

- Rugged isolated power supplies for harsh outdoor environments
- Dust, water (incl. salt water), ice and oil resistant enclosure
- IP67 and NEMA 4X rated
- Connection via waterproof I/O plug-connectors
- Shock & vibration proof construction
- Operating temp. range -40°C to +85°C
- DC-OK indicator, voltage adjust
- Low ripple and noise
- Class I, zone 2 approval incl. ATEX certification (tested in accordance to IECEx)
- 3-year product warranty



These isolated power supplies have been designed particularly for applications in extreme environments. The rugged die-cast aluminium housing is water, ice, oil and dust resistant in compliance with IP67 and NEMA 4X standards. The metal case works as an efficient heatsink allowing full power operation at up to +60°C ambient temperature (no fan required). With a shock and vibration proof construction the power supplies can be mounted directly on a machine. An International safety approval package includes CB scheme as well as ATEX certification for applications in hazardous locations i.e. in chemical or food processing industries. The TEX series offers a cost efficient solution for de-centralized power systems in industrial automation applications with critical environment conditions.

### Models

Order Code	Output Power max.	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TEX 120-112	96 W	12 VDC (12.0 - 15.0 VDC)	8'000 mA	87 %
TEX 120-124	120 W	24 VDC (24.0 - 28.0 VDC)	5'000 mA	87 %

### Options

TEX-C11	- Optional Cable : Input cable, 2 m: <a href="http://www.tracopower.com/products/tex-c11.pdf">www.tracopower.com/products/tex-c11.pdf</a>
TEX-C21	- Optional Cable : Output cable, 2 m: <a href="http://www.tracopower.com/products/tex-c21.pdf">www.tracopower.com/products/tex-c21.pdf</a>
TEX-P11	- Optional Connector Binder 4-pin female plug 99-4222-14-04: <a href="http://www.tracopower.com/products/tex-p11.pdf">www.tracopower.com/products/tex-p11.pdf</a>
TEX-P21	- Optional Connector Binder 7-pin male plug 99-4225-160-07: <a href="http://www.tracopower.com/products/tex-p21.pdf">www.tracopower.com/products/tex-p21.pdf</a>

### Input Specifications

Input Voltage	- AC Range	Operational Range: <b>85 - 264 VAC</b> (Full Range) Rated Range: <b>100 - 240 VAC</b> (Full Range)
	- DC Range	Operational Range: <b>85 - 375 VDC</b> (Designed for, no certification) Polarity: <b>irrelevant</b>
Input Frequency		<b>47 - 63 Hz</b>
Input Current	- Full Load & $V_{in} = 230$ VAC	<b>1'000 mA max.</b>
	- Full Load & $V_{in} = 115$ VAC	<b>2'000 mA max.</b>
Power Consumption	- At no load	<b>4'250 mW max.</b>
Input Inrush Current	- At 230 VAC	<b>25 A max.</b>
	- At 115 VAC	<b>13 A max.</b>
Recommended Input Fuse		<b>5'000 mA</b> (slow blow) (The need of an external fuse has to be assessed in the final application.)

### Output Specifications

Output Voltage Adjustment		12 VDC model: <b>12.0 - 15.0 VDC</b>
		24 VDC model: <b>24.0 - 28.0 VDC</b> (By trim potentiometer) Output power must not exceed rated power!
Regulation	- Input Variation ( $V_{min} - V_{max}$ )	<b>0.5% max.</b>
	- Load Variation (0 - 100%)	<b>0.5% max.</b>
Ripple and Noise (20 MHz Bandwidth)		<b>50 mVp-p max.</b>
Minimum Load		<b>Not required</b>
Hold-up Time	- At 230 VAC	<b>25 ms min.</b>
	- At 115 VAC	<b>20 ms min.</b>
Start-up Time	- At 230 VAC	<b>2'000 ms max.</b>
Short Circuit Protection		<b>Continuous, Automatic recovery</b>
Overload Protection		<b>Constant Current Mode</b>
Output Current Limitation		<b>104 - 135% of I<sub>out</sub> max.</b>
		<b>110% typ. of I<sub>out</sub> max.</b>
Overvoltage Protection		<b>125 - 162% of V<sub>out</sub> nom.</b>
Transient Response	- Peak Variation	<b>1500 mV max.</b> (10% to 90% Load Step)
	- Response Time	<b>3'000 <math>\mu</math>s typ.</b> (10% to 90% Load Step)

