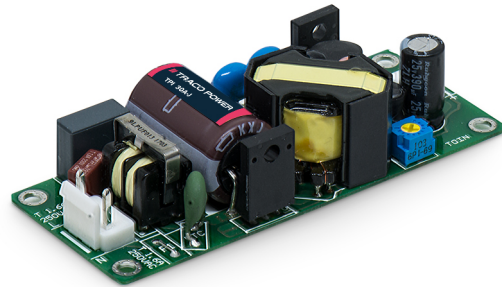


- 30 Watt open frame power supplies in a 3.34" x 1.36" package
- Compact and cost efficient design
- Peak power function up to 130%
- I/O reinforced isolation 4000 VDC
- Operating temperature range -40°C to +85°C
- No load input power <0.3W (acc. ErP directive)
- High efficiency up to 90%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3-year product warranty



The TPI 30A-J is a 30 Watt AC/DC open frame power supplies series with a 4000 VDC 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 130% of the rated power for up to 10 seconds. Excellent efficiency of up to 90% allows a compact design and an operating temperature range (natural convection) of -40°C to +60°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 30A-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 30-103A-JP | 20 W | 3.3 VDC (2.97 - 3.63 VDC) | 6'000 mA | 7'576 mA | 83 % |
| TPI 30-105A-JP | | 5 VDC (4.0 - 5.5 VDC) | 6'000 mA | 8'000 mA | 86 % |
| TPI 30-112A-JP | 30 W | 12 VDC (9.6 - 13.2 VDC) | 2'500 mA | 3'333 mA | 89 % |
| TPI 30-115A-JP | | 15 VDC (12.0 - 16.5 VDC) | 2'000 mA | 2'667 mA | 89 % |
| TPI 30-124A-JP | | 24 VDC (19.2 - 26.4 VDC) | 1'250 mA | 1'667 mA | 88 % |
| TPI 30-136A-JP | | 36 VDC (28.8 - 39.6 VDC) | 840 mA | 1'111 mA | 89 % |
| TPI 30-148A-JP | | 48 VDC (38.4 - 52.8 VDC) | 630 mA | 833 mA | 91 % |
| TPI 30-153A-JP | | 53 VDC (42.4 - 58.3 VDC) | 580 mA | 755 mA | 90 % |

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 |
| Power Consumption | - No load & Vin = 230 VAC - No load & Vin = 115 VAC | 75 mW max. (Ready to meet ErP directive) 75 mW max. |
| Input Current | - Full load & Vin = 230 VAC - Full load & Vin = 115 VAC | 400 mA max. 800 mA max. |
| Input Inrush Current | - At 230 VAC - At 115 VAC | 45 A max. 26 A max. |
| Input Protection | | T 1.6 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 | | ±10% (3.3 VDC models) -20% to +10% (other models) (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. (3.3 and 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) | | 3.3 VDC model: 50 mVp-p typ. (w/ 10 µF, 25 V, MLCC) 5 VDC model: 50 mVp-p typ. (w/ 10 µF, 25 V, MLCC) 12 VDC model: 50 mVp-p typ. (w/ 1 µF, 50 V, MLCC) 15 VDC model: 50 mVp-p typ. (w/ 1 µF, 50 V, MLCC) 24 VDC model: 50 mVp-p typ. (w/ 1 µF, 50 V, MLCC) 36 VDC model: 50 mVp-p typ. (w/ 1 µF, 50 V, MLCC) 48 VDC model: 50 mVp-p typ. (w/ 0.1 µF, 100 V, MLCC) 53 VDC model: 50 mVp-p typ. (w/ 0.1 µF, 100 V, MLCC) |
| Capacitive Load | | 3.3 VDC model: 10'000 µF max. 5 VDC model: 12'000 µF max. 12 VDC model: 2'085 µF max. 15 VDC model: 1'350 µF max. 24 VDC model: 520 µF max. 36 VDC model: 235 µF max. 48 VDC model: 130 µF max. 53 VDC model: 109 µF max. |
| Minimum Load | | Not required |
| Temperature Coefficient | | ±0.02 %/K max. |
| Hold-up Time | - At 230 VAC - At 115 VAC | 80 ms min. 14 ms min. |
| Start-up Time | - At 230 VAC - At 115 VAC | 800 ms max. 900 ms max. |
| Short Circuit Protection | | Continuous, Automatic recovery |
| Output Current Limitation | | 165% typ. of Iout max. |
| Overvoltage Protection | | 125 - 140% of Vout nom. |

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

| | | |
|--------------------|----------------------|---|
| Transient Response | - Response Deviation | 3% max. (50% to 75% Load Step at 2.5 A/ μ s) |
| | - Response Time | 500 μ s typ. (50% to 75% Load Step at 2.5 A/ μ s) |

Safety Specifications

| | | |
|-----------------------|-----------------------------|--|
| Standards | - IT / Multimedia Equipment | EN 62368-1 IEC 62368-1 UL 62368-1 |
| | - Certification Documents | www.tracopower.com/overview/tpi30a-j |
| Protection Class | | Class I & II (Prepared): Reinforced Insulation |
| Pollution Degree | | PD 2 |
| Over Voltage Category | | OVC II |

