

- 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 $+85^{\circ}\text{C}$
- 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): www.tracopower.com/overview/tex-c11
TEX-C21	- Optional Cable (Output cable, 2 m): www.tracopower.com/overview/tex-c21
TEX-P11	- Optional Connector (Binder 4-pin female plug 99-4222-14-04): www.tracopower.com/overview/tex-p11
TEX-P21	- Optional Connector (Binder 7-pin male plug 99-4225-160-07): www.tracopower.com/overview/tex-p21
on demand (backorder with MOQ non stocking item)	- Optional Connector Protection Kit to meet EN/IEC 60079-7: www.tracopower.com/overview/tex-bk

Input Specifications

Input Voltage	- AC Range	Operational Range: 85 - 264 VAC (Full Range) Rated Range: 100 - 240 VAC (Full Range)
	- DC Range	Operational Range: 85 - 375 VDC (Designed for, no certification) Polarity: irrelevant
Input Frequency		Operational Range: 47 - 63 Hz Certified: 50/60 Hz
Power Consumption	- No load & $V_{in} = 230$ VAC	2'200 mW max.
	- No load & $V_{in} = 115$ VAC	2'200 mW max.
Input Current	- Full load & $V_{in} = 230$ VAC	1'000 mA max.
	- Full load & $V_{in} = 115$ VAC	2'000 mA max.
Input Inrush Current	- At 230 VAC	25 A max.
	- At 115 VAC	13 A max.
Recommended Input Fuse		5'000 mA (slow blow) (The need of an external fuse has to be assessed in the final application.)

Output Specifications

Output Voltage Adjustment		12 VDC model: 12.0 - 15.0 VDC 24 VDC model: 24.0 - 28.0 VDC (By trim potentiometer) Output power must not exceed rated power!
Regulation	- Input Variation ($V_{min} - V_{max}$)	0.5% max.
	- Load Variation (0 - 100%)	0.5% max.
Ripple and Noise (20 MHz Bandwidth)		50 mVp-p max.
Minimum Load		Not required
Hold-up Time	- At 230 VAC	25 ms min.
	- At 115 VAC	20 ms min.
Start-up Time		2'000 ms max.
Short Circuit Protection		Continuous, Automatic recovery
Overload Protection		Constant Current Mode
Output Current Limitation		104 - 135% of I_{out} max.
		110% typ. of I_{out} max.
Overvoltage Protection		125 - 162% of V_{out} nom.
Transient Response	- Peak Variation	1500 mV max. (10% to 90% Load Step)
	- Response Time	3'000 μs typ. (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"> - IT / Multimedia Equipment - Industrial Control Equipment - Machines Equipment - ATEX - HazLoc - Power Installation - Measurement, Control & Lab. - Power Transformers - Certification Documents 	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 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 www.tracopower.com/overview/tex120 (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	
Pollution Degree	PD 4	

EMC Specifications

EMI (Emissions)	<ul style="list-style-type: none"> - Conducted Emissions - Radiated Emissions 	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)
EMS (Immunity)	<ul style="list-style-type: none"> - Electrostatic Discharge - RF Electromagnetic Field - EFT (Burst) / Surge - Conducted RF Disturbances - Voltage Dips & Interruptions - Voltage Sag Immunity 	EN 61000-6-2 (Generic Industrial) EN 61204-3 (Low Voltage Power Supplies) Air: EN 61000-4-2, ± 15 kV, perf. criteria A Contact: EN 61000-4-2, ± 8 kV, perf. criteria A EN 61000-4-3, 10 V/m, perf. criteria A EN 61000-4-4, ± 4 kV, perf. criteria A L to L: EN 61000-4-5, ± 2 kV, perf. criteria A L to PE: EN 61000-4-5, ± 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	www.tracopower.com/overview/tex120

General Specifications

Relative Humidity	100% max.	
Temperature Ranges	<ul style="list-style-type: none"> - Operating Temperature - Approved Ambient Temp. - Storage Temperature 	-40°C to +85°C +70°C max. (for ATEX) -40°C to +85°C
Power Derating	<ul style="list-style-type: none"> - High Temperature - Low Input Voltage 	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)	

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

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 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	1'000 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: 7(a), 7(c)-I (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).) - SCIP Reference Number 51c60289-03f1-409c-b596-1e9efd5b7154

