

# LDT960 Series

## 960W DIN Rail Switching Power Supply

LDT960 Series is a high power switching mode power supplies with three phase input voltage 400 – 500 VAC, delivering 960 W of output power, covering output voltages from 24 to 72 V (model dependent).

Their compact size, high efficiency and excellent reliability together with easy installation make them fit demanding applications where compactness and high power are needed.

LDT960 Series are Class I isolation devices suitable for SELV and PELV circuitry (up to 48 VDC models) and are designed to be mounted on DIN rail and installed inside a protective enclosure.



### Key Features & Benefits

- 3 phase AC input 400 – 500 VAC
- High efficiency and compact size
- Overload 150%
- Constant current or hiccup mode limitation, user settable
- Low noise thermally regulated fan
- 72 V output model as standard

### Applications

- Automation
- Process Control
- Communication
- Instrumentation Equipment



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## 1. MODEL SELECTION

MODEL	INPUT VOLTAGE	# of PHASES	OUTPUT VOLTAGE	OUTPUT CURRENT
LDT960-24	400 - 500 VAC / 520 - 725 VDC	3	24 VDC	40 A
LDT960-48	400 - 500 VAC / 520 - 725 VDC	3	48 VDC	20 A
LDT960-72	400 - 500 VAC / 520 - 725 VDC	3	72 VDC	13.3 A

## 2. INPUT SPECIFICATIONS

Technical parameters are typical, measured in laboratory environment at 25°C and 400 VAC / 50 Hz, at nominal values, after minimum 5 minutes of operation.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input AC Voltage Range	Rated, three phase, UL certified Operating	400 – 500 VAC 340 – 550 VAC
Input DC Voltage Range	Rated	520 – 725 VDC
Input Frequency		47 - 63 Hz
Input AC Current	Vin = 400 VAC Vin = 500 VAC	2.4 A 2.1 A
Input DC Current	Vin = 520 VDC Vin = 725 VDC	2.2 A 1.7 A
Inrush Peak Current		≤ 50 A
Touch (Leakage) Current		≤ 0.1 mA
Internal Protection Fuse	None, external fuse must be provided	
Recommended External Protection	It is strongly recommended to provide external surge arresters (SPD) according to local regulations	Fuse 3x 10 AT or 3x MCB 10 A C curve

<sup>1</sup> In case of 2 phase operation, reduce the output load to 50% of the nominal value.

## 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		960 W
Rated Voltage (Adjustable Voltage Range)	LDT960-24 LDT960-48 LDT960-72	24 VDC (23 – 28 VDC) 48 VDC (45 – 55 VDC) 72 VDC (72 – 85 VDC)
Continuous Current	LDT960-24 LDT960-48 LDT960-72	40 A 20 A 13.3 A
Overload Limit (Constant Current Mode)	LDT960-24 LDT960-48 LDT960-72	44 A 22 A 15 A
Overload Limit (Hiccup Mode) (max. 5s)	LDT960-24 LDT960-48 LDT960-72	60 A 30 A 20 A
Load Regulation	LDT960-24 LDT960-48 / LDT960-72	≤ 1.0% ≤ 0.5%
Ripple & Noise <sup>2</sup>		≤ 100 mVpp
Hold up Time		≥ 15 ms
Protections	Overload, short circuit: Constant current or Hiccup mode (user settable) Thermal protection Output overvoltage	
Output Over Voltage Protection	LDT960-24 LDT960-48 LDT960-72	≥ 33 VDC ≥ 68 VDC ≥ 100 VDC

Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1 A)
Parallel Connection <sup>3</sup>	Possible for power or redundancy (with external ORing module)
Efficiency	LDT960-24 > 90.5%
	LDT960-48 > 92.5%
	LDT960-72 > 93%
Dissipated Power	LDT960-24 < 101 W
	LDT960-48 < 78 W
	LDT960-72 < 73 W

<sup>2</sup> Ripple and Noise are measured with 20 MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor.

<sup>3</sup> Pay attention, set the current limitation mode jumper on C.C. mode when connecting more units in parallel.

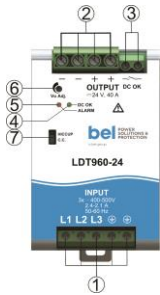
**NOTE:** Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range. Contact factory for details.

