

- 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  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- DC-OK indicator, voltage adjust
- Low ripple and noise
- Class I, zone 2 approval incl. ATEX certification
- 3-year product warranty



These isolated power supplies have been designed particularly for applications in extreme environments. The rugged die-cast aluminum 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  $+60^{\circ}\text{C}$  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 decentralized 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/overview/tex-c11">www.tracopower.com/overview/tex-c11</a>
TEX-C21	- Optional Cable (Output cable, 2 m): <a href="http://www.tracopower.com/overview/tex-c21">www.tracopower.com/overview/tex-c21</a>
TEX-P11	- Optional Connector (Binder 4-pin female plug 99-4222-14-04): <a href="http://www.tracopower.com/overview/tex-p11">www.tracopower.com/overview/tex-p11</a>
TEX-P21	- Optional Connector (Binder 7-pin male plug 99-4225-160-07): <a href="http://www.tracopower.com/overview/tex-p21">www.tracopower.com/overview/tex-p21</a>
on demand (backorder with MOQ non stocking item)	- Optional Connector Protection Kit to meet EN/IEC 60079-7: <a href="http://www.tracopower.com/overview/tex-bk">www.tracopower.com/overview/tex-bk</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		Operational Range: <b>47 - 63 Hz</b> Certified: <b>50/60 Hz</b>
Power Consumption	- No load & Vin = 230 VAC	<b>2'200 mW max.</b>
	- No load & Vin = 115 VAC	<b>2'200 mW max.</b>
Input Current	- Full load & Vin = 230 VAC	<b>1'000 mA max.</b>
	- Full load & Vin = 115 VAC	<b>2'000 mA 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 (Vmin - Vmax)	<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 Iout max.</b>
		<b>110% typ. of Iout max.</b>
Overvoltage Protection		<b>125 - 162% of Vout nom.</b>
Transient Response	- Peak Variation	<b>1500 mV max.</b> (10% to 90% Load Step)
	- Response Time	<b>3'000 μs typ.</b> (10% to 90% Load Step)

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

### Safety Specifications

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 60079-7 EX II 3G Ex ec IIC T4 Gc 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/tex120-safety-cert">www.tracopower.com/tex120-safety-cert</a> (When operating in ex environments such as ATEX, Hazloc, etc.: Check certification documents for special conditions for safe use.)
Protection Class		Class I (Prepared): Connection to PE
		See application note: <a href="http://www.tracopower.com/info/protection-class.pdf">www.tracopower.com/info/protection-class.pdf</a>
Energy Source	- Output, acc. to 62368-1	ES1
Power Source	- Output, acc. to 62368-1	PS3
Pollution Degree		PD 4
Over Voltage Category		OVC II

### EMC Specifications

EMI (Emissions)	<ul style="list-style-type: none"> <li>- Conducted Emissions</li> <li>- Radiated Emissions</li> </ul>	EN 61000-6-3 (Generic Residential) EN 61204-3 (Low Voltage Power Supplies) EN 55032 class A (internal filter) EN 55032 class B (internal filter) EN 55032 class A (internal filter) EN 55032 class B (internal filter)
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 EN 61000-4-11 30%, 0.5 periods, perf. criteria B 60%, 5 periods, perf. criteria C SEMI F47, criteria A
EMC / Environmental	- Certification Documents	<a href="http://www.tracopower.com/tex120-emc-cert">www.tracopower.com/tex120-emc-cert</a>

### General Specifications

Relative Humidity	100% max.
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All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Temperature Ranges	- Operating Temperature - Approved Ambient Temp. - Storage Temperature	ATEX: -40°C to +85°C +70°C max. -40°C to +85°C
Power Derating	- High Temperature - Low Input Voltage	2.0 %/K above 60°C 0.33 %/V below 120 VDC (24 Vout model / 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
Isolation Test Voltage	- Input to Output, 60 s - Input to Case or PE, 60 s	4'000 VDC 2'500 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  - Mechanical Shock	IEC 60068-2-6 1 g, 3 axis, sine sweep, 10-55 Hz, 1 oct/min 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		1'000 g
Environmental Compliance	- REACH Declaration  - RoHS Declaration  - SCIP Reference Number	<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 <a href="http://www.tracopower.com/info/rohs-declaration.pdf">www.tracopower.com/info/rohs-declaration.pdf</a> Exemptions: 7(a), 7(c)-I (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).) 51c60289-03f1-409c-b596-1e9efd5b7154

