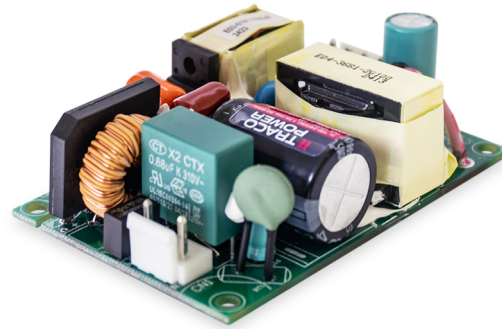


- Compact open frame power supply with pin connectors
- Universal input range 85 to 264 VAC
- Convection cooled (no-fan)
- Operating temperature range: -20°C to +70°C
- Internal EN55032 class B filter
- Short circuit, overvoltage and overload protection
- IEC/EN/UL 62368-1 safety approvals
- Compliance 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 full load operation up to +50°C with convection cooling and up to +70°C with forced air cooling. 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 A	8.33 A	92 %
TXO 120-115-J		15 VDC	8 A	6.66 A	92 %
TXO 120-124-J		24 VDC	5 A	4.16 A	92 %
TXO 120-148-J		48 VDC	2.5 A	2.08 A	92 %

Options	
<b>TCI 130-DC</b>	- Optional Cable: <a href="http://www.tracopower.com/overview/tci130-dc">www.tracopower.com/overview/tci130-dc</a>
<b>TCI-AC1</b>	- Optional Cable: <a href="http://www.tracopower.com/overview/tci-ac1">www.tracopower.com/overview/tci-ac1</a>
<b>on demand</b> (backorder with MOQ non stocking item)	- Optional model with 36 VDC and 3.33 A - Optional model with 56 VDC and 2.14 A

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

### Input Specifications

Input Voltage		Operational Range: <b>90 - 264 VAC</b> (Full Range) Rated Range: <b>100 - 240 VAC</b> (Full Range)
Input Frequency		Operational Range: <b>47 - 63 Hz</b> Certified: <b>50/60 Hz</b>
Power Consumption	- No load & Vin = 230 VAC - No load & Vin = 115 VAC	<b>150 mW max.</b> <b>150 mW max.</b>
Input Current	- Full load & Vin = 230 VAC - Full load & Vin = 115 VAC	<b>650 mA max.</b> <b>1'200 mA max.</b>
Input Inrush Current	- At 230 VAC - At 115 VAC	<b>100 A max.</b> <b>60 A max.</b>
Power Factor	- At 230 VAC - At 115 VAC	<b>0.9 min.</b> (Active Power Factor Correction) <b>0.95 min.</b> (Active Power Factor Correction)
Input Protection		<b>T 3.15 A / 250 VAC</b> (Internal Fuse in L)
Recommended Input Fuse		<b>3'150 mA</b> (slow blow)  (The need of an external fuse has to be assessed in the final application.)

### Output Specifications

Voltage Set Accuracy		<b>±2% max.</b>
Regulation	- Input Variation (Vmin - Vmax) - Load Variation (10 - 100%)	<b>0.5% max.</b> <b>3% max.</b>
Ripple and Noise (20 MHz Bandwidth)		12 VDC model: <b>150 mVp-p typ.</b> (w/ 10 µF Alu    0.1 µF MLCC) 15 VDC model: <b>150 mVp-p typ.</b> (w/ 10 µF Alu    0.1 µF MLCC) 24 VDC model: <b>240 mVp-p typ.</b> (w/ 10 µF Alu    0.1 µF MLCC) 36 VDC model: <b>360 mVp-p typ.</b> (w/ 10 µF Alu    0.1 µF MLCC) 48 VDC model: <b>480 mVp-p typ.</b> (w/ 10 µF Alu    0.1 µF MLCC) 56 VDC model: <b>560 mVp-p typ.</b> (w/ 10 µF Alu    0.1 µF MLCC)
Capacitive Load		12 VDC model: <b>10'000 µF max.</b> 15 VDC model: <b>8'000 µF max.</b> 24 VDC model: <b>5'000 µF max.</b> 36 VDC model: <b>3'300 µF max.</b> 48 VDC model: <b>2'500 µF max.</b> 56 VDC model: <b>2'200 µF max.</b>
Minimum Load		<b>Not required</b>
Temperature Coefficient		<b>±0.05 %/K max.</b>
Hold-up Time	- At 230 VAC - At 115 VAC	<b>16 ms min.</b> <b>16 ms min.</b>
Start-up Time	- At 230 VAC - At 115 VAC	<b>2 s max.</b> <b>2 s max.</b>
Short Circuit Protection		<b>Continuous, Automatic recovery</b>
Output Current Limitation		<b>110 - 170% of Iout max.</b>
Overvoltage Protection		<b>110 - 160% of Vout nom.</b> (Latch mode)
Transient Response	- Response Deviation - Response Time	<b>3% typ. / 5% max.</b> (50% to 75% Load Step) <b>2.5 ms typ. / 4 ms max.</b> (50% to 75% Load Step)

