AC/DC Power Supply

- Compact PCB power module in 2.92" x 1.85" package
- Wide input voltage range 90-305 VAC
- Certified according to EN 60335-1 an 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 89%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 year product warranty





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

The TMPW 50 is a 50 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	Output Voltage	Output Current	Efficiency
	max.	nom.	max.	typ.
TMPW 50-112		12 VDC	4'167 mA	89 %
TMPW 50-115	50 W	15 VDC	3'333 mA	88 %
TMPW 50-124		24 VDC	2'083 mA	88 %

TMPW 50 Series, 50 Watt

Input Specification			
Input Voltage	- AC Range	1	90 - 305 VAC (Full Range)
		0	100 - 277 VAC (Full Range)
	- DC Range	Operational Range:	
		Certified Range:	100 - 250 VDC
		Polarity:	irrelevant
			(The rated range refers to 62368-1. For
			60335-1 certification the rated input voltage is
			100 - 240 VAC and DC input is not permitted.)
Input Frequency		Operational Range:	47 - 440 Hz
		Certified:	50/60 Hz
Input Current	- Full Load & Vin = 230 VAC		600 mA max.
	- Full Load & Vin = 115 VAC		1'000 mA max.
Power Consumption	- No load & Vin = 230 VAC		100 mW max. (Ready to meet ErP directive)
	- No load & Vin = 115 VAC		100 mW max.
Input Inrush Current	- At 230 VAC		90 A max.
	- At 115 VAC		45 A max.
Recommended Input Fu	se		2'500 mA (slow blow)
			(The need of an external fuse has to be assessed in the final application.)

Voltage Set Accuracy			±2% max.
Regulation	- Input Variation (Vmin - Vmax)		2% max.
	- Load Variation (0 - 100%)		2.5% max.
Ripple and Noise		12 VDC model:	120 mVp-p max. (w/ 0.1 μF // 47 μF)
(20 MHz Bandwidth)		15 VDC model:	150 mVp-p max. (w/ 0.1 μF // 47 μF)
		24 VDC model:	240 mVp-p max. (w/ 0.1 μF // 47 μF)
Capacitive Load		12 VDC model:	3'500 μF max.
		15 VDC model:	3'000 μF max.
		24 VDC model:	2'200 μF max.
Minimum Load			Not required
Temperature Coefficient			±0.05 %/K max.
Hold-up Time	- At 230 VAC		10 ms min.
Start-up Time	- At 230 VAC		130 ms max.
	- At 115 VAC		130 ms max.
Short Circuit Protection			Continuous, Automatic recovery
Output Current Limitation			130 - 215% of lout max.
Overvoltage Protection			105 - 145% of Vout nom.
			(By Zener diode)
Transient Response	- Response Deviation		2% typ. / 3% max. (50% to 75% Load Step)
	- Response Time		500 µs max. (50% to 75% Load Step)
Safety Specification	ons		
Safety Standards	- IT / Multimedia Equipment		EN 62368-1
			IEC 62368-1
			UL 62368-1
	- Household		EN 60335-1
			IEC 60335-1

- Power Transformers	IEC 60335-1 IEC 61558-1 IEC 61558-2-16
- Certification Documents	www.tracopower.com/overview/tmpw50
Protection Class	Class I & II (Prepared): Reinforced Insulation
Pollution Degree	PD 2
Over Voltage Category	OVC II

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

EMC Specificat	ions	
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

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
		See application note:	www.tracopower.com/overview/tmpw50
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			55 - 90 kHz (PWM, PFM)
Insulation System			Reinforced Insulation
Working Voltage (rated)			342 VAC
Isolation Test Voltage	- Input to Output, 60 s		4'000 VAC
Leakage Current	- Touch Current		250 µA max.
Reliability	- Calculated MTBF		300'000 h (MIL-HDBK-217F, ground benign)
Washing Process			Not allowed
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) (Hermetical sealed
			structure, dust-proof only non water-proof)
Pin Material			Brass
Pin Surface Plating			Tin (120 µm min.), matte
Housing Type			Plastic Case
Mounting Type			PCB Mount
Connection Type			THD (Through-Hole Device)
Weight			158 g

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

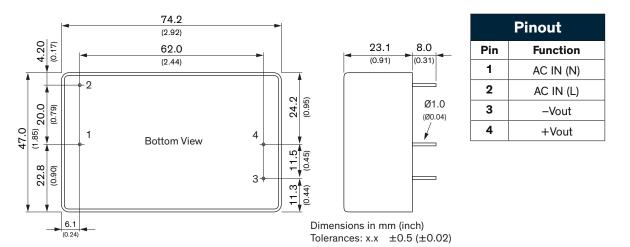
www.tracopower.com/overview/tmpw50

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
	(RoHS exemptions refer to the component
	concentration only, not to the overall
	concentration in the product (05A rule).
	The SCIP number is provided on request.)

Supporting Documents

Overview Link (for additional Documents)

Outline Dimensions



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