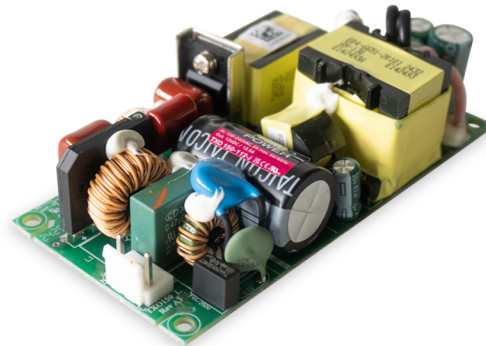


- Industrial AC/DC power supplies for cost sensitive applications in 4" x 2" package
- Universal input range 90 to 264 VAC
- Operating temperature range: -20°C to +70°C
- Protection class II prepared
- Internal EN 55032 class B filter
- Short circuit, overvoltage and overload protection
- IEC/EN/UL 62368-1 safety approvals
- Compliance to EN 61000-3-2
- 3-year product warranty



The TXO 150 is a compact 150 Watt AC/DC open frame module with reinforced I/O isolation designed for a wide range of cost sensitive applications. A high efficiency of 90% allows the TXO 150 to deliver 120 Watt up to +50°C with convection cooling and 150 Watt up to +50°C with forced air cooling, while going up to +70°C with derating. It comes with an active power factor correction and EMC characteristics dedicated for applications in industrial/automation and test & measurement fields making these power supplies an ideal solution for various industrial and cost sensitive applications.

Models					
Order Code	Output Power max.	Output Voltage nom.	Output Current max. (Forced air cooling)	Output Current max. (Natural convection)	Efficiency typ.
TXO 150-112-J	150 W	12 VDC	12'500 mA	10'000 mA	90 %
TXO 150-115-J		15 VDC	10'000 mA	8'000 mA	90 %
TXO 150-124-J		24 VDC	6'250 mA	5'000 mA	90 %
TXO 150-148-J		48 VDC	3'125 mA	3'340 mA	90 %

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 4'180 mA - Optional model with 56 VDC and 2'680 mA

Note - Total output power must not exceed 120 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>780 mA max.</b> <b>1'500 mA max.</b>
Input Inrush Current	- At 230 VAC - At 115 VAC	<b>80 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>4.0 A / 250 VAC</b> (Internal Fuse in L)
Recommended Input Fuse		<b>4'000 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>180 mVp-p max.</b> (w/ 10 nF MLCC    22 µF Al) 15 VDC model: <b>200 mVp-p max.</b> (w/ 10 nF MLCC    22 µF Al) 24 VDC model: <b>300 mVp-p max.</b> (w/ 10 nF MLCC    22 µF Al) 36 VDC model: <b>540 mVp-p max.</b> (w/ 10 nF MLCC    22 µF Al) 48 VDC model: <b>720 mVp-p max.</b> (w/ 10 nF MLCC    22 µF Al) 56 VDC model: <b>840 mVp-p max.</b> (w/ 10 nF MLCC    22 µF Al)
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>3'000 µF max.</b> 48 VDC model: <b>2'500 µF max.</b> 56 VDC model: <b>2'000 µF max.</b>
Minimum Load		<b>Not required</b>
Temperature Coefficient		<b>±3 %/K max.</b>
Hold-up Time	- At 230 VAC - At 115 VAC	<b>10 ms min.</b> <b>10 ms min.</b>
Start-up Time	- At 230 VAC - At 115 VAC	<b>2'000 ms max.</b> <b>2'000 ms max.</b>
Short Circuit Protection		<b>Continuous, Automatic recovery</b>
Output Current Limitation		<b>110 - 200% of Iout max.</b>
Overvoltage Protection		<b>110 - 160% of Vout nom.</b>
Transient Response	- Response Deviation - Response Time	<b>3% typ. / 5% max.</b> (50% to 75% Load Step) <b>2'500 µs typ. / 4'000 µs 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/txo150">www.tracopower.com/overview/txo150</a>
Protection Class		<b>Class I &amp; II</b> (Prepared): <b>Reinforced Insulation</b>  See application note: <a href="http://www.tracopower.com/overview/txo150">www.tracopower.com/overview/txo150</a>

