

- 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 60950-1, 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



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	90 - 264 VAC (Full Range)
	- DC Range	90 - 370 VDC (Designed for, no certification)
Input Frequency		47 - 63 Hz
Power Consumption	- At no load	300 mW max. (Ready to meet ErP directive)
Input Inrush Current	- At 230 VAC	24 A max.
	- At 115 VAC	12 A max.
Recommended Input Fuse		6000 mA (slow blow) (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.
Ripple and Noise (20 MHz Bandwidth)		200 mVp-p max.
Minimum Load		Not required
Hold-up Time	- At 230 VAC	20 ms min.
	- At 115 VAC	5 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		250% max. of Iout max.

### Safety Specifications

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

### EMC Specifications

EMI Emissions	- Conducted Emissions	EN 61000-6-3 (Generic Residential) EN 55014-1 (internal filter) EN 55032 class B (internal filter)
	- Radiated Emissions	EN 55014-1 (internal filter) EN 55032 class B (internal filter)
	- Harmonic Current Emissions	EN 61000-3-2, class A

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

<b>EMS Immunity</b>		EN 61000-6-2 (Generic Industrial) EN 61204-3 (Low Voltage Power Supplies)
- Electrostatic Discharge	Air:	EN 61000-4-2, $\pm 8$ kV, perf. criteria B
- RF Electromagnetic Field	Contact:	EN 61000-4-2, $\pm 4$ kV, perf. criteria B
- EFT (Burst) / Surge		EN 61000-4-3, 3 V/m, perf. criteria A
		EN 61000-4-4, $\pm 0.5$ kV, perf. criteria A
		EN 61000-4-4, $\pm 2$ kV, perf. criteria B
- Conducted RF Disturbances	L to L:	EN 61000-4-5, $\pm 1$ kV, perf. criteria A
- Voltage Dips & Interruptions		EN 61000-4-6, 3 Vrms, perf. criteria A
	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 <small>(Please take heat sources (such as lamps) nearby into consideration for ambient temperature of the power supply.)</small>
<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> <small>(at 254.4 VAC / 60Hz)</small>	- Touch Current	0.25 mA max.
<b>Reliability</b>	- Calculated MTBF	<small>(Please refer to application-note.)</small>
<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>Connection Type</b>		Wired
<b>Weight</b>		100 g
<b>Environmental Compliance</b>	- Reach - RoHS	<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a> <a href="http://www.tracopower.com/info/rohs-declaration.pdf">www.tracopower.com/info/rohs-declaration.pdf</a>

## Supporting Documents

<b>Overview Link</b> (for additional Documents)	<a href="http://www.tracopower.com/overview/tiw24">www.tracopower.com/overview/tiw24</a>
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**Outline Dimensions**

