TRACO POWER

AC/DC Power Supply

TMPS 15 Series, 15 Watt

- **Fully encapsulated 1.07” x 2.06” x 0.93” package**
- **ErP-ready (<100 mW 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 30 s)**
- **Integrated class B EMI filter**
- **3000 VAC I/O isolation (reinforced)**
- **Protection class II prepared**
- **3-year product warranty**

prepared

ErP ready

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

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 <100 mW, 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 make 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

on demand (backorder with MOQ non stocking item)	- Optional model with 3.3 VDC and 3'500 mA - Optional model with 9 VDC and 1'667 mA

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Input Specifications

Input Voltage	- AC Range	Operational Range:	85 - 264 VAC (Full Range)
		Rated Range:	100 - 240 VAC (Full Range)
	- DC Range	Operational Range:	120 - 370 VDC (Designed for, no certification)
		Polarity:	irrelevant
Input Frequency		Operational Range:	47 - 440 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		100 mW max.
Input Current	- Full load & Vin = 230 VAC		200 mA max.
	- Full load & Vin = 115 VAC		300 mA max.
Input Inrush Current	- At 230 VAC		45 A max.
	- At 115 VAC		25 A max.
Recommended Input Fuse			(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)		0.5% max.
	- Load Variation (0 - 100%)		1% max.
Boost Power			Output Current peak: See model table Peak power time: 30 s max. Peak power duty cycle: 10% max. Average operation power: 15 W max.
Ripple and Noise (20 MHz Bandwidth)		3.3 VDC model:	80 mVp-p max.
		5 VDC model:	80 mVp-p max.
		9 VDC model:	90 mVp-p max.
		12 VDC model:	120 mVp-p max.
		15 VDC model:	150 mVp-p max.
		24 VDC model:	240 mVp-p max.
		48 VDC model:	480 mVp-p max.
Capacitive Load		3.3 VDC model:	5'600 µF max.
		5 VDC model:	3'300 µF max.
		9 VDC model:	1'000 µF max.
		12 VDC model:	560 µF max.
		15 VDC model:	330 µF max.
		24 VDC model:	150 µF max.
		48 VDC model:	33 µF max.
Minimum Load			Not required
Temperature Coefficient			±0.02 %/K max.
Hold-up Time	- At 230 VAC		40 ms min.
	- At 115 VAC		8 ms min.
Start-up Time	- At 230 VAC		1'000 ms max.
Short Circuit Protection			Continuous, Automatic recovery
Output Current Limitation			150% typ. of Iout max. (Long term overload may cause damage)
Overvoltage Protection			125% typ. of Vout nom. (By Zener diode)

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

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Safety Specifications

Standards	- IT / Multimedia Equipment	EN 62368-1 IEC 62368-1 UL 62368-1
	- Household	EN 60335-1 IEC 60335-1
	- Power Transformers	EN 61558-2-16 IEC 61558-2-16
	- Certification Documents	www.tracopower.com/overview/tmps15
Protection Class		Class I & II (Prepared): Reinforced Insulation
	See application note:	www.tracopower.com/info/protection-class.pdf
Pollution Degree		PD 2
Over Voltage Category		OVC II

EMC Specifications

EMI (Emissions)	- Conducted Emissions		EN 55014-1 (internal filter) EN 55032 class A (internal filter) EN 55032 class B (internal filter)
	- Radiated Emissions		EN 55014-1 (internal filter) EN 55032 class A (internal filter) EN 55032 class B (internal filter)
	- Voltage Fluctuations & Flicker		EN 61000-3-3
EMS (Immunity)			EN 55024 (IT Equipment) EN 55035 (Multimedia) EN 55014-2 (Household Appliances Tools)
	- Electrostatic Discharge	Air:	EN 61000-4-2, ±8 kV, perf. criteria A
		Contact:	EN 61000-4-2, ±6 kV, perf. criteria A
	- RF Electromagnetic Field		EN 61000-4-3, 10 V/m, perf. criteria A
	- EFT (Burst) / Surge		EN 61000-4-4, ±2 kV, perf. criteria A
		L to L:	EN 61000-4-5, ±1 kV, perf. criteria A
	- Conducted RF Disturbances		EN 61000-4-6, 10 Vrms, perf. criteria A
	- PF Magnetic Field	Continuous:	EN 61000-4-8, 30 A/m, perf. criteria A
	- Voltage Dips & Interruptions	230 VAC / 50 Hz:	EN 61000-4-11 30%, 0.5 periods, perf. criteria A >95%, 0.5 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%, 0.5 periods, perf. criteria A >95%, 250 periods, perf. criteria B
EMC / Environmental	- Certification Documents		www.tracopower.com/overview/tmps15