### Safety Specifications

Standards	- IT / Multimedia Equipment  - Certification Documents	<b>EN 62368-1</b> <b>IEC 62368-1</b> <b>UL 62368-1</b> <a href="http://www.tracopower.com/overview/txo120">www.tracopower.com/overview/txo120</a>
Protection Class		<b>Class I &amp; II (Prepared): Reinforced Insulation</b>

All specifications valid at nominal voltage, 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 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)	- Electrostatic Discharge	Air: EN 55035 (Multimedia) EN 61000-4-2, $\pm 8$ kV, perf. criteria A Contact: EN 61000-4-2, $\pm 4$ kV, perf. criteria A	
	- RF Electromagnetic Field	EN 61000-4-3, 3 V/m, perf. criteria A	
	- EFT (Burst) / Surge	EN 61000-4-4, $\pm 1$ kV, perf. criteria A	
	- Conducted RF Disturbances	L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria A 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	<a href="http://www.tracopower.com/overview/txo120">www.tracopower.com/overview/txo120</a>

### 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)
	- Storage Temperature	-40°C to +85°C
Power Derating	- High Temperature	2.5 %/K above 50°C
		See application note: <a href="http://www.tracopower.com/overview/txo120">www.tracopower.com/overview/txo120</a>
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 M $\Omega$ min.
Leakage Current	- Touch Current	300 $\mu$ A max.
(at 264 VAC / 60 Hz)		
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
Mounting Type		Chassis Mount
Connection Type		Pin Connector
Weight		111 g

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

Environmental Compliance - REACH Declaration

[www.tracopower.com/info/reach-declaration.pdf](http://www.tracopower.com/info/reach-declaration.pdf)

- RoHS Declaration

REACH SVHC list compliant

REACH Annex XVII compliant

[www.tracopower.com/info/rohs-declaration.pdf](http://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

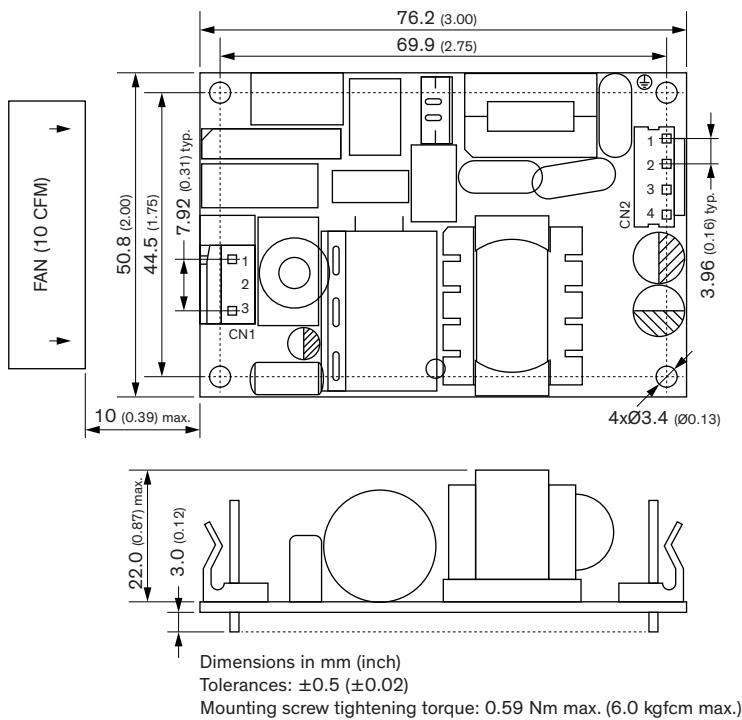
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### Supporting Documents

[Overview Link](#) (for additional Documents)

[www.tracopower.com/overview/txo120](http://www.tracopower.com/overview/txo120)

### Outline Dimensions



### Pin connectors

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