC model:	6'950 µF max.
		15 VDC model:	4'450 µF max.
		24 VDC model:	1'750 µF max.
		28 VDC model:	1'280 µF max.
		36 VDC model:	770 µF max.
		48 VDC model:	430 µF max.
Minimum Load			Not required
Temperature Coefficient			±0.02 %/K max.
Hold-up Time	- At 230 VAC		22 ms min.
	- At 115 VAC		22 ms min.
Start-up Time	- At 230 VAC		1'000 ms max.
	- At 115 VAC		1'000 ms max.
Short Circuit Protection			Continuous, Automatic recovery
Output Current Limitation			115 - 150% of Iout max.
Overvoltage Protection			115 - 135% of Vout nom.
Transient Response	- Response Deviation		3% max. (50% to 75% Load Step)
	- Response Time		500 µs typ. (50% to 75% Load Step)

Safety Specifications

Safety Standards	- IT / Multimedia Equipment	EN 60950-1 IEC 60950-1 UL 60950-1
	- Certification Documents	www.tracopower.com/overview/tpi100a
Protection Class		Class I & II (Prepared): Reinforced Insulation
Pollution Degree		PD 2
Over Voltage Category		OVC II

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

EMC Specifications

EMI Emissions			EN 61000-6-4 (Generic Industrial)
	- Conducted Emissions		EN 55011 class B (internal filter) EN 55032 class B (internal filter) FCC Part 15 class B (internal filter)
	- Radiated Emissions		EN 55011 class A (internal filter) 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 30%, 25 periods, perf. criteria A >95%, 0.5 periods, perf. criteria A >95%, 250 periods, perf. criteria B
		115 VAC / 60 Hz:	EN 61000-4-11 30%, 25 periods, perf. criteria A >95%, 0.5 periods, perf. criteria A >95%, 250 periods, perf. criteria B

General Specifications

Relative Humidity			95% max. (non condensing)
Temperature Ranges	- Operating Temperature		–40°C to +80°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/tpi100a
	- Low Input Voltage		1.33 %/V below 100 VAC
Cooling System			Natural convection (20 LFM)
Altitude During Operation			5'000 m max.
Switching Frequency			45 - 75 kHz (PWM QR)
Insulation System			Reinforced Insulation
Working Voltage (rated)			344 VAC
Isolation Test Voltage	- Input to Output, 60 s		3'000 VAC
	- Input to Case or PE, 60 s		1'500 VAC
	- Output to Case or PE, 60 s		1'500 VAC
Isolation Resistance	- Input to Output, 500 VDC		100 MΩ min.
Leakage Current (at 264 VAC)	- Touch Current		300 µA max.
Reliability	- Calculated MTBF		790'000 h (MIL-HDBK-217F, ground benign)
Environment	- Vibration		IEC 60068-2-6 1 g, 3 axis, sine sweep, 10-55 Hz, 1 oct/min
	- Mechanical Shock		IEC 60068-2-27 10 g, 3 axis, half sine, 11 ms 20 g, 3 axis, 3 shocks
Connection Type			JST
Weight			156 g

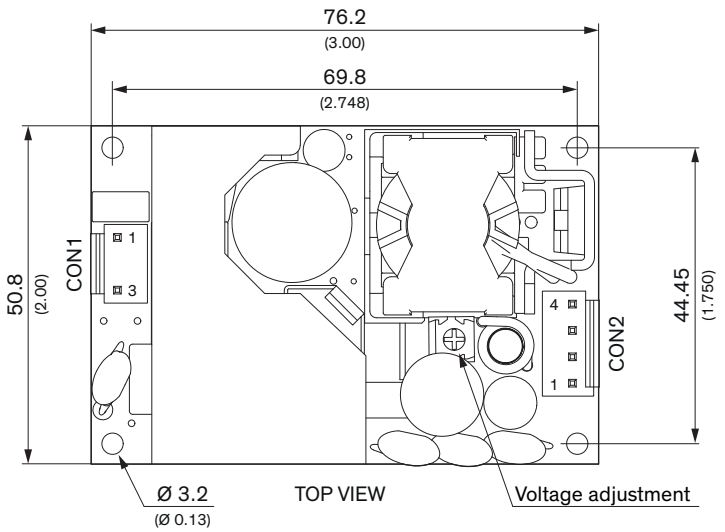
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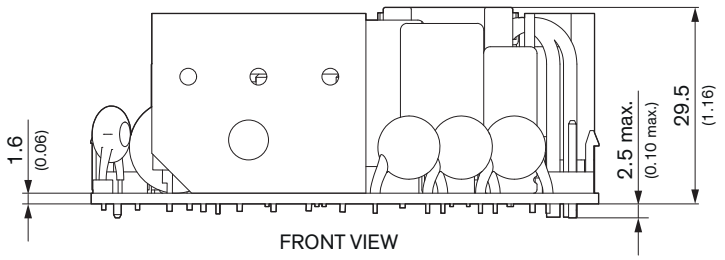
Environmental Compliance	- Reach	www.tracopower.com/info/reach-declaration.pdf
	- RoHS	www.tracopower.com/info/rohs-declaration.pdf

Supporting Documents

Overview Link (for additional Documents)	www.tracopower.com/overview/tpi100a

Outline Dimensions





Dimension in mm, () = inch
Tolerances: x.x ±0.50 (±0.02)
x.xx ±0.25 (±0.01)

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.
(at higher current connection has to be split)

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

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