EMC Specifications

| | | | |
|-----------------|----------------------------------|---|--|
| EMI (Emissions) | - Conducted Emissions | EN 55032 class B (internal filter) FCC 47 Part 15 class B (internal filter) | |
| | - Radiated Emissions | EN 55032 class B (internal filter) FCC 47 Part 15 class B (internal filter) | |
| | - Harmonic Current Emissions | EN 61000-3-2, class A | |
| | - Voltage Fluctuations & Flicker | EN 61000-3-3 | |
| EMS (Immunity) | - Electrostatic Discharge | Air: EN 61000-4-2, ± 15 kV, perf. criteria A Contact: EN 61000-4-2, ± 8 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 | |
| | - Conducted RF Disturbances | L to L: EN 61000-4-5, ± 1 kV, perf. criteria A | |
| | - PF Magnetic Field | EN 61000-4-6, 20 Vrms, perf. criteria A | |
| | - Voltage Dips & Interruptions | Continuous: EN 61000-4-8, 30 A/m, perf. criteria A | |
| | | 230 VAC / 50 Hz: EN 61000-4-11 | |
| | | 115 VAC / 60 Hz: EN 61000-4-11 | |
| | EMC / Environmental | - Certification Documents | www.tracopower.com/overview/tpi30a-j |

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 | 2.2 %/K above 60°C |
| | - Low Input Voltage | 4 %/V below 90 VAC |
| | See application note: | www.tracopower.com/overview/tpi30a-j |
| Cooling System | | Natural convection (20 LFM) |
| Altitude During Operation | | 5'000 m max. |
| Regulator Topology | | Flyback Converter |
| Switching Frequency | | 30 - 60 kHz (PWM QR) |
| | | 45 kHz typ. (PWM QR) |
| Insulation System | | Reinforced Insulation |
| Working Voltage (rated) | | 272 VAC |
| Isolation Test Voltage | - Input to Output, 60 s | 4'000 VDC |
| | - Input to Case or PE, 60 s | 2'500 VDC |
| Isolation Resistance | - Input to Output, 500 VDC | 100 M Ω min. |
| Leakage Current (at 264 VAC) | - Touch Current | 100 μ A max. |
| Reliability | - Calculated MTBF | 3'340'000 h (MIL-HDBK-217F, ground benign) |
| Environment | - Vibration | IEC 60068-2-6 |
| | - Mechanical Shock | IEC 60068-2-27 |
| Housing Type | | Open Frame |

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

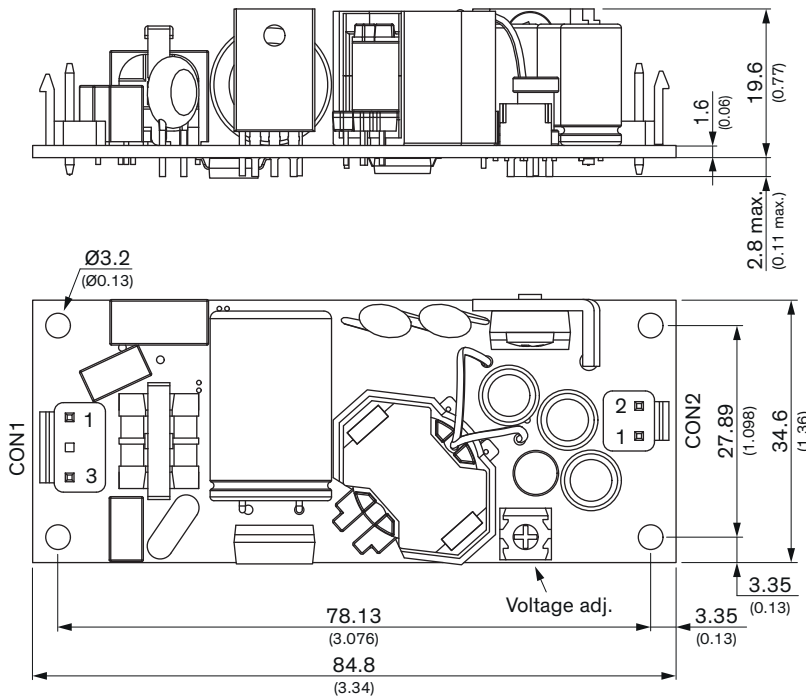
| | |
|--------------------------|--|
| Mounting Type | Chassis Mount |
| Connection Type | Pin Connector |
| Weight | 60.5 g |
| Environmental Compliance | <p>- REACH Declaration www.tracopower.com/info/reach-declaration.pdf</p> <p>REACH SVHC list compliant</p> <p>REACH Annex XVII compliant</p> <p>www.tracopower.com/info/rohs-declaration.pdf</p> <p>Exemptions: 7a, 7c-1</p> <p>(RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).)</p> <p>34ad3315-17cb-4c83-a0c2-7bee1cdcca61</p> |
| | - RoHS Declaration |
| | - SCIP Reference Number |

Supporting Documents

Overview Link (for additional Documents)

www.tracopower.com/overview/tpi30a-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 | +Vout |
| 3 | Neutral | 2 | -Vout |

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-2N