TRACO POWER

AC/DC Power Supply

TXLN 960 Series, 960 Watt

- **Compact metal case with screw terminal block**
- **Universal input 90-264 VAC**
- **High efficiency up to 89%**
- **Active PFC >0.95**
- **Compliance to EN 61000-3-2**
- **Short circuit, overvoltage and overload protection**
- **IEC/EN/UL 62368-1 safety approvals**
- **3 year product warranty**

UL 62368-1 IEC 62368-1

The TXLN series is a family of encased power supplies designed for a wide range of cost critical applications. With a low profile metal case and screw terminal block connection, they are easy to install in any equipment. These power supplies have universal input and comply with European EMC standards and the Low Voltage Directive (LVD).

Models

Order Code	Output Power max.	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TXLN 960-112	960 W	12 VDC (10.8 - 13.2 VDC)	80'000 mA	87 %
TXLN 960-115		15 VDC (13.5 - 16.5 VDC)	64'000 mA	88 %
TXLN 960-124		24 VDC (21.6 - 26.4 VDC)	40'000 mA	88 %
TXLN 960-148		48 VDC (43.2 - 52.8 VDC)	20'000 mA	89 %

Input Specifications

Input Voltage	- AC Range		90 - 264 VAC (Full Range)
	- DC Range		127 - 375 VDC (Designed for, no certification)
Input Frequency			47 - 63 Hz
Input Current	- Full Load & Vin = 230 VAC		6'500 mA max.
	- Full Load & Vin = 115 VAC		10'500 mA max.
Input Inrush Current	- At 230 VAC		90 A max.
	- At 115 VAC		50 A max.
Power Factor	- At 230 VAC		0.95 min. (Active Power Factor Correction)
	- At 115 VAC		0.95 min. (Active Power Factor Correction)
Input Protection			T 12 A / 250 VAC (Internal Fuse)
Recommended Input Fuse			12'000 mA (slow blow) (The need of an external fuse has to be assessed in the final application.)

Output Specifications

Output Voltage Adjustment			±10% (By trim potentiometer) Output power must not exceed rated power!
Voltage Set Accuracy			±1% max.
Regulation	- Input Variation (Vmin - Vmax)		0.5% max.
	- Load Variation (0 - 100%)		1% max.
Ripple and Noise (20 MHz Bandwidth)		12 VDC model:	150 mVp-p max. (w/ 0.1 µF // 47 µF)
		15 VDC model:	150 mVp-p max. (w/ 0.1 µF // 47 µF)
		24 VDC model:	200 mVp-p max. (w/ 0.1 µF // 47 µF)
		48 VDC model:	250 mVp-p max. (w/ 0.1 µF // 47 µF)
Minimum Load			Not required
Temperature Coefficient			±0.03 %/K max.
Hold-up Time	- At 230 VAC		14 ms min.
	- At 115 VAC		14 ms min.
Start-up Time	- At 230 VAC		2'000 ms max.
Short Circuit Protection			Continuous, Automatic recovery
Output Current Limitation			105 - 135% of Iout max.
Overvoltage Protection			115 - 140% of Vout nom.
Load Share Function	- Refer to application note		www.tracopower.com/overview/txln960
Load Share Accuracy			10%

Safety Specifications

Safety Standards	- IT / Multimedia Equipment	EN 62368-1 IEC 62368-1 UL 62368-1
	- Certification Documents	www.tracopower.com/overview/txln960
Protection Class		Class I (Prepared): Connection to PE
Pollution Degree		PD 2
Over Voltage Category		OVC II

EMC Specifications

EMI Emissions	- Conducted Emissions	EN 55032 class B (internal filter)
	- Radiated Emissions	EN 55032 class B (internal filter)
	- Harmonic Current Emissions	EN 61000-3-2, class D
	- Voltage Fluctuations & Flicker	EN 61000-3-3

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

EMS Immunity			EN 55024 (IT Equipment)
	- Electrostatic Discharge	Air:	EN 61000-4-2, ±8 kV, perf. criteria A
		Contact:	EN 61000-4-2, ±4 kV, perf. criteria A
	- RF Electromagnetic Field		EN 61000-4-3, 10 V/m, perf. criteria A
	- EFT (Burst) / Surge		EN 61000-4-4, ±2 kV, perf. criteria A
		L to L:	EN 61000-4-5, ±2 kV, perf. criteria B
		L to PE:	EN 61000-4-5, ±4 kV, perf. criteria B
	- Conducted RF Disturbances		EN 61000-4-6, 10 Vrms, perf. criteria A
	- PF Magnetic Field	Continuous:	EN 61000-4-8, 30 A/m, perf. criteria A
		1 s:	EN 61000-4-8, 300 A/m, perf. criteria A
	- Voltage Dips & Interruptions	230 VAC / 50 Hz:	EN 61000-4-11 30%, 25 periods, perf. criteria C >95%, 0.5 periods, perf. criteria B >95%, 250 periods, perf. criteria C

