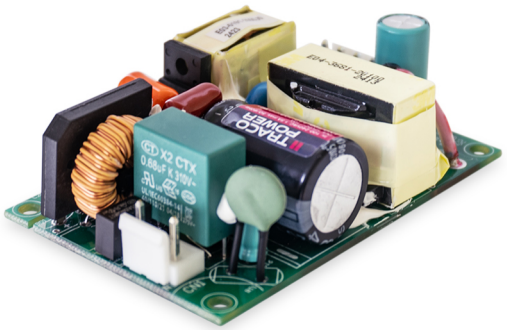
TRACO POWER

AC/DC Industrial Power Supply

TXO 120 Series, 120 Watt

- **Compact open frame power supply with pin connectors**
- **Universal input range 90 to 264 VAC**
- **Convection cooled (no-fan)**
- **Operating temperature range: -20°C to +70°C**
- **Internal EN55032 class B filter**
- **Short circuit, overvoltage and overload protection**
- **IEC/EN/UL 62368-1 safety approvals**
- **Compliance to EN 61000-3-2**
- **3-year product warranty**



UL 62368-1 IEC 62368-1

The TXO 120 is a compact 120 Watt AC/DC open frame module with reinforced I/O isolation designed for a wide range of cost sensitive applications. Excellent temperature behaviour allows the TXO 120 to deliver 100 Watt up to +50°C with convection cooling and 120 Watt up to +50°C with forced air cooling, while going up to +70°C with derating. The TXO 120 series features short circuit protection, over current limitation and overvoltage protection and complies with European EMC standards and the Low Voltage Directive (LVD).

Models

Order Code	Output Power max.	Output Voltage nom.	Output Current max. (Forced air cooling)	Output Current max. (Natural convection)	Efficiency typ.
TXO 120-112-J	120 W	12 VDC	10'000 mA	8'330 mA	92 %
TXO 120-115-J		15 VDC	8'000 mA	6'660 mA	92 %
TXO 120-124-J		24 VDC	5'000 mA	4'160 mA	92 %
TXO 120-148-J		48 VDC	2'500 mA	2'080 mA	92 %

Options

TCI 130-DC	- Optional Cable: www.tracopower.com/overview/tci130-dc
TCI-AC1	- Optional Cable: www.tracopower.com/overview/tci-ac1
on demand (backorder with MOQ non stocking item)	- Optional model with 36 VDC and 3'330 mA - Optional model with 56 VDC and 2'140 mA

Note - Total output power must not exceed 100 W for convection cooling applications

Input Specifications

Input Voltage		Operational Range:	90 - 264 VAC (Full Range)
		Rated Range:	100 - 240 VAC (Full Range)
Input Frequency		Operational Range:	47 - 63 Hz
		Certified:	50/60 Hz
Power Consumption	- No load & Vin = 230 VAC		150 mW max.
	- No load & Vin = 115 VAC		150 mW max.
Input Current	- Full load & Vin = 230 VAC		650 mA max.
	- Full load & Vin = 115 VAC		1'200 mA max.
Input Inrush Current	- At 230 VAC		100 A max.
	- At 115 VAC		60 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 3.15 A / 250 VAC (Internal Fuse in L)
Recommended Input Fuse			3'150 mA (slow blow) (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 (10 - 100%)		3% max.
Ripple and Noise (20 MHz Bandwidth)		12 VDC model:	150 mVp-p typ. (w/ 10 µF Alu || 0.1 µF MLCC)
		15 VDC model:	150 mVp-p typ. (w/ 10 µF Alu || 0.1 µF MLCC)
		24 VDC model:	240 mVp-p typ. (w/ 10 µF Alu || 0.1 µF MLCC)
		36 VDC model:	360 mVp-p typ. (w/ 10 µF Alu || 0.1 µF MLCC)
		48 VDC model:	480 mVp-p typ. (w/ 10 µF Alu || 0.1 µF MLCC)
		56 VDC model:	560 mVp-p typ. (w/ 10 µF Alu || 0.1 µF MLCC)
Capacitive Load		12 VDC model:	10'000 µF max.
		15 VDC model:	8'000 µF max.
		24 VDC model:	5'000 µF max.
		36 VDC model:	3'300 µF max.
		48 VDC model:	2'500 µF max.
		56 VDC model:	2'200 µF max.
Minimum Load			Not required
Temperature Coefficient			±0.05 %/K max.
Hold-up Time	- At 230 VAC		16 ms min.
	- At 115 VAC		16 ms min.
Start-up Time	- At 230 VAC		2 s max.
	- At 115 VAC		2 s max.
Short Circuit Protection			Continuous, Automatic recovery
Output Current Limitation			110 - 170% of Iout max.
Overvoltage Protection			110 - 160% of Vout nom. (Latch mode)
Transient Response	- Response Deviation		3% typ. / 5% max. (50% to 75% Load Step)
	- Response Time		2.5 ms typ. / 4 ms max. (50% to 75% Load Step)

