

- Fully encapsulated 1.07" x 2.06" x 0.93" package
- ErP-ready (<100mW no-load power)
- EN 60335 certified (household)
- UL 62368-1 certified (IT and industrial)
- -25°C up to +70°C operating temperature
- 130% peak power (for up to 30s)
- Integrated class B EMI filter
- 4000 VAC I/O isolation (reinforced)
- Protection class II prepared
- 3-year product warranty



The TMPS 15 is a series of fully encapsulated AC/DC power supplies for household, building automation and industrial applications. Thanks to its very low no-load power consumption of <100mW, the TMPS 15 meets the ErP directive for energy efficient devices of the European Union. All TMPS 15 power supplies are prepared for protection class II applications and come with an integrated EN 55032 class B EMI filter. The reinforced isolation, high power density and excellent peak power capability, makes the TMPS 15 a first choice for demanding applications.

### Models

| Order Code  | Output Power max. | Output Voltage nom. | Output Current max. | Output Current peak | Efficiency typ. |
|-------------|-------------------|---------------------|---------------------|---------------------|-----------------|
| TMPS 15-105 | 15 W              | 5 VDC               | 3'000 mA            | 3'900 mA            | 79 %            |
| TMPS 15-112 |                   | 12 VDC              | 1'250 mA            | 1'625 mA            | 82 %            |
| TMPS 15-115 |                   | 15 VDC              | 1'000 mA            | 1'300 mA            | 82 %            |
| TMPS 15-124 |                   | 24 VDC              | 625 mA              | 813 mA              | 84 %            |
| TMPS 15-148 |                   | 48 VDC              | 313 mA              | 407 mA              | 82 %            |

### Options

|  |  |
|--|--|
| <b>on demand</b><br>(backorder with MOQ non stocking item) | - Optional model with 3.3 VDC / 3'500 mA<br>- Optional model with 9 VDC / 1'667 mA |
|--|--|

### Input Specifications

|                        |                                  |   |
|------------------------|----------------------------------|---|
| Input Voltage          | - AC Range                       | Operational Range: <b>85 - 264 VAC</b> (Full Range)<br>Rated Range: <b>100 - 240 VAC</b> (Full Range)   |
|                        | - DC Range                       | Operational Range: <b>120 - 370 VDC</b> (Designed for, no certification)<br>Polarity: <b>irrelevant</b> |
| Input Frequency        |                                  | <b>47 - 440 Hz</b>  |
| Input Current          | - Full Load & $V_{in} = 230$ VAC | <b>200 mA max.</b>  |
|                        | - Full Load & $V_{in} = 115$ VAC | <b>300 mA max.</b>  |
| Power Consumption      | - At no load                     | <b>100 mW max.</b> (Ready to meet ErP directive)  |
| Input Inrush Current   | - At 230 VAC                     | <b>45 A max.</b>  |
|                        | - At 115 VAC                     | <b>25 A max.</b>  |
| Recommended Input Fuse |                                  | (The need of an external fuse has to be assessed in the final application.)                             |

