

AC/DC Power Supply

TXH 480 Series, 480 Watt

End of life

- Compact enclosed power supplies
- Screw terminal block
- Very high efficiency up to 91 %
- Universal input 90 – 264 VAC
- Adjustable output voltage
- EMI/EMC compliance with EN 61000-6-3 and EN 61000-6-1
- Compliance to EN 61000-3-2 (PFC)
- Current limitation and short circuit, over voltage and over temperature protection
- 3-year product warranty



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 480-112 *	480 W	12 VDC (10.8 - 13.2 VDC)	40'000 mA	88 %
TXH 480-124 *		24 VDC (21.6 - 26.4 VDC)	20'000 mA	90 %
TXH 480-148 *		48 VDC (43.2 - 50.4 VDC)	10'000 mA	91 %

Note * End of life

Input Specifications

Input Voltage	- AC Range	Operational Range: 90 - 264 VAC (Full Range)
	- DC Range	Operational Range: 120 - 370 VDC (Designed for, no certification)
Input Frequency		Operational Range: 47 - 440 Hz Certified: 50/60 Hz
Power Consumption	- No load & Vin = 230 VAC	2'500 mW max.
Input Current	- Full load & Vin = 230 VAC	3'000 mA max.
	- Full load & Vin = 115 VAC	5'500 mA max.
Input Inrush Current	- At 230 VAC	70 A max.
	- At 115 VAC	50 A max.
Power Factor	- At 230 VAC	0.9 min. (Active Power Factor Correction)
	- At 115 VAC	0.95 min. (Active Power Factor Correction)
Input Protection		T 10 A / 250 VAC
Recommended Input Fuse		(The need of an external fuse has to be assessed in the final application.)

Output Specifications

Output Voltage Adjustment		12 VDC model: 10.8 - 13.2 VDC
		24 VDC model: 21.6 - 26.4 VDC
		48 VDC model: 43.2 - 50.4 VDC
		(By trim potentiometer) Output power must not exceed rated power!
Voltage Set Accuracy		±2% max.
Regulation	- Input Variation (Vmin - Vmax)	0.5% max.
	- Load Variation (0 - 100%)	1% max.
Ripple and Noise (20 MHz Bandwidth)	12 VDC model:	100 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:	300 mVp-p max. (w/ 0.1 µF 47 µF)
Capacitive Load	12 VDC model:	180'000 µF max.
	24 VDC model:	75'000 µF max.
	48 VDC model:	25'000 µF max.
Minimum Load		5 % 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	500 ms max.
	- At 115 VAC	500 ms max.
Short Circuit Protection		Automatic recovery
Output Current Limitation		110 - 160% 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 IEC 60950-1 UL 60950-1
	- Certification Documents	www.tracopower.com/overview/txh480
Protection Class		Class I (Prepared): Connection to PE
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 Specifications

EMI Emissions	- Conducted Emissions	EN 55032 class B (internal filter)
	- Radiated Emissions	EN 55032 class B (internal filter)
	- Harmonic Current Emissions	EN 61000-3-2, class A
	- Voltage Fluctuations & Flicker	EN 61000-3-3
EMS Immunity		EN 55024 (IT Equipment)
	- Electrostatic Discharge	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, ±2 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 A
	>95%, 0.5 periods, perf. criteria A	
	>95%, 250 periods, perf. criteria B	

General Specifications

Relative Humidity		95% max. (non condensing)
Temperature Ranges	- Operating Temperature	-20°C to +70°C
	- Storage Temperature	-25°C to +85°C
Power Derating	- High Temperature	2.5 %/K above 50°C (all models) 2.0 %/K below 5°C (for 12 VDC model)
	- Low Input Voltage	1 %/V below 100 VAC
	See application note:	www.tracopower.com/overview/txh480
Over Temperature Protection Switch Off	- Protection Mode	Automatic recovery
Cooling System		Forced air cooling (with internal fan)
Fan Power Source	- Characteristic	Variable fan speed (temperature regulated)
	- Output Voltage	12 VDC
	- Output Current	500 mA max.
Standby Power Source	- Output Voltage	5 VDC
	- Output Current	600 mA max.
Remote Control	- Voltage Controlled Remote (passive = on)	On: open circuit Off: short circuit Refers to '+Remote' and '-Remote' Pin
	Altitude During Operation	2'000 m max.
Switching Frequency		60 - 280 kHz (PWM) 63 kHz typ. (PWM)
Insulation System		Reinforced Insulation
Working Voltage (rated)		310 VAC
Isolation Test Voltage	- Input to Output, 60 s	3'000 VAC
	- Input to Case or PE, 60 s	1'500 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	1100 µA max.
	- Touch Current	500 µA max.
Reliability	- Calculated MTBF	100'000 h (MIL-HDBK-217F, ground benign)
Environment	- Vibration	2 g, 3 axis, 60 min, 10-500 Hz, 10 min/cycle
Housing Type		Metal Case
Mounting Type		Chassis Mount
Connection Type		Screw Terminal
Weight		1'050 g

