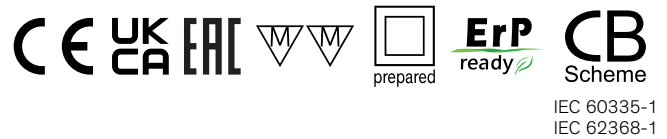


- High efficiency switching power supplies
- Easy installation into standard flush boxes
- Fully encapsulated plastic housing
- Dust and waterproof to IP 67
- Protection class II
- Safety approval to IEC/EN 62368-1, EN 50178, IEC/EN 60335-1
- Approved for mounting onto wood or materials with unknown flammability
- Ready to meet ErP directive
- Universal input range 90 to 264 VAC
- Regulated output voltage
- 3-year product warranty



The TIW series is a new range of small size DC-power supplies which have been designed particularly for applications in home and office installations. The compact module cases fit in the standardized in-wall flush boxes or also can be mounted on walls. The power supplies fully comply with the safety and EMC standards requested for commercial and residential class II installations. Typical applications are powering of electric devices used in home automation and in security systems like e.g. controllers, indicators, etc.

| Models     |                   |                     |                     |                     |                 |
|------------|-------------------|---------------------|---------------------|---------------------|-----------------|
| Order Code | Output Power max. | Output Voltage nom. | Output Current max. | Output Current peak | Efficiency typ. |
| TIW 12-112 | 12 W              | 12 VDC              | 1'000 mA            | 1'300 mA            | 79 %            |
| TIW 12-115 |                   | 15 VDC              | 800 mA              | 1'040 mA            | 80 %            |
| TIW 12-124 |                   | 24 VDC              | 500 mA              | 650 mA              | 81 %            |

## Input Specifications

|                        |                           |                                                                                                     |
|------------------------|---------------------------|-----------------------------------------------------------------------------------------------------|
| Input Voltage          | - AC Range                | Operational Range: 90 - 264 VAC (Full Range)<br>Rated Range: 100 - 240 VAC (Full Range)             |
|                        | - DC Range                | Operational Range: 130 - 375 VDC (Designed for, no certification)<br>Polarity: +DC: L / -DC: N      |
| Input Frequency        |                           | Operational Range: 47 - 63 Hz                                                                       |
|                        |                           | Certified: 50/60 Hz                                                                                 |
| Power Consumption      | - No load & Vin = 230 VAC | 300 mW max. (Ready to meet ErP directive)                                                           |
|                        | - No load & Vin = 115 VAC | 300 mW max.                                                                                         |
| Input Inrush Current   | - At 230 VAC              | 24 A max.                                                                                           |
|                        | - At 115 VAC              | 12 A max.                                                                                           |
| Recommended Input Fuse |                           | 6'000 mA (slow blow)<br>(The need of an external fuse has to be assessed in the final application.) |

## Output Specifications

|                                        |                                 |                                                                                                       |
|----------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------|
| Voltage Set Accuracy                   |                                 | ±3% max.                                                                                              |
| Regulation                             | - Input Variation (Vmin - Vmax) | 1% max.                                                                                               |
|                                        | - Load Variation (0 - 100%)     | 2% max.                                                                                               |
| Boost Power                            |                                 | Output Current peak: See model table<br>Peak power time: 10 s max.<br>Peak power duty cycle: 10% max. |
| Ripple and Noise<br>(20 MHz Bandwidth) |                                 | 200 mVp-p max.                                                                                        |
| Minimum Load                           |                                 | Not required                                                                                          |
| Hold-up Time                           | - At 230 VAC                    | 20 ms min.                                                                                            |
|                                        | - At 115 VAC                    | 3 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              |                                 | 600% max. of Iout max.                                                                                |

## Safety Specifications

|           |                             |                                                                                                                |
|-----------|-----------------------------|----------------------------------------------------------------------------------------------------------------|
| Standards | - IT / Multimedia Equipment | EN 60950-1<br>EN 62368-1<br>IEC 60950-1<br>IEC 62368-1                                                         |
|           | - Household                 | EN 60335-1<br>IEC 60335-1                                                                                      |
|           | - Power Installation        | EN 50178<br>IEC 62103                                                                                          |
|           | - LED Modules Controlgear   | EN 61347-1<br>EN 61347-2-13                                                                                    |
|           | - Luminaires for Furniture  | VDE 0710-14                                                                                                    |
|           | - Power Transformers        | EN 61558-1<br>EN 61558-2-8<br>EN 61558-2-16                                                                    |
|           | - Certification Documents   | <a href="http://www.tracopower.com/overview/tiw12">www.tracopower.com/overview/tiw12</a>                       |
|           | Protection Class            | Class I & II (Prepared): Reinforced Insulation                                                                 |
|           | See application note:       | <a href="http://www.tracopower.com/info/protection-class.pdf">www.tracopower.com/info/protection-class.pdf</a> |
|           | Class 2 Power Units         | UL 1310                                                                                                        |

