TRACO POWER

AC/DC Power Supply

TXH 240 Series, 240 Watt

- **Compact U-bracket power supplies with optional cover**
- **Universal input range 90 to 264 VAC**
- **4000 VAC I/O-isolation**
- **High efficiency up to 93 %**
- **Operating temperature range: –10°C to +70°C max.**
- **Features active power factor correction**
- **Short circuit and over voltage protection**
- **3-year product warranty**



UL 62368-1 IEC 62368-1

The TXH series is a family of power supplies in metal enclosure, designed for a wide range of cost critical applications. The very high efficiency of up to 93% admits of a compact design with free air convection cooling for the 120 and 240 Watt models. The units are equipped with screw terminal blocks and are easy to install in any equipment. These power supplies have universal input and comply with European EMC standards and the Low Voltage Directive (LVD).

Models

Order Code	Output Power max.	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TXH 240-112	240 W	12 VDC (11.4 - 12.6 VDC)	20'000 mA	90 %
TXH 240-124		24 VDC (22.8 - 25.2 VDC)	10'000 mA	92 %
TXH 240-148		48 VDC (45.6 - 50.4 VDC)	5'000 mA	93 %

Options

TXH 240-COV	- Optional Cover: www.tracopower.com/overview/txh240-cov

Input Specifications

Input Voltage	- AC Range	Operational Range:	90 - 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		2'500 mW max.
	- No load & Vin = 115 VAC		2'500 mW max.
Input Current	- Full load & Vin = 230 VAC		1'500 mA max.
	- Full load & Vin = 115 VAC		3'000 mA max.
Input Inrush Current	- At 230 VAC		60 A max.
	- At 115 VAC		30 A max.
Power Factor	- At 230 VAC		0.95 min. (Active Power Factor Correction)
	- At 115 VAC		0.98 min. (Active Power Factor Correction)
Input Protection			T 5 A / 250 VAC (Internal Fuse in L & N)
Recommended Input Fuse			(The need of an external fuse has to be assessed in the final application.)

Output Specifications

Output Voltage Adjustment			±5% (By trim potentiometer) Output power must not exceed rated power!
Voltage Set Accuracy			±2% max.
Regulation	- Input Variation (Vmin - Vmax)		1% max.
	- Load Variation (0 - 100%)		1% max.
Ripple and Noise (20 MHz Bandwidth)		12 VDC model:	120 mVp-p max. (w/ 0.1 µF || 47 µF)
		24 VDC model:	200 mVp-p max. (w/ 0.1 µF || 47 µF)
		48 VDC model:	200 mVp-p max. (w/ 0.1 µF || 47 µF)
Capacitive Load		12 VDC model:	23'000 µF max.
		24 VDC model:	10'000 µF max.
		48 VDC model:	470 µF max.
Minimum Load			2 % of Iout max.
Temperature Coefficient			±0.03 %/K max.
Hold-up Time	- At 230 VAC		10 ms min.
	- At 115 VAC		10 ms min.
Start-up Time	- At 230 VAC		750 ms max.
	- At 115 VAC		250 ms max.
Short Circuit Protection			Automatic recovery
Output Current Limitation			160 - 240% of Iout max.
Overvoltage Protection			105 - 145% of Vout nom. (By Zener diode)
Transient Response	- Response Deviation		2% max. (75% to 100% Load Step)
	- Response Time		500 µs typ. (75% to 100% Load Step)

Safety Specifications

Standards	- IT / Multimedia Equipment		EN 60950-1 EN 62368-1 IEC 60950-1 IEC 62368-1 UL 60950-1 UL 62368-1
	- Certification Documents		www.tracopower.com/txh240-safety-cert
Protection Class			Class I (Prepared): Connection to PE
		See application note:	www.tracopower.com/info/protection-class.pdf
Energy Source	- Output, acc. to 62368-1		ES1
Power Source	- Output, acc. to 62368-1		PS3

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

Pollution Degree			PD 2
Over Voltage Category			OVC II

EMC Specifications

EMI (Emissions)	- Conducted Emissions		EN 55032 class A (internal filter)
			EN 55032 class B (internal filter)
	- Radiated Emissions		EN 55032 class A (internal filter)
			EN 55032 class B (internal filter)
	- Harmonic Current Emissions		EN 61000-3-2, class D
	- 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
		L to PE:	EN 61000-4-5, ±2 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 C
			>95%, 0.5 periods, perf. criteria B
			>95%, 25 periods, perf. criteria C
EMC / Environmental	- Certification Documents		www.tracopower.com/txh240-emc-cert

General Specifications

Relative Humidity			95% max. (non condensing)
Temperature Ranges	- Operating Temperature		−10°C to +70°C
	- Storage Temperature		−25°C to +85°C
Power Derating	- High Temperature		2.5 %/K above 50°C
	- Low Input Voltage		Depending on model
		See application note:	www.tracopower.com/txh240-cc
Cooling System			Natural convection (20 LFM)
Altitude During Operation			4'000 m max.
Switching Frequency			70 - 200 kHz (PWM)
			100 kHz typ. (PWM)
Insulation System			Reinforced Insulation
Working Voltage (rated)			251 VAC
Isolation Test Voltage	- Input to Output, 60 s		4'000 VAC
	- Input to Case or PE, 60 s		2'000 VAC
	- Output to Case or PE, 60 s		500 VAC
Creepage	- Input to Output		5 mm min.
Clearance	- Input to Output		4 mm min.
Leakage Current	- Earth Leakage Current		2400 µA max.
	- Touch Current		500 µA max.
Reliability	- Calculated MTBF		120'000 h (MIL-HDBK-217F, ground benign)
Environment	- Vibration		2 g, 3 axis, 60 min, 10-500 Hz, 10 min/cycle
Housing Type			Open Frame, U-Bracket
Mounting Type			Chassis Mount
Connection Type			Screw Terminal
Weight			580 g