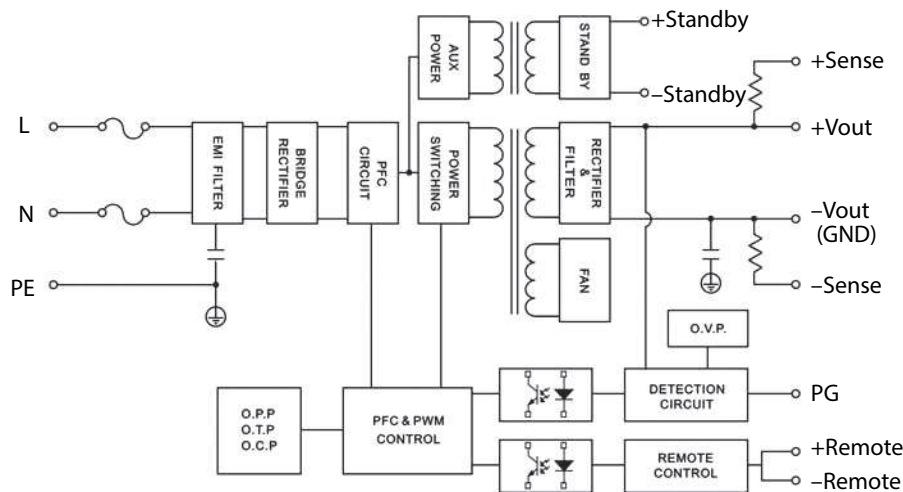
All specifications valid at nominal voltage, resistive full load and +25°C after warm-up time, unless otherwise stated.

Power OK Signal	<ul style="list-style-type: none"> - Power OK - Power Off - Active Output Signal 	<p>Voltage source output</p> <p>High level</p> <p>Low level</p> <p>(Refers to 'PG' and 'GND' Pin)</p> <p>12 VDC model: 5 VDC ±1 VDC</p> <p>24 VDC model: 5 VDC ±1 VDC</p> <p>48 VDC model: 5 VDC ±1 VDC</p> <p>Low output signal: 0 - 1 VDC</p>
Environmental Compliance	<ul style="list-style-type: none"> - REACH Declaration - RoHS Declaration - SCIP Reference Number 	<p>www.tracopower.com/info/reach-declaration.pdf</p> <p>REACH SVHC list compliant</p> <p>REACH Annex XVII compliant</p> <p>Exemptions: 7c-I</p> <p>(RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule.))</p> <p>fc39646a-2f4b-4509-96b6-89da2b78335c</p>

Supporting Documents

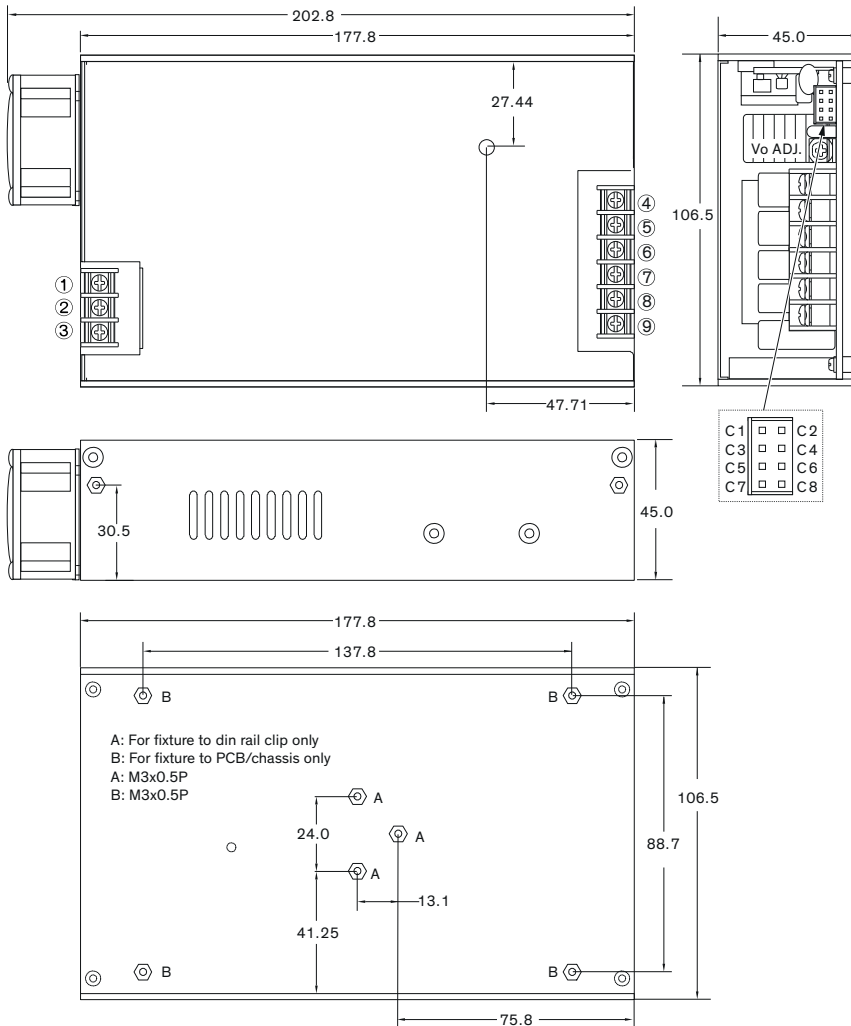
Overview Link (for additional Documents) www.tracopower.com/overview/txh480

Blockdiagram



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

Outline Dimensions



Input	
Pin	Function
1	AC IN (N)
2	AC IN (L)
3	PE

Output	
Pin	Function
4 - 6	+Vout
7 - 9	-Vout

Auxillary	
Pin	Function
C1	+Sense
C2	-Sense
C3	+Remote
C4	-Remote
C5	PG
C6	GND
C7	+Standby
C8	-Standby

Dimensions in mm, () = inch
 Tolerances: ± 0.5 mm (± 0.02)
 Pin tolerances: ± 0.1 mm

Mounting/locking kit should not be screwed in more than 2mm.

Mating connector:
 Housing: JST PHDR-08VS
 Crimp: JST SPHD-002T-P0.5

Connection cable with 500mm flying leads included!