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

## EMC Specifications

|                                |                           |                                                                                                                                                                                   |
|--------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EMI (Emissions)</b>         |                           | EN 61000-6-3 (Generic Residential)                                                                                                                                                |
| - Conducted Emissions          |                           | EN 55014-1 (internal filter)<br>EN 55032 class A (internal filter)<br>EN 55032 class B (internal filter)                                                                          |
| - Radiated Emissions           |                           | EN 55014-1 (internal filter)<br>EN 55032 class A (internal filter)<br>EN 55032 class B (internal filter)                                                                          |
| - Harmonic Current Emissions   |                           | EN 61000-3-2, class A                                                                                                                                                             |
| <b>EMS (Immunity)</b>          |                           | EN 61000-6-2 (Generic Industrial)<br>EN 61204-3 (Low Voltage Power Supplies)                                                                                                      |
| - Electrostatic Discharge      | Air:                      | EN 61000-4-2, $\pm 8$ kV, perf. criteria B                                                                                                                                        |
|                                | Contact:                  | EN 61000-4-2, $\pm 4$ kV, perf. criteria B<br>EN 61000-4-3, 3 V/m, perf. criteria A<br>EN 61000-4-4, $\pm 0.5$ kV, perf. criteria A<br>EN 61000-4-4, $\pm 2$ kV, perf. criteria B |
| - RF Electromagnetic Field     | L to L:                   | EN 61000-4-5, $\pm 1$ kV, perf. criteria A                                                                                                                                        |
| - EFT (Burst) / Surge          |                           | EN 61000-4-6, 3 Vrms, perf. criteria A                                                                                                                                            |
| - Conducted RF Disturbances    | 230 VAC / 50 Hz:          | EN 61000-4-11<br>30%, 0.5 periods, perf. criteria A<br>60%, 5 periods, perf. criteria B                                                                                           |
| - Voltage Dips & Interruptions | 115 VAC / 60 Hz:          | EN 61000-4-11<br>30%, 0.5 periods, perf. criteria B<br>60%, 5 periods, perf. criteria B                                                                                           |
| <b>EMC / Environmental</b>     | - Certification Documents | <a href="http://www.tracopower.com/overview/tiw12">www.tracopower.com/overview/tiw12</a>                                                                                          |

## General Specifications

|                                                 |                         |                                                                                                                                                                          |
|-------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Relative Humidity</b>                        |                         | 100% max.                                                                                                                                                                |
| <b>Temperature Ranges</b>                       | - Operating Temperature | -25°C to +50°C (without derating)<br>(Please take heat sources (such as lamps) nearby into consideration for ambient temperature of the power supply.)                   |
| <b>Power Derating</b>                           | - Low Input Voltage     | 0.45 %/V below 187 VAC (down to 132 VAC)<br>0.67 %/V below 115 VAC (down to 90 VAC)<br>0.3 %/V below 224 VDC (down to 142 VDC)<br>0.5 %/V below 120 VDC (down to 90 VDC) |
| <b>Over Temperature</b>                         | - Protection Mode       | 140°C typ. (Automatic recovery)                                                                                                                                          |
| <b>Protection Switch Off</b>                    | - Measurement Point     | Internal IC temperature                                                                                                                                                  |
| <b>Cooling System</b>                           |                         | Natural convection (20 LFM)                                                                                                                                              |
| <b>Altitude During Operation</b>                |                         | 3'000 m max.                                                                                                                                                             |
| <b>Insulation System</b>                        |                         | Reinforced Insulation                                                                                                                                                    |
| <b>Isolation Test Voltage</b>                   | - Input to Output, 60 s | 3'000 VAC                                                                                                                                                                |
| <b>Leakage Current</b><br>(at 254.4 VAC / 60Hz) | - Touch Current         | 0.25 mA max.                                                                                                                                                             |
| <b>Reliability</b>                              | - Calculated MTBF       | (Please refer to application-note.)                                                                                                                                      |
| <b>Environment</b>                              | - Vibration             | IEC 60068-2-6<br>5 g, 3 axis, sine sweep, 60-500 Hz                                                                                                                      |
|                                                 | - Mechanical Shock      | IEC 60068-2-27<br>50 g, 3 axis, half sine, 11 ms                                                                                                                         |
| <b>Case Ingress Protection</b>                  |                         | IP 67 (acc. IEC 60529)                                                                                                                                                   |
| <b>Housing Material</b>                         |                         | Plastic (UL 94 V-0 rated)                                                                                                                                                |
| <b>Potting Material</b>                         |                         | Epoxy (UL 94 V-0 rated) (variant 1)<br>Polyurethane (UL 94 V-2 rated) (variant 2)                                                                                        |
| <b>Housing Type</b>                             |                         | Plastic Case                                                                                                                                                             |
| <b>Mounting Type</b>                            |                         | Chassis Mount                                                                                                                                                            |
| <b>Connection Type</b>                          |                         | Flying Leads                                                                                                                                                             |
| <b>Weight</b>                                   |                         | 80 g                                                                                                                                                                     |