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) FCC 47 Part 15 class A (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	EN 55035 (Multimedia) Air: 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 L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria A L to PE: EN 61000-4-5, $\pm 2$ 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%, 30 periods, perf. criteria A >95%, 0.5 periods, perf. criteria A >95%, 300 periods, perf. criteria B 115 VAC / 60 Hz: EN 61000-4-11 30%, 30 periods, perf. criteria B >95%, 0.5 periods, perf. criteria A >95%, 300 periods, perf. criteria B	
	EMC / Environmental	- Certification Documents	<a href="http://www.tracopower.com/overview/txo150">www.tracopower.com/overview/txo150</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) (for compliance to 62368-1)
Power Derating	- Storage Temperature	-40°C to +85°C
	- High Temperature	2.5 %/K above 50°C See application note: <a href="http://www.tracopower.com/overview/txo150">www.tracopower.com/overview/txo150</a>
Cooling System	- Option 1	Forced air cooling (with external fan, 24 CFM)
	- Option 2	Natural convection (20 LFM)
Altitude During Operation		2'000 m max.
Regulator Topology		LLC Converter
Switching Frequency		22 - 110 kHz (PFM)
		100 kHz typ. (PFM)
Insulation System		Reinforced Insulation
Working Voltage (rated)		472 VAC
Isolation Test Voltage	- Input to Output, 60 s	3'000 VAC (4'242 VDC)
	- Input to Case or PE, 60 s	2'500 VDC
	- Output to Case or PE, 60 s	500 VDC
Creepage	- Input to Output	5 mm min.
	- Input to Case or PE	5 mm min.
	- Output to Case or PE	2.5 mm min.

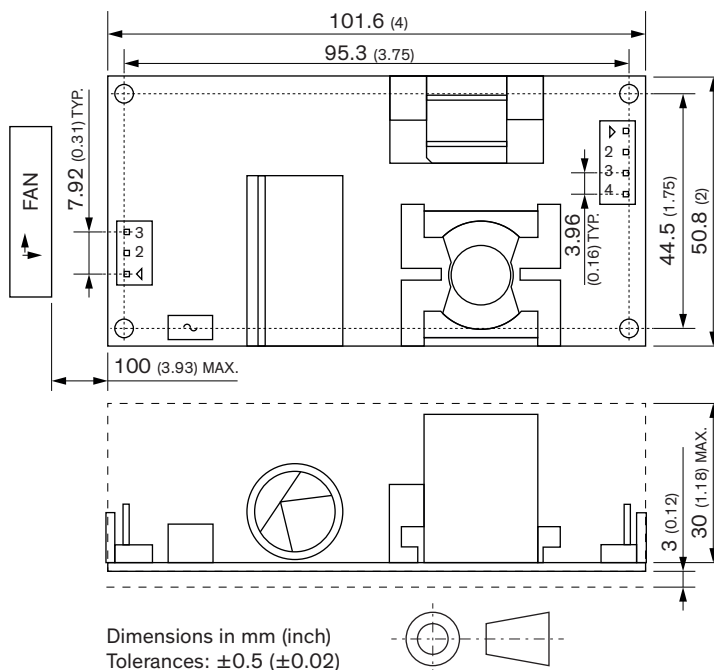
All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Clearance	- Input to Output	5 mm min.
	- Input to Case or PE	5 mm min.
	- Output to Case or PE	2.5 mm min.
Isolation Resistance	- Input to Output, 500 VDC	100 MΩ min.
Isolation Capacitance	- Input to Output, 100 kHz, 1 V	2'670 pF typ. / 3'204 pF max.
Leakage Current (264 VAC / 60 Hz)	- Earth Leakage Current	300 μA max.
	- Touch Current	300 μA max.
Distance Through Isolation		0.4 mm
Reliability	- Calculated MTBF	100'000 h (MIL-HDBK-217F, ground benign)
Washing Process		Not allowed
Environment	- Vibration	2.4 g, 3 axis, random waveform, 50-500 Hz, 10 min/axis
	- Mechanical Shock	20 g, 3 axis, half sine, 10 ms, total 6 shocks
Housing Type		Open Frame
Mounting Type		Chassis Mount
Connection Type		Pin Connector
Weight		200 g
Environmental Compliance	- REACH Declaration	<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a>
	- RoHS Declaration	REACH SVHC list compliant REACH Annex XVII compliant Exemptions: 7(a) (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule)) fc9d447a-d745-49b2-abc6-27747a57f18e
	- SCIP Reference Number	

### Additional Information

Supporting Documents	<a href="http://www.tracopower.com/overview/txo150">www.tracopower.com/overview/txo150</a>
Frequently Asked Questions	<a href="http://www.tracopower.com/glossary-faq">www.tracopower.com/glossary-faq</a>
Glossary	<a href="http://www.tracopower.com/info/glossary.pdf">www.tracopower.com/info/glossary.pdf</a>

### Outline Dimensions



### Pin connectors

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

**Input:** 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:** JST series, JST VH Type AW3961 WV-4P, 3.96mm