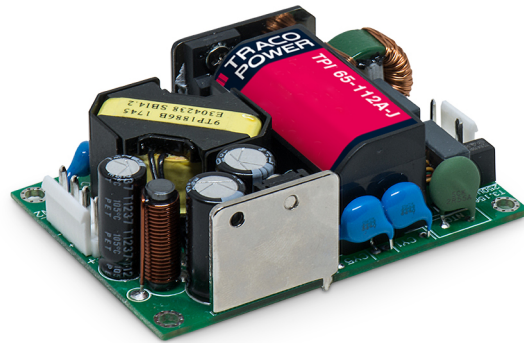


- 65 Watt open frame power supplies in a 3" x 2" package
- Compact and cost efficient design
- Peak power function up to 140%
- I/O reinforced isolation 3000 VAC
- Operating temperature range -40°C to +85°C
- No load input power <0.3W (acc. ErP directive)
- High efficiency up to 93%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 year product warranty



The TPI 65A-J is a 65 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 140% of the rated power for up to 10 seconds. Excellent efficiency of up to 93% allows a compact design and an operating temperature range (natural convection) of -40°C to +70°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 65A-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. | Output Current peak | Efficiency typ. |
|----------------|-------------------|----------------------------------|---------------------|---------------------|-----------------|
| TPI 65-105A-JP | 50 W | 5 VDC (4.0 - 5.5 VDC) | 10'000 mA | 13'000 mA | 90 % |
| TPI 65-112A-JP | 65 W | 12 VDC (9.6 - 13.2 VDC) | 5'420 mA | 7'500 mA | 93 % |
| TPI 65-115A-JP | | 15 VDC (12.0 - 16.5 VDC) | 4'340 mA | 6'000 mA | 94 % |
| TPI 65-124A-JP | | 24 VDC (19.2 - 26.4 VDC) | 2'710 mA | 3'750 mA | 94 % |
| TPI 65-136A-JP | | 36 VDC (28.8 - 39.6 VDC) | 1'810 mA | 2'500 mA | 93 % |
| TPI 65-148A-JP | | 48 VDC (38.4 - 52.8 VDC) | 1'360 mA | 1'875 mA | 93 % |
| TPI 65-153A-JP | | 53 VDC (42.4 - 58.3 VDC) | 1'240 mA | 1'698 mA | 93 % |

Input Specifications

| | | |
|------------------------|--|--|
| Input Voltage | - AC Range | Operational Range: 85 - 264 VAC (Full Range) Rated Range: 100 - 240 VAC (Full Range) |
| | - DC Range | Operational Range: 120 - 370 VDC (Designed for, no certification) Polarity: +DC: L / -DC: N |
| Input Frequency | | Operational Range: 47 - 440 Hz Certified: 50/60 Hz |
| Input Current | - Full Load & Vin = 230 VAC - Full Load & Vin = 115 VAC | 900 mA max. 1'600 mA max. |
| Power Consumption | - No load & Vin = 230 VAC - No load & Vin = 115 VAC | 180 mW max. (Ready to meet ErP directive) 180 mW max. |
| Input Inrush Current | - At 230 VAC - At 115 VAC | 75 A max. 40 A max. |
| 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% (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. 0.7% max. (5 VDC model) 0.5% max. (other output models) |
| Boost Power | | Output Current peak: See model table Peak power time: 5 s max. Peak power duty cycle: 20% max. Average operation power: 70% of full load (detailed description see application note) |
| Ripple and Noise (20 MHz Bandwidth) | | 5 VDC model: 75 mVp-p typ. (w/ 10 µF, 25 V, MLCC) 12 VDC model: 75 mVp-p typ. (w/ 10 µF, 25 V, MLCC) 15 VDC model: 75 mVp-p typ. (w/ 10 µF, 25 V, MLCC) 24 VDC model: 75 mVp-p typ. (w/ 1 µF, 50 V, MLCC) 36 VDC model: 75 mVp-p typ. (w/ 1 µF, 50 V, MLCC) 48 VDC model: 150 mVp-p typ. (w/ 0.1 µF, 100 V, MLCC) 53 VDC model: 150 mVp-p typ. (w/ 0.1 µF, 100 V, MLCC) |
| Capacitive Load | | 5 VDC model: 20'000 µF max. 12 VDC model: 4'520 µF max. 15 VDC model: 2'900 µF max. 24 VDC model: 1'130 µF max. 36 VDC model: 520 µF max. 48 VDC model: 285 µF max. 53 VDC model: 235 µF max. |
| Minimum Load | | Not required |
| Temperature Coefficient | | ±0.02 %/K max. |
| Hold-up Time | - At 230 VAC - At 115 VAC | 90 ms min. 15 ms min. |
| Start-up Time | - At 230 VAC - At 115 VAC | 800 ms max. 950 ms max. |
| Short Circuit Protection | | Continuous, Automatic recovery |
| Output Current Limitation | | 165% typ. of Iout max. |
| Overvoltage Protection | | 125 - 140% of Vout nom. |
| Transient Response | - Response Deviation - Response Time | 3% max. (50% to 75% Load Step at 2.5 A/µs) 600 µs typ. (50% to 75% Load Step at 2.5 A/µs) |