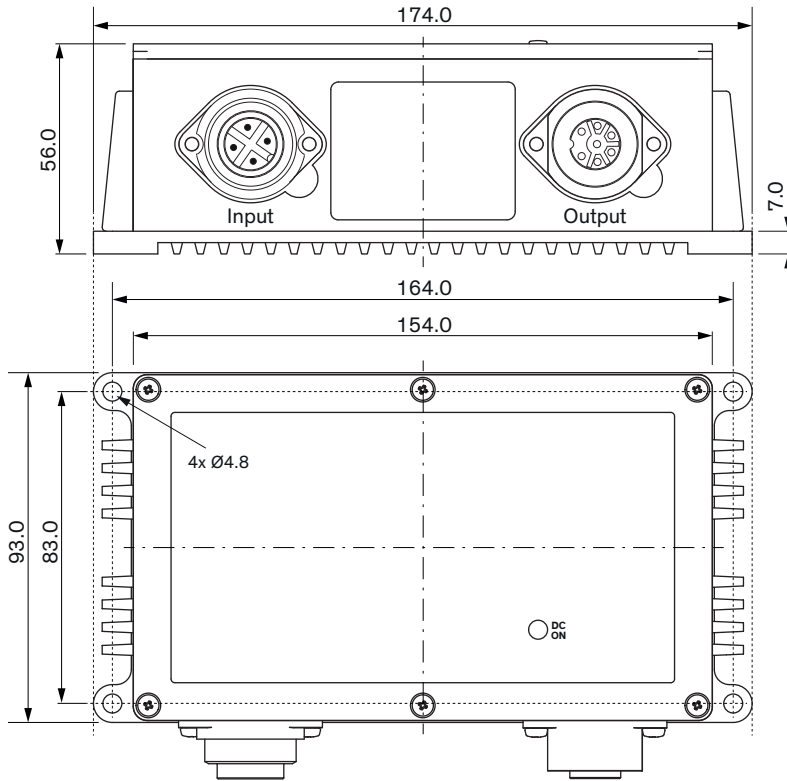
## Additional Information

Supporting Documents	<a href="http://www.tracopower.com/overview/tex120">www.tracopower.com/overview/tex120</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>

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

### Outline Dimensions

#### Standard version



Pinout			
Input		Output	
1	L	1-3	-
2	N	4-6	+
⊕	PE	7	case

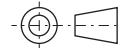
NC: Not connected

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

Mounting screw tightening torque: 2.0 - 2.4 Nm

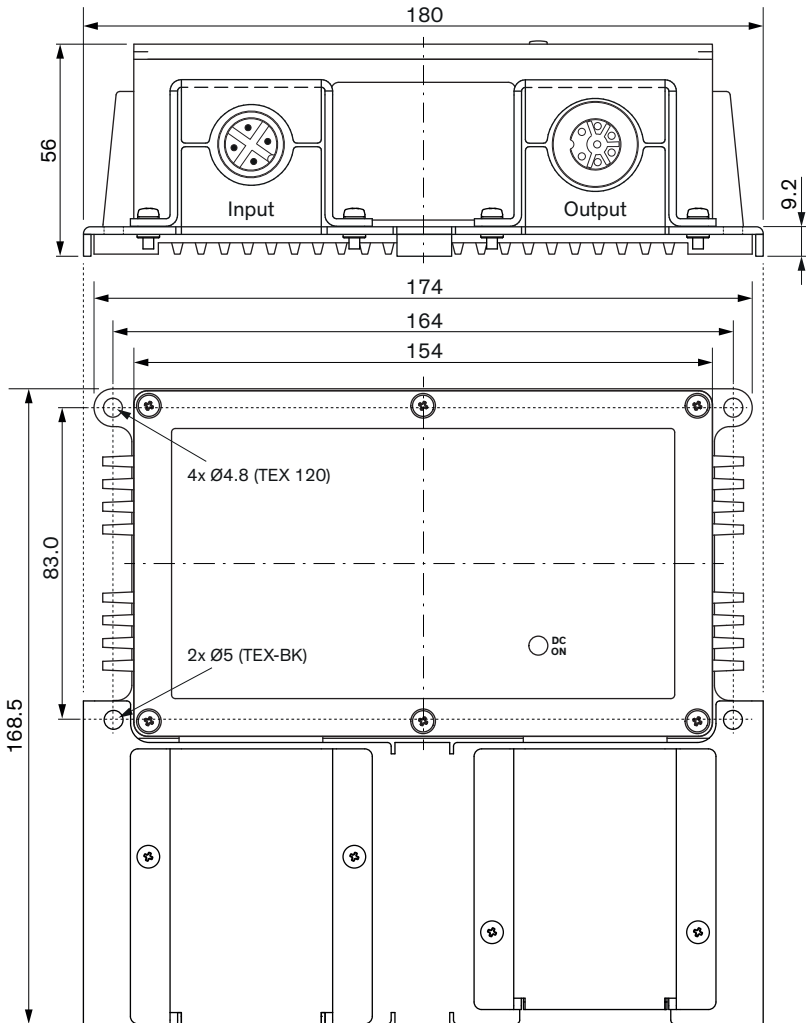
Dimensions in mm  
Tolerances:  $\pm 0.50$

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



Please ensure that the TEX 120 is installed with the connectors facing downwards.

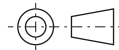
### With on-demand Mechanical protection kit TEX-BK



Mounting screw tightening torque TEX 120: 2.0 - 2.4 Nm  
 Mounting screw tightening torque TEX-BK: 1.2 Nm

Dimensions in mm  
 Tolerances TEX 120:  $\pm 0.50$   
 Tolerances TEX-BK:  $\pm 1$

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



Please ensure that the TEX 120 is installed with the connectors facing downwards.  
 Connectors not included.

If the equipment is not assembled with the optional mechanical protection kit TEX-BK,  
 the equipment must be installed in an enclosure that provides a minimum ingress protection  
 of IP54 (according to EN ICE 60079-0).

Pinout			
Input		Output	
1	L	1-3	-
2	N	4-6	+
3	PE	7	case

NC: Not connected

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