

- Compact PCB power module in 1.46" x 1.08" package
- Wide input voltage range 90-305 VAC
- Certified according to EN 60335-1 and IEC/EN/UL 62368-1
- I/O-Isolation 4'000 VAC
- Operating temperature range -40°C to +70°C
- No load input power <0.1W (acc. ErP directive)
- High efficiency up to 86%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 year product warranty



The TMPW 10 is a 10 Watt AC/DC series with an extended input range of 90-305 VAC and is suitable for industrial and household/building technology applications and comes in a compact encapsulated plastic case. The 305 VAC (277 VAC \pm 10%) threshold is derived from a 480 VAC three-phase supply voltage often used in heavy industrial applications. Through the increased voltage level, the drawn current from the load is effectively reduced, which allows for an overall more compact and lightweight design approach. They offer an I/O-isolation voltage of 4000 VAC, a high temperature range of -40 to +70°C and are prepared for protection class II applications. Additionally, an internal EN 55032 class B filter saves valuable board space for an otherwise often mandatory external filter setup. An energy efficient design (<0.1 Watt standby power consumption) and safety approvals according to IEC/EN/UL 62368-1 and EN 60335-1 make this series suitable for a wide range of industrial and household/building technology applications.

| Models | | | | |
|-------------|-------------------|---------------------|---------------------|-----------------|
| Order Code | Output Power max. | Output Voltage nom. | Output Current max. | Efficiency typ. |
| TMPW 10-105 | 10 W | 5 VDC | 2'000 mA | 81 % |
| TMPW 10-112 | | 12 VDC | 833 mA | 85 % |
| TMPW 10-115 | | 15 VDC | 667 mA | 86 % |
| TMPW 10-124 | | 24 VDC | 417 mA | 86 % |

Input Specifications

| | | |
|------------------------|--|---|
| Input Voltage | - AC Range - DC Range | 90 - 305 VAC (Full Range) 100 - 250 VDC (264 VAC max. for Household Certification) |
| Input Frequency | | 47 - 63 Hz (designed to meet: 47 - 440 Hz) |
| Input Current | - Full Load & Vin = 230 VAC - Full Load & Vin = 115 VAC | 140 mA max. 230 mA max. |
| Power Consumption | - At no load | 100 mW max. |
| Input Inrush Current | - At 230 VAC - At 115 VAC | 60 A max. 30 A max. |
| Recommended Input Fuse | | 1'600 mA (slow blow) (The need of an external fuse has to be assessed in the final application.) |

Output Specifications

| | | |
|--|---|---|
| Voltage Set Accuracy | | ±2% max. |
| Regulation | - Input Variation (Vmin - Vmax) - Load Variation (0 - 100%) | 0.2% max. 1% max. (5 & 12 Vout models) 0.5 % max. (other models) |
| Ripple and Noise (20 MHz Bandwidth) | 5 VDC model: 12 VDC model: 15 VDC model: 24 VDC model: | 60 mVp-p max. (w/ 0.1 µF // 47 µF) 120 mVp-p max. (w/ 0.1 µF // 47 µF) 150 mVp-p max. (w/ 0.1 µF // 47 µF) 240 mVp-p max. (w/ 0.1 µF // 47 µF) |
| Capacitive Load | 5 VDC model: 12 VDC model: 15 VDC model: 24 VDC model: | 3'500 µF max. 700 µF max. 390 µF max. 180 µF max. |
| Minimum Load | | Not required |
| Temperature Coefficient | | ±0.02 %/K max. |
| Hold-up Time | - At 230 VAC | 30 ms min. |
| Start-up Time | - At 230 VAC - At 115 VAC | 60 ms max. 60 ms max. |
| Short Circuit Protection | | Continuous, Automatic recovery |
| Overvoltage Protection | | 105 - 145% of Vout nom. (By zener diode) |
| Transient Response | - Response Deviation - Response Time | 2% typ. / 3% max. (50% to 75% Load Step) 500 µs max. (50% to 75% Load Step) |

