

- 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



UL 60950-1 IEC 60335-1  
IEC 62368-1

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.	Efficiency typ.
TIW 24-112	24 W	12 VDC	2'000 mA	83 %
TIW 24-124		24 VDC	1'000 mA	85 %

### Input Specifications

Input Voltage	- AC Range	Operational Range: <b>90 - 264 VAC</b> (Full Range) Rated Range: <b>100 - 240 VAC</b> (Full Range)
	- DC Range	Operational Range: <b>90 - 370 VDC</b> (Designed for, no certification) Polarity: <b>+DC: L / -DC: N</b>
Input Frequency		Operational Range: <b>47 - 63 Hz</b> Certified: <b>50/60 Hz</b>
Power Consumption	- No load & Vin = 230 VAC - No load & Vin = 115 VAC	<b>300 mW max.</b> (Ready to meet ErP directive) <b>300 mW max.</b>
Input Inrush Current	- At 230 VAC - At 115 VAC	<b>24 A max.</b> <b>12 A max.</b>
Recommended Input Fuse		<b>6'000 mA</b> (slow blow) (The need of an external fuse has to be assessed in the final application.)

### Output Specifications

Voltage Set Accuracy		<b>±3% max.</b>
Regulation	- Input Variation (Vmin - Vmax) - Load Variation (0 - 100%)	<b>1% max.</b> <b>2% max.</b>
Ripple and Noise (20 MHz Bandwidth)		<b>200 mVp-p max.</b>
Minimum Load		<b>Not required</b>
Hold-up Time	- At 230 VAC - At 115 VAC	<b>20 ms min.</b> <b>5 ms min.</b>
Start-up Time	- At 230 VAC - At 115 VAC	<b>1'000 ms max.</b> <b>1'000 ms max.</b>
Short Circuit Protection		<b>Continuous, Automatic recovery</b>
Output Current Limitation		<b>250% max. of Iout max.</b>

### Safety Specifications

Safety Standards	- IT / Multimedia Equipment  - Household  - Power Installation  - LED Modules Controlgear  - Luminaires for Furniture - Power Transformers  - Certification Documents	EN 60950-1 EN 62368-1 IEC 60950-1 IEC 62368-1 UL 60950-1 EN 60335-1 IEC 60335-1 EN 50178 IEC 62103 EN 61347-1 EN 61347-2-13 VDE 0710-14 EN 61558-1 EN 61558-2-8 EN 61558-2-16 <a href="http://www.tracopower.com/overview/tiw24">www.tracopower.com/overview/tiw24</a>
Protection Class		<b>Class I &amp; II (Prepared): Reinforced Insulation</b>
Class 2 Power Units		<b>UL 1310</b>

All specifications valid at nominal voltage, 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)
- Radiated Emissions		EN 55032 class B (internal filter)
		EN 55014-1 (internal filter)
- Harmonic Current Emissions		EN 55032 class B (internal filter)
		EN 61000-3-2, class A
<b>EMS Immunity</b>		EN 61000-6-2 (Generic Industrial)
- Electrostatic Discharge		EN 61204-3 (Low Voltage Power Supplies)
	Air:	EN 61000-4-2, $\pm 8$ kV, perf. criteria B
	Contact:	EN 61000-4-2, $\pm 4$ kV, perf. criteria B
- RF Electromagnetic Field		EN 61000-4-3, 3 V/m, perf. criteria A
- EFT (Burst) / Surge		EN 61000-4-4, $\pm 0.5$ kV, perf. criteria A
		EN 61000-4-4, $\pm 2$ kV, perf. criteria B
	L to L:	EN 61000-4-5, $\pm 1$ kV, perf. criteria A
- Conducted RF Disturbances		EN 61000-4-6, 3 Vrms, perf. criteria A
- Voltage Dips & Interruptions	230 VAC / 50 Hz:	EN 61000-4-11
		30%, 0.5 periods, perf. criteria A
		60%, 5 periods, perf. criteria B
	115 VAC / 60 Hz:	EN 61000-4-11
		30%, 0.5 periods, perf. criteria B
		60%, 5 periods, perf. criteria B

## General Specifications

<b>Relative Humidity</b>		100% max.
<b>Temperature Ranges</b>	- Operating Temperature	-25°C to +50°C (without derating) (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) 1.5 %/V below 100 VAC (down to 90 VAC) 0.3 %/V below 224 VDC (down to 142 VDC) 0.5 %/V below 120 VDC (down to 90 VDC)
<b>Over Temperature Protection Switch Off</b>	- Protection Mode - Measurement Point	140°C typ. (Automatic recovery) 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> (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  - Mechanical Shock	IEC 60068-2-6 5 g, 3 axis, sine sweep, 60-500 Hz IEC 60068-2-27 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) 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>		100 g

All specifications valid at nominal voltage, 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: 7a, 7c-I

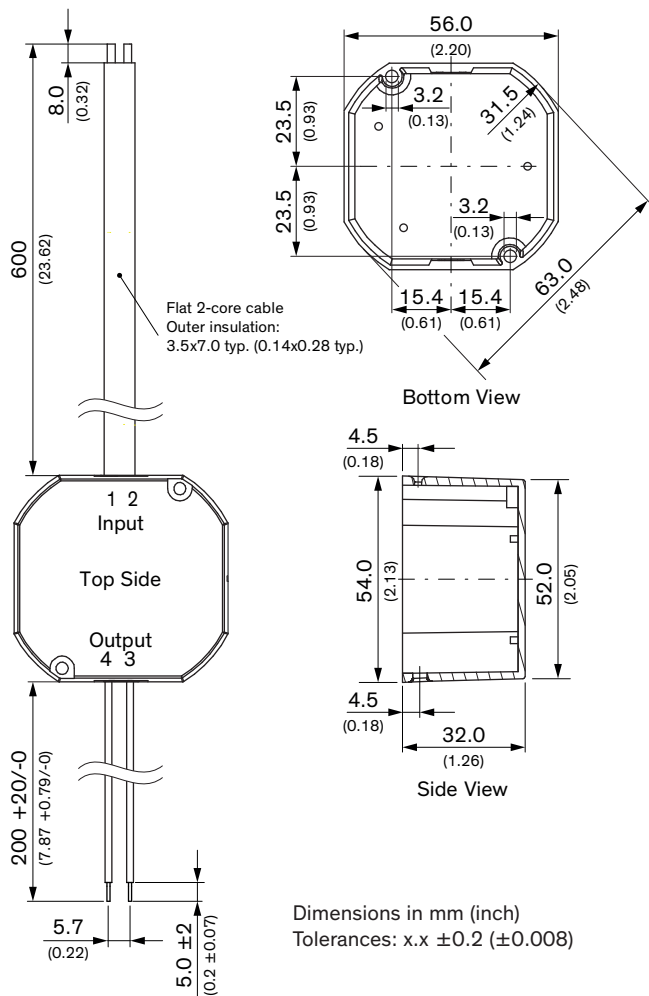
(RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).  
The SCIP number is provided on request.)

### Supporting Documents

Overview Link (for additional Documents)

[www.tracopower.com/overview/tiw24](http://www.tracopower.com/overview/tiw24)

### 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>