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

Safety Specifications

| | | |
|------------------|-----------------------------|--|
| Safety Standards | - IT / Multimedia Equipment | EN 62368-1 IEC 62368-1 UL 62368-1 |
| | - Certification Documents | www.tracopower.com/overview/tpi65a-j |
| Protection Class | | Class I & II (Prepared): Reinforced Insulation |
| Pollution Degree | | PD 2 |

EMC Specifications

| | | |
|---------------|----------------------------------|---|
| EMI Emissions | - 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 B (internal filter) EN 55032 class B (internal filter) FCC Part 15 class B (internal filter) |
| | - Harmonic Current Emissions | EN 61000-3-2, class A |
| | - Voltage Fluctuations & Flicker | EN 61000-3-3 |
| EMS Immunity | | EN 55024 (IT Equipment) EN 55035 (Multimedia) |
| | - Electrostatic Discharge | Air: EN 61000-4-2, ± 15 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, ± 4 kV, perf. criteria A L to L: EN 61000-4-5, ± 2 kV, perf. criteria A L to PE: EN 61000-4-5, ± 4 kV, perf. criteria A |
| | - Conducted RF Disturbances | EN 61000-4-6, 20 Vrms, perf. criteria A |
| | - PF Magnetic Field | Continuous: EN 61000-4-8, 100 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 |
| Power Derating | - High Temperature | Depending on model |
| | - Low Input Voltage | 4 %/V below 90 VAC |
| | | See application note: www.tracopower.com/overview/tpi65a-j |
| Cooling System | | Natural convection (20 LFM) |
| Altitude During Operation | | 5'000 m max. |
| Switching Frequency | | 60 kHz typ. (PWM QR) (5 VDC models) 120 kHz typ. (PWM QR) (other models) |
| Insulation System | | Reinforced Insulation |
| Working Voltage (rated) | | 273 VAC |
| Isolation Test Voltage | - Input to Output, 60 s | 3'000 VAC |
| Creepage | - Input to Output | 8 mm min. |
| Clearance | - Input to Output | 8 mm min. |
| Isolation Resistance | - Input to Output, 500 VDC | 100 M Ω min. |
| Leakage Current (at 264 VAC) | - Earth Leakage Current | 75 μ A max. |
| Distance Through Isolation | | 0.4 mm |
| Reliability | - Calculated MTBF | 1'490'000 h (MIL-HDBK-217F, ground benign) |
| Environment | - Vibration | IEC 60068-2-6 |
| | - Mechanical Shock | IEC 60068-2-27 |
| Housing Type | | Open Frame |
| Mounting Type | | Chassis Mount |
| Connection Type | | Pin Connector |

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

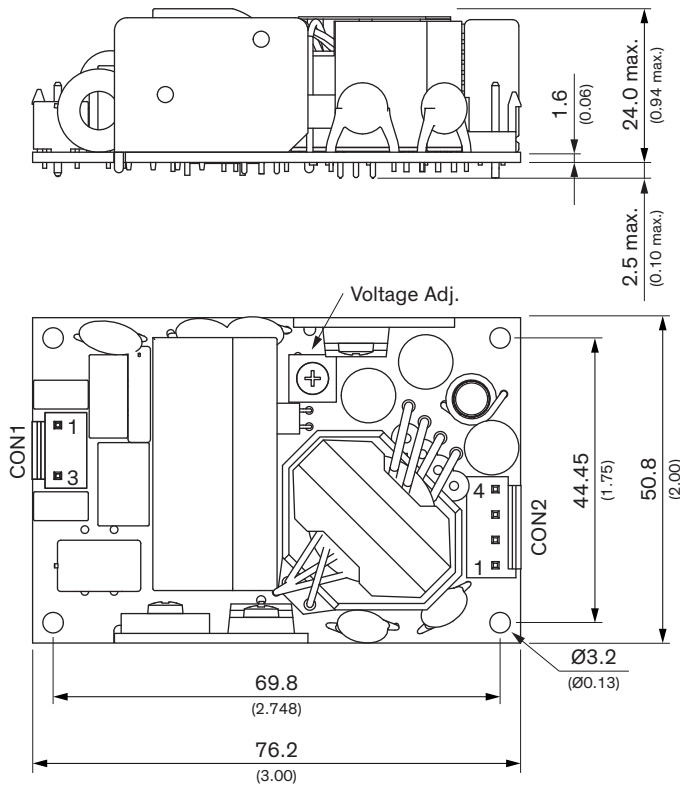
| | |
|--|---|
| Weight | 117 g |
| Environmental Compliance - REACH Declaration | www.tracopower.com/info/reach-declaration.pdf |
| - RoHS Declaration | REACH SVHC list compliant REACH Annex XVII compliant www.tracopower.com/info/rohs-declaration.pdf |
| - SCIP Reference Number | Exemptions: 7a, 7c-1 (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule)) 54f38b10-a6c9-46f7-9475-640404133b0c |

Supporting Documents

Overview Link (for additional Documents)

www.tracopower.com/overview/tpi65a-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.
(at higher current connection has to be split)

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

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