### Output Specifications

|  |   |  |
|--|---|--|
| Voltage Set Accuracy                   |   | <b>±2% max.</b>  |
| Regulation                             | - Input Variation ( $V_{min} - V_{max}$ ) | <b>0.5% max.</b>   |
|  | - Load Variation (0 - 100%)               | <b>1% max.</b>   |
| Boost Power                            |   | Output Current peak: See model table<br>Peak power time: <b>30 s max.</b><br>Peak power duty cycle: <b>10% max.</b><br>Average operation power: <b>15 W max.</b> |
| Ripple and Noise<br>(20 MHz Bandwidth) | 3.3 VDC model:                            | <b>80 mVp-p max.</b>   |
|  | 5 VDC model:                              | <b>80 mVp-p max.</b>   |
|  | 9 VDC model:                              | <b>90 mVp-p max.</b>   |
|  | 12 VDC model:                             | <b>120 mVp-p max.</b>  |
|  | 15 VDC model:                             | <b>150 mVp-p max.</b>  |
|  | 24 VDC model:                             | <b>240 mVp-p max.</b>  |
| Capacitive Load                        | 3.3 VDC model:                            | <b>5'600 <math>\mu</math>F max.</b>  |
|  | 5 VDC model:                              | <b>3'300 <math>\mu</math>F max.</b>  |
|  | 9 VDC model:                              | <b>1'000 <math>\mu</math>F max.</b>  |
|  | 12 VDC model:                             | <b>560 <math>\mu</math>F max.</b>  |
|  | 15 VDC model:                             | <b>330 <math>\mu</math>F max.</b>  |
|  | 24 VDC model:                             | <b>150 <math>\mu</math>F max.</b>  |
| 48 VDC model:                          | <b>33 <math>\mu</math>F max.</b>          |  |
| Minimum Load                           |   | <b>Not required</b>  |
| Temperature Coefficient                |   | <b>±0.02 %/K max.</b>  |
| Hold-up Time                           | - At 230 VAC                              | <b>40 ms min.</b>  |
|  | - At 115 VAC                              | <b>8 ms min.</b>   |
| Start-up Time                          | - At 230 VAC                              | <b>1'000 ms max.</b>   |
| Short Circuit Protection               |   | <b>Continuous, Automatic recovery</b>  |
| Overload Protection                    |   | <b>Foldback Mode</b>   |
| Output Current Limitation              |   | <b>150% typ. of I<sub>out</sub> max.</b><br>(Long term overload may cause damage)  |
| Overvoltage Protection                 |   | <b>125% typ. of V<sub>out</sub> nom.</b><br>(By Zener diode)   |

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<br>IEC 62368-1<br>UL 62368-1  |
|                       | - Household                 | EN 60335-1<br>IEC 60335-1  |
|                       | - Power Transformers        | EN 61558-2-16<br>IEC 61558-2-16  |
|                       | - Certification Documents   | <a href="http://www.tracopower.com/overview/tmps15">www.tracopower.com/overview/tmps15</a> |
| Protection Class      |                             | Class I & II (Prepared): Reinforced Insulation   |
| Pollution Degree      |                             | PD 2   |
| Over Voltage Category |                             | OVC II   |

### EMC Specifications

|               |                                  |  |
|---------------|----------------------------------|--|
| EMI Emissions | - Conducted Emissions            | EN 55014-1 (internal filter)<br>EN 55032 class B (internal filter)   |
|               | - Radiated Emissions             | EN 55014-1 (internal filter)<br>EN 55032 class B (internal filter)   |
|               | - Voltage Fluctuations & Flicker | EN 61000-3-3   |
|               | EMS Immunity                     | EN 55024 (IT Equipment)<br>EN 55014-2 (Household Appliances Tools)   |
|               | - Electrostatic Discharge        | Air: EN 61000-4-2, $\pm 8$ kV, perf. criteria A<br>Contact: EN 61000-4-2, $\pm 6$ kV, perf. criteria A<br>EN 61000-4-3, 10 V/m, perf. criteria A<br>EN 61000-4-4, $\pm 2$ kV, perf. criteria A           |
|               | - RF Electromagnetic Field       | L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria A<br>EN 61000-4-6, 10 Vrms, perf. criteria A  |
|               | - EFT (Burst) / Surge            | Continuous: EN 61000-4-8, 30 A/m, perf. criteria A<br>230 VAC / 50 Hz: EN 61000-4-11<br>30%, 0.5 periods, perf. criteria A<br>>95%, 0.5 periods, perf. criteria A<br>>95%, 250 periods, perf. criteria B |
|               | - Conducted RF Disturbances      | 115 VAC / 60 Hz: EN 61000-4-11<br>30%, 25 periods, perf. criteria A<br>>95%, 0.5 periods, perf. criteria A<br>>95%, 250 periods, perf. criteria B  |
|               | - PF Magnetic Field              |  |
|               | - Voltage Dips & Interruptions   |  |