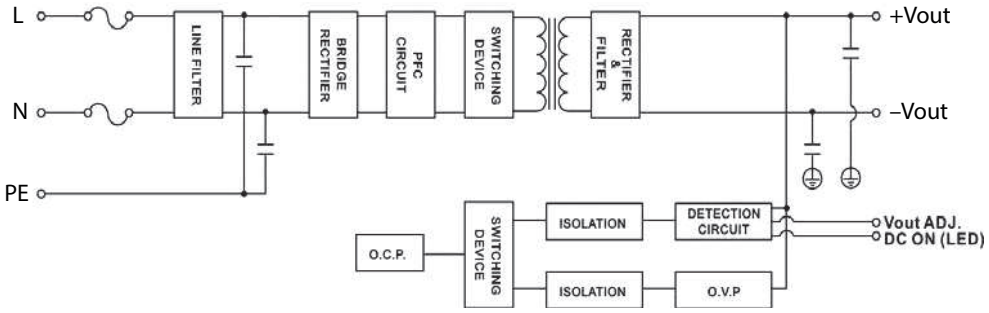
All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Environmental Compliance	- REACH Declaration	www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant
	- RoHS Declaration	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	bf13b367-88e2-480e-86d2-bb14ffda4807

Additional Information

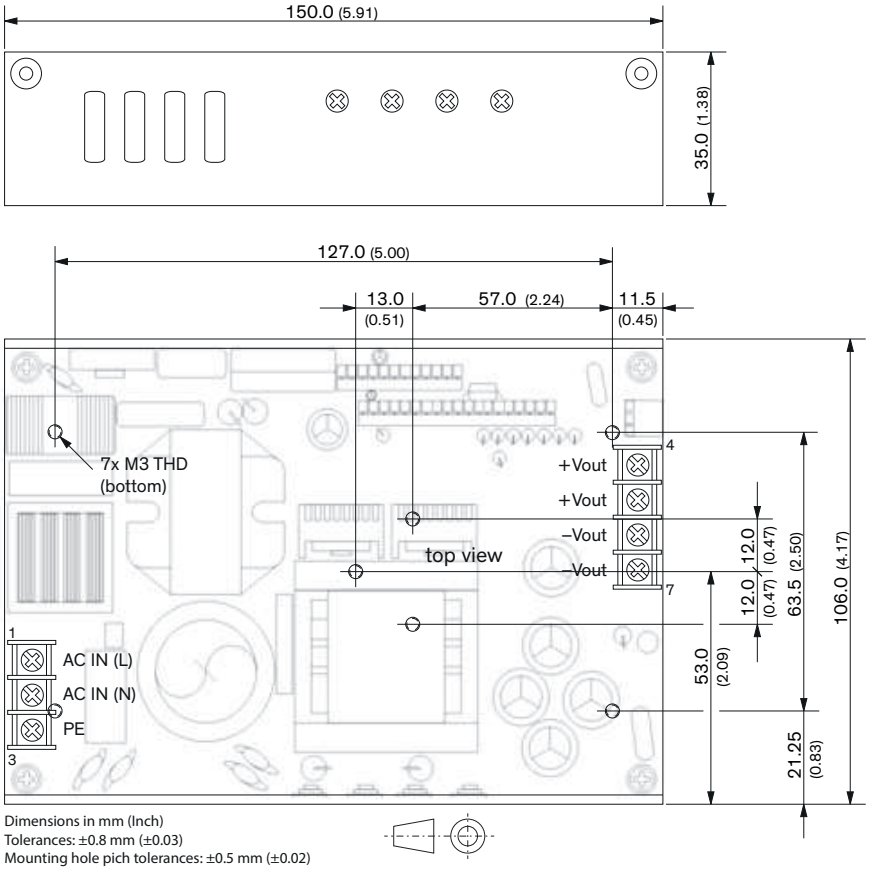
Supporting Documents	www.tracopower.com/overview/txh240
Frequently Asked Questions	www.tracopower.com/glossary-faq
Glossary	www.tracopower.com/info/glossary.pdf

Blockdiagram



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

Outline Dimensions



Dimensions in mm (Inch)
Tolerances: ±0.8 mm (±0.03)
Mounting hole pich tolerances: ±0.5 mm (±0.02)
Mounting screw locked torque: max. 5 Nm (0.49 kgfcm)
Max mounting screw penetration: 2.5 mm (0.10)

Pin Connections	
Pin	**Function**
1	AC IN (L)
2	AC IN (N)
3	PE
4, 5	+Vout
6, 7	–Vout

Mounting screw locked torque:
0.29 Nm (3 kgfcm)

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