Safety Specifications

Standards	- IT / Multimedia Equipment	EN 62368-1 IEC 62368-1 UL 62368-1
	- Certification Documents	www.tracopower.com/overview/txo120

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

Protection Class			Class I & II (Prepared): Reinforced Insulation (In Class I applications, the power supply must be mounted onto a metal base plate. A minimum distance of 6 mm between power supply and base plate must be maintained.)
Pollution Degree			PD 2
Over Voltage Category			OVC II

EMC Specifications

EMI (Emissions)	- Conducted Emissions		EN 55032 class B (internal filter) FCC 47 Part 15 class B (internal filter)
	- Radiated Emissions		EN 55032 class A (internal filter) FCC 47 Part 15 class A (internal filter)
	- Harmonic Current Emissions		EN 61000-3-2, class A
	- Voltage Fluctuations & Flicker		EN 61000-3-3
EMS (Immunity)			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%, 0.5 periods, perf. criteria A >95%, 250 periods, perf. criteria B
EMC / Environmental	- Certification Documents		www.tracopower.com/overview/txo120

General Specifications

Relative Humidity			95% max. (non condensing)
Temperature Ranges	- Operating Temperature		–20°C to +70°C
	- Approved Ambient Temp.		+70°C max. (for 50% load) +50°C max. (for 100% load) (for compliance to 62368-1)
	- Storage Temperature		–40°C to +85°C
Power Derating	- High Temperature		2.5 %/K above 50°C
		See application note:	www.tracopower.com/overview/txo120
Cooling System	- Option 1		Forced air cooling (with external fan, 10 CFM)
	- Option 2		Natural convection (20 LFM)
Altitude During Operation			2'000 m max.
Regulator Topology			LLC Converter
Switching Frequency			100 kHz typ. (PFM)
Insulation System			Reinforced Insulation
Working Voltage (rated)			464 VAC
Isolation Test Voltage	- Input to Output, 60 s		3'000 VAC (4242 VDC)
Creepage	- Input to Output		3 mm min.
Clearance	- Input to Output		6 mm min.
Isolation Resistance	- Input to Output, 500 VDC		100 MΩ min.
Leakage Current (at 264 VAC / 60 Hz)	- Touch Current		300 µA max.
Reliability	- Calculated MTBF		100'000 h (MIL-HDBK-217F, ground benign)
Washing Process			Not allowed
Environment	- Vibration		2.4 g, 3 axis, random waveform, 30 min
	- Mechanical Shock		20 g, 3 axis, 6 shocks
Housing Type			Open Frame

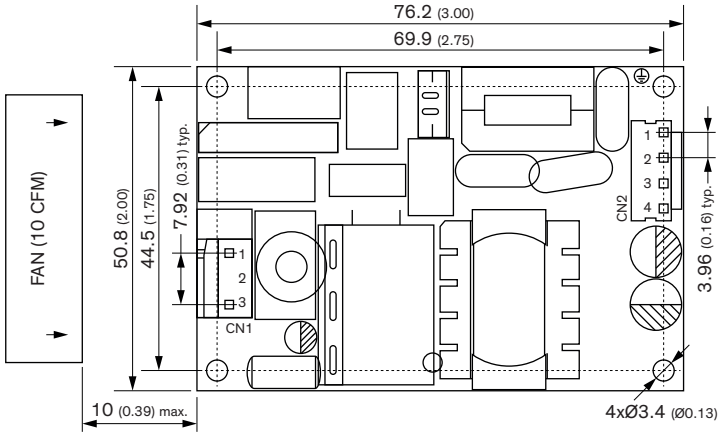
All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Mounting Type		Chassis Mount
Connection Type		Pin Connector
Weight		111 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: 7a (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).)
	- SCIP Reference Number	76709c82-3075-4be0-9ccb-c2736d06f3be

Supporting Documents

Overview Link (for additional Documents)	www.tracopower.com/overview/txo120

Outline Dimensions



Dimensions in mm (inch)
Tolerances: ±0.5 (±0.02)
Mounting screw tightening torque: 0.59 Nm max. (6.0 kgfcm max.)

Pin connectors

Input (CN1)		Output (CN2)	
Pin	Function	Pin	Function
1	AC (L)	1	+Vout
3	AC (N)	2	
		3	–Vout
		4	

Input (CN1)**:** JST series, B3P-VH(LF)(SN), 3.96mm mates with JST crimp terminal: SVH-21T-P1.1 or equivalent and terminal housing: VHR-3N or equivalent

Output (CN2)**:** JST series, B4P-VH(LF)(SN), 3.96mm mates with JST crimp terminal: SVH-21T-P1.1 or equivalent and terminal housing: VHR-4N or equivalent