Supporting Documents

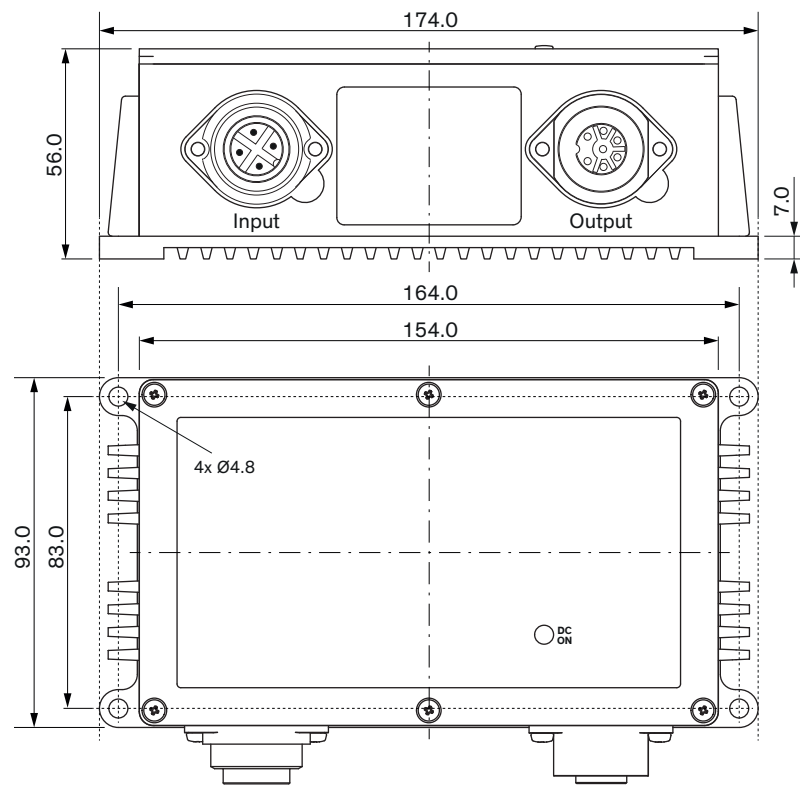
Overview Link (for additional Documents)

www.tracopower.com/overview/tex120

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

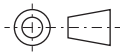
NC: Not connected

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

Mounting screw tightening torque: 2.0 - 2.4 Nm

Dimensions in mm
Tolerances: ± 0.50

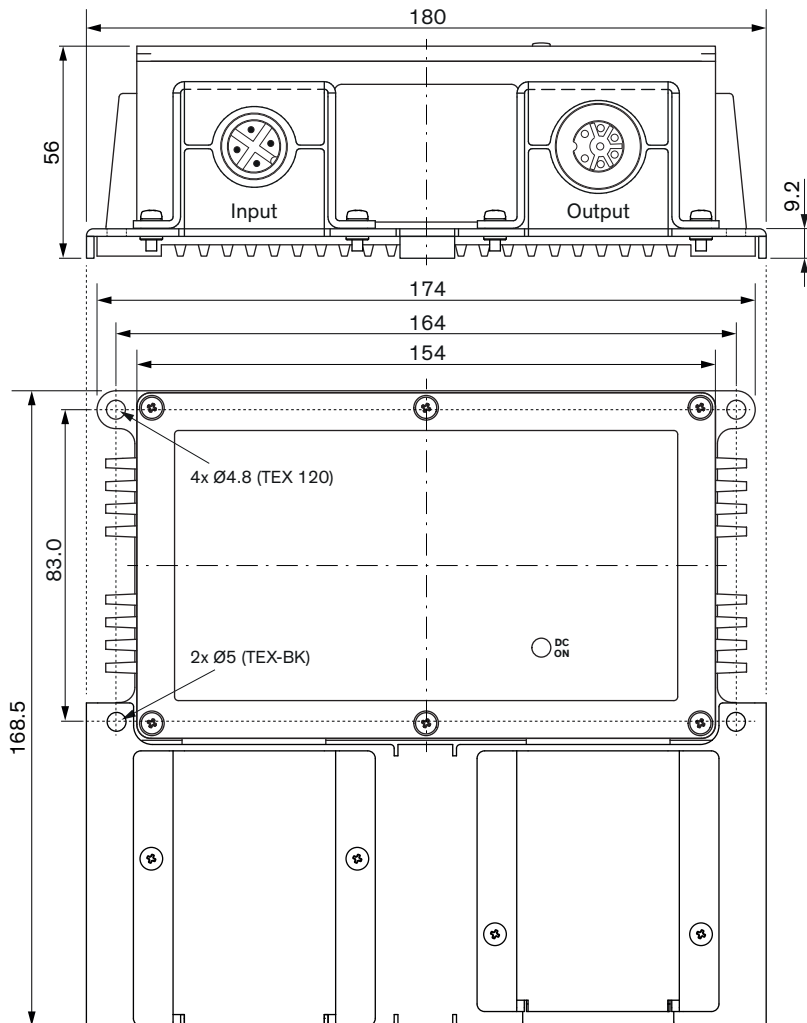
To access the trim potentiometer, the cover has to be removed.
Please refer to the installation manual.



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

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

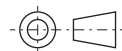
With on-demand Mechanical protection kit TEX-BK



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: ± 0.50
Tolerances TEX-BK: ± 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	+
\perp	PE	7	case

NC: Not connected

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