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
	See application note:	www.tracopower.com/overview/tmps15
Cooling System		Natural convection (20 LFM)
Altitude During Operation		2'000 m max.
Regulator Topology		Flyback Converter
Switching Frequency		94 - 125 kHz (PFM) 115 kHz typ. (PFM)
Insulation System		Reinforced Insulation
Working Voltage (rated)		250 VAC
Isolation Test Voltage	- Input to Output, 60 s	3'000 VAC

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Isolation Resistance	- Input to Output, 500 VDC	1'000 MΩ min.
Reliability	- Calculated MTBF	430'000 h (MIL-HDBK-217F, ground benign)
Washing Process		Not allowed
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 (3 µm)
Pin Surface Plating		Tin (3 µm), matte
Housing Type		Plastic Case
Mounting Type		PCB Mount
Connection Type		THD (Through-Hole Device)
Soldering Profile		Lead-Free Wave Soldering 260°C / 4 s max.
Weight		60 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: 7(a) (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).)
	- SCIP Reference Number	c7f44eab-2160-4f74-b443-ba35500664d1

Additional Information

Supporting Documents	www.tracopower.com/overview/tmps15
Frequently Asked Questions	www.tracopower.com/glossary-faq
Glossary	www.tracopower.com/info/glossary.pdf

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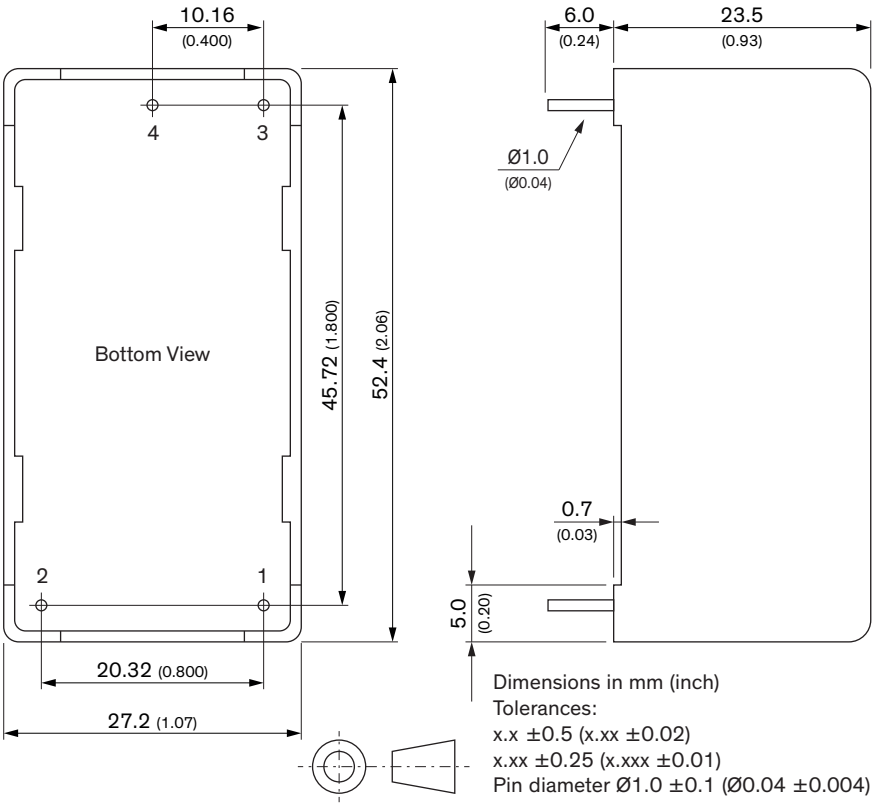
Outline Dimensions



Pinout	
Pin	**Function**
1	AC (N)
2	AC (L)
3	+Vout
4	–Vout

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