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Environmental Compliance - REACH Declaration

[www.tracopower.com/info/reach-declaration.pdf](http://www.tracopower.com/info/reach-declaration.pdf)

- RoHS Declaration

REACH SVHC list compliant

REACH Annex XVII compliant

[www.tracopower.com/info/rohs-declaration.pdf](http://www.tracopower.com/info/rohs-declaration.pdf)

Exemptions: 7(a), 7(c)-I

(RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).)

- SCIP Reference Number

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### Additional Information

Supporting Documents

[www.tracopower.com/overview/tiw12](http://www.tracopower.com/overview/tiw12)

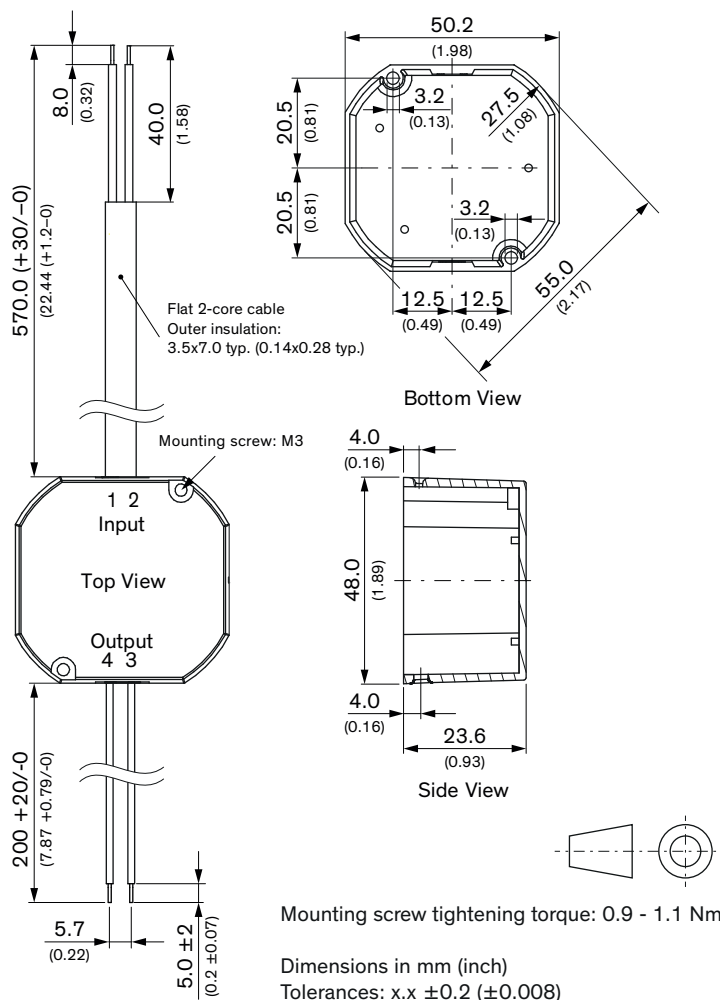
Frequently Asked Questions

[www.tracopower.com/glossary-faq](http://www.tracopower.com/glossary-faq)

Glossary

[www.tracopower.com/info/glossary.pdf](http://www.tracopower.com/info/glossary.pdf)

### Outline Dimensions



| Pinout |          |       |                             |
|--------|----------|-------|-----------------------------|
| Pin    | Function | Color | Type                        |
| 1      | AC (N)   | White | 18AWG / 0.82mm <sup>2</sup> |
| 2      | AC (L)   | Black | 18AWG / 0.82mm <sup>2</sup> |
| 3      | - Vout   | Black | 20AWG / 0.52mm <sup>2</sup> |
| 4      | + Vout   | Red   | 20AWG / 0.52mm <sup>2</sup> |