Safety Specifications

| | | |
|-----------------------|---|---|
| Safety Standards | - IT / Multimedia Equipment - Household - Power Transformers - Certification Documents | EN 62368-1 IEC 62368-1 UL 62368-1 EN 60335-1 IEC 60335-1 IEC 61558-1 IEC 61558-2-16 www.tracopower.com/overview/tmpw10 |
| 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 | - Conducted Emissions | EN 55032 class B (internal filter) |
| | - Radiated Emissions | EN 55032 class B (internal filter) |
| | - Voltage Fluctuations & Flicker | EN 61000-3-3 |
| EMS Immunity | | EN 55024 (IT Equipment) |
| | | EN 55035 (Multimedia) |
| | - Electrostatic Discharge | Air: EN 61000-4-2, ± 8 kV, perf. criteria A |
| | | Contact: EN 61000-4-2, ± 4 kV, perf. criteria A |
| | - RF Electromagnetic Field | EN 61000-4-3, 3 V/m, perf. criteria A |
| | - EFT (Burst) / Surge | EN 61000-4-4, ± 1 kV, perf. criteria A |
| | | L to L: EN 61000-4-5, ± 1 kV, perf. criteria A |
| | - Conducted RF Disturbances | EN 61000-4-6, 3 Vrms, perf. criteria A |
| | - PF Magnetic Field | Continuous: EN 61000-4-8, 1 A/m, perf. criteria A |
| | - Voltage Dips & Interruptions | 230 VAC / 50 Hz: EN 61000-4-11 30%, 25 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%, 250 periods, perf. criteria B | |

General Specifications

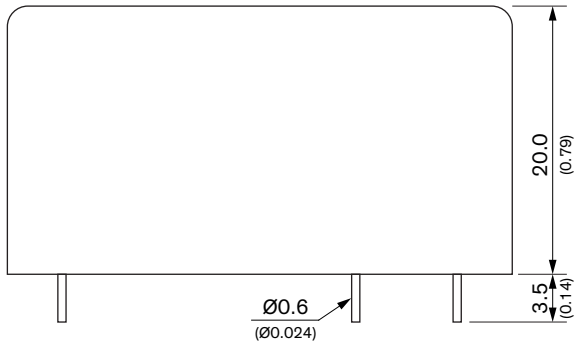
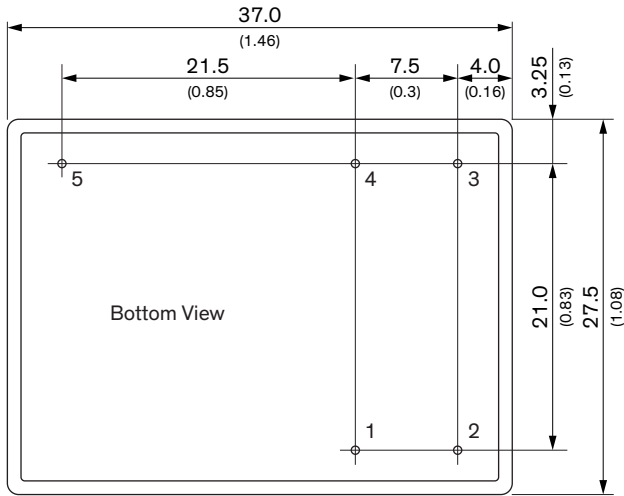
| | | |
|---------------------------|-------------------------|---|
| Relative Humidity | | 95% max. (non condensing) |
| Temperature Ranges | - Operating Temperature | -40°C to +70°C |
| | - Storage Temperature | -40°C to +85°C |
| Power Derating | - High Temperature | 2.5 %/K above 50°C |
| | - Low Input Voltage | 2 %/V below 100 VAC |
| Cooling System | | Natural convection (20 LFM) |
| Altitude During Operation | | 5'000 m max. (acc. IEC 62368-1) |
| | | 2'000 m max. (acc. IEC 60335-1) |
| Switching Frequency | | 35 - 75 kHz (PWM) (PFM) |
| Insulation System | | Reinforced Insulation |
| Working Voltage (rated) | | 254 VAC |
| Isolation Test Voltage | - Input to Output, 60 s | 4'000 VAC |
| Leakage Current | - Touch Current | 250 μ A max. |
| Reliability | - Calculated MTBF | 450'000 h (MIL-HDBK-217F, ground benign) |
| Environment | - Vibration | IEC 60068-2-6 2 g, 3 axis, 60 min, 10-500 Hz, 10 min/cycle |
| | - Mechanical Shock | IEC 60068-2-27 |
| Housing Material | | Plastic resin (UL 94 V-0 rated) |
| Potting Material | | Silicone (UL 94 V-0 rated) |
| Pin Material | | Brass |
| Pin Surface Plating | | Tin (120 μ m min.), matte |
| Connection Type | | THD (Through-Hole Device) |
| Weight | | 31 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: 7c-I |

Supporting Documents

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| Overview Link (for additional Documents) | www.tracopower.com/overview/tmpw10 |
|--|--|

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

Outline Dimensions



Dimensions in mm (inch)
Tolerances: x.x ±0.5 (±0.02)

| Pinout | |
|--------|-----------|
| Pin | Single |
| 1 | +Vout |
| 2 | -Vout |
| 3 | AC IN (L) |
| 4 | AC IN (N) |
| 5 | NC |

NC: Not connected

For DC Input:
Connect +Vin to N
Connect -Vin to L