### General Specifications

|                           |                            |  |
|---------------------------|----------------------------|--|
| Relative Humidity         |                            | 95% max. (non condensing)                |
| Temperature Ranges        | - Operating Temperature    | -25°C to +70°C                           |
|                           | - Storage Temperature      | -40°C to +85°C                           |
| Power Derating            | - High Temperature         | 3.33 %/K above 55°C                      |
| Cooling System            |                            | Natural convection (20 LFM)              |
| Altitude During Operation |                            | 2'000 m max.                             |
| Switching Frequency       |                            | 94 - 125 kHz (PFM)<br>115 kHz typ. (PFM) |
| Insulation System         |                            | Reinforced Insulation                    |
| Working Voltage (rated)   |                            | 250 VAC                                  |
| Isolation Test Voltage    | - Input to Output, 60 s    | 3'000 VAC                                |
| Isolation Resistance      | - Input to Output, 500 VDC | 1'000 M $\Omega$ min.                    |
| Reliability               | - Calculated MTBF          | 430'000 h (MIL-HDBK-217F, ground benign) |
| Housing Material          |                            | Plastic resin (UL 94 V-0 rated)          |
| Potting Material          |                            | Silicone (UL 94 V-0 rated)               |
| Pin Material              |                            | Copper Alloy (C2680)                     |
| Pin Foundation Plating    |                            | Nickel (2 - 4 $\mu$ m)                   |
| Pin Surface Plating       |                            | Tin (3 - 5 $\mu$ m), matte               |

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

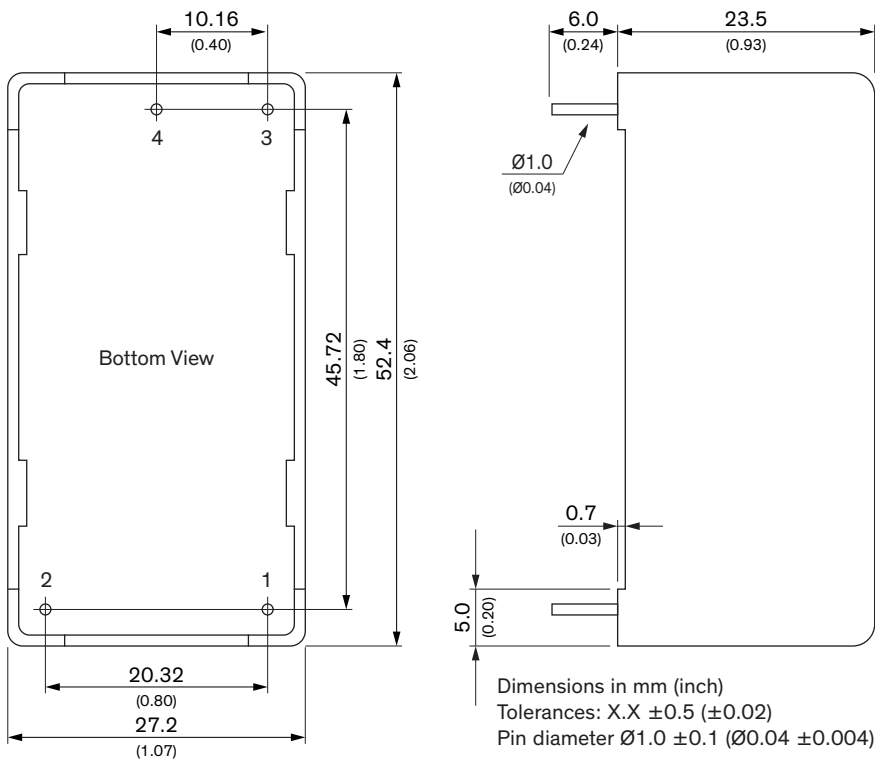
|                          |   |
|--------------------------|---|
| Housing Type             | Plastic Case  |
| Mounting Type            | PCB Mount   |
| Connection Type          | THD (Through-Hole Device)   |
| Soldering Profile        | Wave Soldering<br>260°C / 10 s  |
| Weight                   | 60 g  |
| Environmental Compliance | - REACH Declaration<br><a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a><br>REACH SVHC list compliant<br>REACH Annex XVII compliant  |
|                          | - RoHS Declaration<br><a href="http://www.tracopower.com/info/rohs-declaration.pdf">www.tracopower.com/info/rohs-declaration.pdf</a><br>Exemptions: 7a<br>(RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).<br>The SCIP number is provided on request.) |

### Supporting Documents

Overview Link (for additional Documents)

[www.tracopower.com/overview/tmps15](http://www.tracopower.com/overview/tmps15)

### Outline Dimensions



| Pinout |          |
|--------|----------|
| Pin    | Function |
| 1      | AC (N)   |
| 2      | AC (L)   |
| 3      | +Vout    |
| 4      | -Vout    |