## 4. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION	
Operating Temperature	Over temperature protection, UL certified up to 45°C (Start-up type tested: - 40°C) <sup>4</sup>	- 40°C to + 70°C	
Storage Temperature		- 40°C to + 80°C	
Derating		- 15 W / °C over 45°C	
Humidity	Non-condensing	5 – 95% RH	
Life Time Expectancy	At 25°C ambient 75% load	63200 h (7.2 years)	
Overvoltage Category		III (EN50178)	
Pollution Degree		2 (IEC60664-1)	
Protection Class		Class I	
Isolation Voltage	Input to Output	4.2 kVDC	
	Input to Ground	2.2 kVDC	
	Output to Ground	0.75 kVDC	
Standards & Approvals	UL508 (certified)		
	EN60950 (reference)		
	EN50178 (reference)		
EMC Standards	Emission	EN55011 (CISPR11)	Class A
		EN55022 (CISPR22)	Class A
		EN61000-4-2	Level 3
	Immunity	EN61000-4-3	Level 3
		EN61000-4-4	Level 3
		EN61000-4-5	Level 4
EN61000-4-11	Level 2		
Protection Degree	EN60529	IP20	
Vibration sinusoidal	IEC 60068-2-6	(5-17.8 Hz: ±1.6 mm; 17.8-500 Hz: 2g 2Hours / axis (X,Y,Z)	
Shock	IEC 60068-2-27	(30 g 6 ms, 20 g 11 ms; 3 bumps / direction, 18 bumps total)	

<sup>4</sup> Possible at nominal voltage with load derating.

5. PIN LAYOUT & DESCRIPTION



INPUT CONNECTION	OUTPUT CONNECTION
3 phase: L1 = Phase 1 L2 = Phase 2 L3 = Phase 3 ⊕ = Earth ground	+ = Positive DC - = Negative DC Dry contact = NC
DC: L1 = + Positive DC L2 = - Negative DC L3 = Do not connect ⊕ = Earth ground	Signaling: DC OK: dry contact NO COM

PIN	DESCRIPTION
1	AC/DC input
2	DC output (load)
3	Status Output (dry contact, NC output OK)
4	Green LED: Output OK
5	Red LED: Overload
6	Output voltage adjustment
7	Selectable limitation mode

6. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		1.3 kg
Dimensions		80 x 127 x 137.5 mm
Mounting Rail		IEC 60715/H15/TH35-7.5(-15)
Connection Terminals	Screw type header (16 – 10 AWG) Screw type header (10 – 6 AWG) for output on 24 V model	1.5 – 6 mm <sup>2</sup> 6 - 16 mm <sup>2</sup>
Case Material	Aluminum	

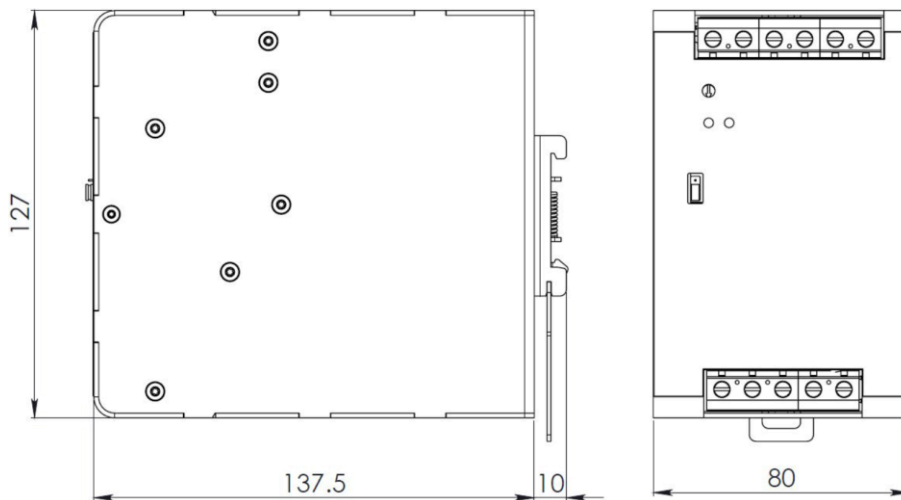


Figure 1. Mechanical Drawing

For more information on these products consult: [tech.support@psbel.com](mailto:tech.support@psbel.com)

**NUCLEAR AND MEDICAL APPLICATIONS** - Products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

**TECHNICAL REVISIONS** - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