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

## Safety Specifications

Safety Standards	<ul style="list-style-type: none"> <li>- IT / Multimedia Equipment</li> <li>- Industrial Control Equipment</li> <li>- Machines Equipment</li> <li>- ATEX</li> <li>- HazLoc</li> <li>- Power Installation</li> <li>- Measurement, Control &amp; Lab.</li> <li>- Power Transformers</li> <li>- Certification Documents</li> </ul>	EN 60950-1 EN 62368-1 IEC 60950-1 IEC 62368-1 UL 508 EN 60204 EN 60204-3 EN 60079-0 EN 60079-15 EX II3G EX nA IIC T4 UL 60079-15 Class I; Div 2; Groups A,B,C,D; T4 EN 50178 EN 61010-1 EN 61010-2-201 IEC 61010-1 IEC 61010-2-201 UL 61010-1 EN 61558-2-8 <a href="http://www.tracopower.com/overview/tex120">www.tracopower.com/overview/tex120</a>
Protection Class		Class I (Prepared): Connection to PE
Pollution Degree		PD 4

## EMC Specifications

EMI Emissions	<ul style="list-style-type: none"> <li>- Conducted Emissions</li> <li>- Radiated Emissions</li> <li>- Harmonic Current Emissions</li> </ul>	EN 61000-6-3 (Generic Residential) EN 61204-3 (Low Voltage Power Supplies) EN 55032 class B (internal filter) EN 55032 class B (internal filter) EN 61000-3-2, class A
EMS Immunity	<ul style="list-style-type: none"> <li>- Electrostatic Discharge</li> <li>- RF Electromagnetic Field</li> <li>- EFT (Burst) / Surge</li> <li>- Conducted RF Disturbances</li> <li>- Voltage Dips &amp; Interruptions</li> <li>- Voltage Sag Immunity</li> </ul>	Air: EN 61000-4-2, $\pm 15$ kV, perf. criteria A Contact: EN 61000-4-2, $\pm 8$ kV, perf. criteria A EN 61000-4-3, 10 V/m, perf. criteria A EN 61000-4-4, $\pm 4$ kV, perf. criteria A L to L: EN 61000-4-5, $\pm 2$ kV, perf. criteria A L to PE: EN 61000-4-5, $\pm 4$ kV, perf. criteria A EN 61000-4-6, 10 Vrms, perf. criteria A 115 VAC / 60 Hz: EN 61000-4-11 30%, 0.5 periods, perf. criteria B 60%, 5 periods, perf. criteria C SEMI F47, criteria A

## General Specifications

Relative Humidity		100% max.
Temperature Ranges	<ul style="list-style-type: none"> <li>- Operating Temperature</li> <li>- Approved Ambient Temp.</li> <li>- Storage Temperature</li> </ul>	-40°C to +85°C +70°C max. (for ATEX) -40°C to +85°C
Power Derating	<ul style="list-style-type: none"> <li>- High Temperature</li> <li>- Low Input Voltage</li> </ul>	2 %/K above 60°C 0.33 %/V below 120 VDC (24 Vout model) No derating required (12 Vout model) (for DC supply only)
Cooling System		Natural convection (20 LFM)
Altitude During Operation		3'000 m max.
Switching Frequency		100 - 190 kHz (PWM)
Insulation System		Reinforced Insulation