General Specifications

Relative Humidity			90% max. (non condensing)
Temperature Ranges	- Operating Temperature		−20°C to +70°C
	- Storage Temperature		−40°C to +85°C
Power Derating	- High Temperature		2.5 %/K above 50°C
	- Low Input Voltage	See application note:	www.tracopower.com/overview/txln960
Over Temperature Protection Switch Off	- Protection Mode		90°C min. / 95°C typ. / 100°C max. (Automatic recovery)
Cooling System			Forced air cooling (with internal fan)
Fan Power Source	- Characteristic		Constant fan speed (continuous)
	- Output Voltage		12 VDC
	- Output Current		480 mA max.
Standby Power Source	- Output Voltage		12 VDC
	- Output Current		300 mA max.
Remote Control	- Voltage Controlled Remote	See application note:	www.tracopower.com/overview/txln960
Altitude During Operation			4'000 m max. (The max. ambient temperature decreases by 5 K / 1000 m when operated above 2000 m)
Switching Frequency			55 - 65 kHz (PWM)
Insulation System			Reinforced Insulation
Isolation Test Voltage	- Input to Output, 60 s		3'000 VAC
	- Input to Case or PE, 60 s		1'800 VAC
	- Output to Case or PE, 60 s		500 VAC
Isolation Resistance	- Input to Output, 500 VDC		100 MΩ min.
Isolation Capacitance	- Input to Output, 100 kHz, 1 V		20'000 pF max.
Leakage Current (at 264 VAC / 60Hz)	- Earth Leakage Current		1500 µA max.
Reliability	- Calculated MTBF		84'100 h (MIL-HDBK-217F, ground benign)
Housing Material			Aluminium
Housing Type			Metal Case
Mounting Type			Chassis Mount
Connection Type			Screw Terminal
Weight			2500 g
Power OK Signal			Voltage source output
	- Power OK		High level
	- Power Off		Low level
			(Refers to 'PG' and 'GND' Pin)
Status Indicator			Indicated by green LED
Sense Function			(to be done)

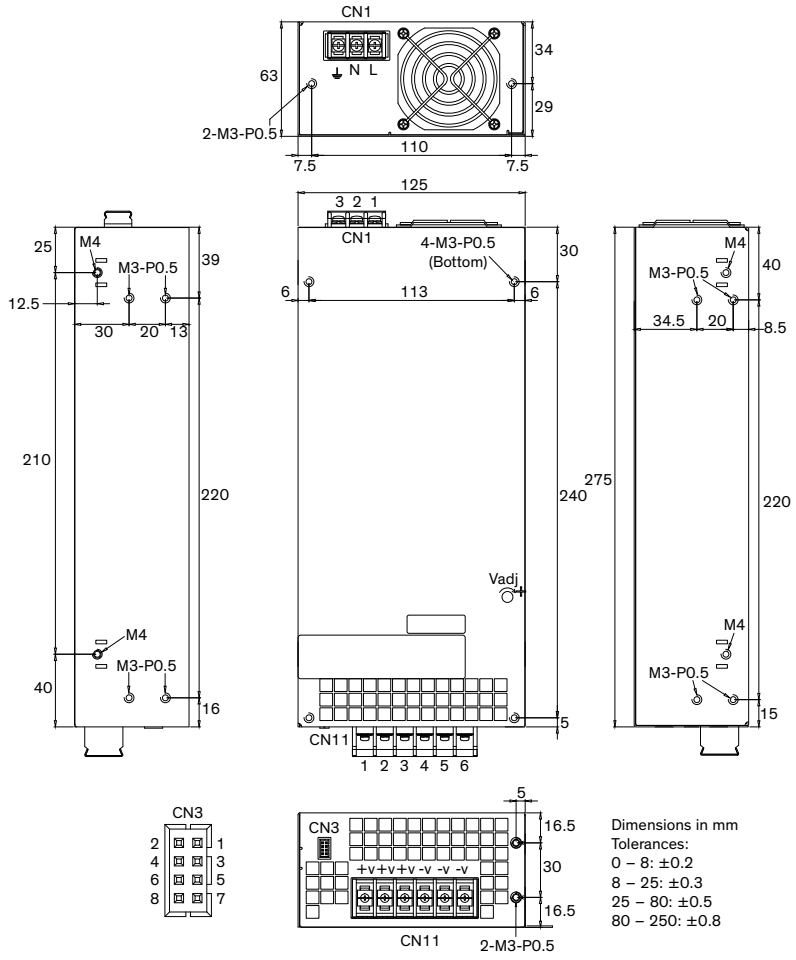
All specifications valid at nominal voltage, resistive full load and +25°C after warm-up time, unless otherwise stated.

Environmental Compliance	- REACH Declaration	www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant
	- RoHS Declaration	www.tracopower.com/info/rohs-declaration.pdf Exemptions: 6a, 6b, 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/txln960

Outline Dimensions



Dimensions in mm
Tolerances:
0 – 8: ±0.2
8 – 25: ±0.3
25 – 80: ±0.5
80 – 250: ±0.8

Input	
CN1	
Pin	Function
1	AC (L)
2	AC (N)
3	PE

Output	
CN11	
Pin	Function
1-3	+Vout
4-6	–Vout

Auxiliary	
CN3	
Pin	Function
1	LS
2	PG
3	+Sense
4	–Sense
5	–Remote
6	+Remote
7	Standby
8	GND

CN1:
3 pin, 10mm pitch
with PC cover

CN11:
6 pin, 11 mm pitch

CN3 Housing Type:
HRS DF11-8DP-2DSA

CN3 Mating Housing:
HRS DF11-8DS-2C

CN3 Crimp Contact:
HRS DF11-EP22SCB