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Isolation Test Voltage	- Input to Output, 60 s	3'000 VDC
Creepage	- Input to Output	8 mm min.
Clearance	- Input to Output	8 mm min.
Reliability	- Calculated MTBF	900'000 h (IEC 61709)
Environment	- Vibration	IEC 60068-2-6 1 g, 3 axis, sine sweep, 10-55 Hz, 1 oct/min
	- Mechanical Shock	IEC 60068-2-27 15 g, 3 axis, half sine, 11 ms
Case Ingress Protection		IP 67 (acc. IEC 60529) NEMA 4X UL 50 Water intrusion test Dust test Icing test Oil exclusion test Salt spray test Gasket aging test Hosedown test
Housing Type		Metal Case
Mounting Type		Chassis Mount
Connection Type		Pin Connector
Weight		1000 g
Environmental Compliance	- REACH Declaration	<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a> REACH SVHC list compliant REACH Annex XVII compliant
	- RoHS Declaration	<a href="http://www.tracopower.com/info/rohs-declaration.pdf">www.tracopower.com/info/rohs-declaration.pdf</a> Exemptions: 6a, 6c, 7a, 7c-I, 7c-II (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule). The SCIP number is provided on request.)

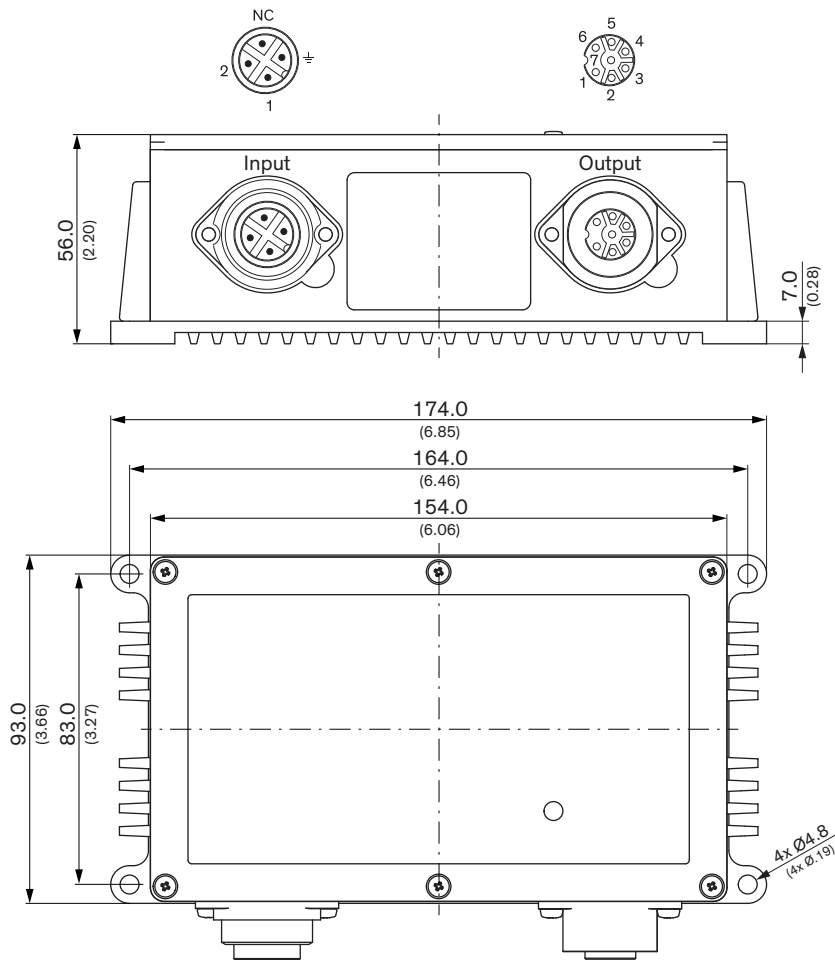
## Supporting Documents

Overview Link (for additional Documents)

[www.tracopower.com/overview/tex120](http://www.tracopower.com/overview/tex120)

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### Outline Dimensions



To access the trim potentiometer, the cover has to be removed.  
Please refer to the installation manual.

Dimensions in mm (inch)  
Tolerances:  $\pm 0.50$  ( $\pm 0.02$ )

Pinout			
<b>Input (male)</b>		<b>Output (female)</b>	
<b>1</b>	L	<b>1-3</b>	-
<b>2</b>	N	<b>4-6</b>	+
$\perp$	PE	<b>7</b>	case

NC: Not connected

**Connectors not included in shipment!**  
(Units are supplied with sealing connector caps)