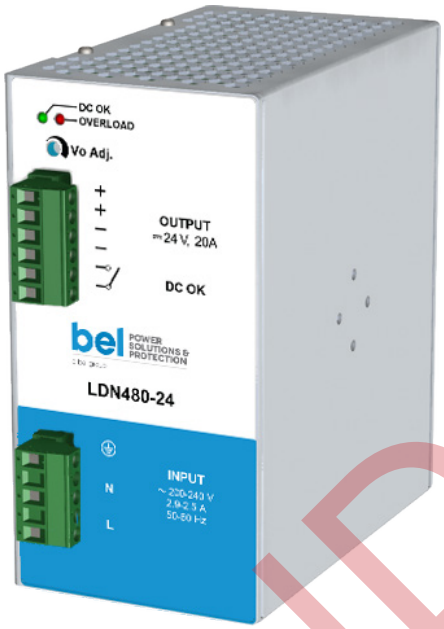
LDN480-24

480 W DIN Rail Switching Power Supply



LDN480-24 is a single phase DIN Rail Switching Power Supply with active PFC, suitable for broad range of industrial, telecom and renewable energy applications.

The unit has received excellent market approval for its high efficiency, excellent reliability and compactness. Simple but elegant look and ease of installation due to pluggable connectors make it ideal for various industrial applications.

LDN480-24 is Class I isolation device designed to be mounted on DIN rail and installed inside a protective enclosure.

FEATURES

- Input voltage 187 - 264 VAC (250 - 375 VDC)
- Output voltage 24 V (adjustable)
- Operating temperature range -40°C to +70°C
- Efficiency 91%
- Active PFC
- Overload 140%
- Excellent long lasting overvoltage withstand (up to 550 VAC)
- Compact size in aluminum enclosure
- Dimensions: 73 x 140 x 125 mm

APPLICATIONS

- Automation
- Process control
- Telecom
- Renewable energy applications

1. MODEL SELECTION

MODEL	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE	MAX OUTPUT CURRENT	EFFICIENCY	MAX OUTPUT POWER
LDN480-24	200 - 240 VAC (250 - 375 VDC)	24 V	20 A	91 %	480 W

2. INPUT SPECIFICATIONS.

PARAMETER		DESCRIPTION / CONDITIONS	SPECIFICATION
AC Input Voltage		Nominal (UL certified) Range	200 - 240 VAC 187 - 264 VAC
DC Input Voltage		Only with 240 V selected	250 - 375 VDC
Input Frequency			47 - 63 Hz 400 Hz
AC Input Current	Vin = 200 VAC Vin = 240 VAC		2.9 A 2.5 A
DC Input Current	Vin = 250 VDC Vin = 375 VDC		2.2 A 1.5 A
Power Factor Correction		Active	> 0.9
Inrush Peak Current I^2t		Peak Current measured after 0.2 ms from main connection; 240 VAC / 50 Hz; Ta = 25°C; Cold Start	≤ 29 A 0.61 A^2s
Touch (Leakage) Current			≤ 0.5 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 6.3 AT or MCB 6 A C curve or MCB 4 A D curve

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Output Voltage (Adjustable)		23 - 28 VDC
Output Current (continuous)		20 A
Load Regulation		≤ 1 %
Ripple & Noise	20 MHz BW probe terminated with a 0.1 µF MKP parallel capacitor	≤ 50 mVpp
Hold-up Time		≥ 50 ms
Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1 A)	
Parallel Connection	Possible for redundancy (with external ORing module)	

4. PROTECTIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Short Circuit Protection	Hiccup mode, Short circuit peak current	50 A
Overload Protection	Hiccup mode, Overload limit	28 A
Thermal Protection		
Over Voltage Protection		≥ 33 VDC

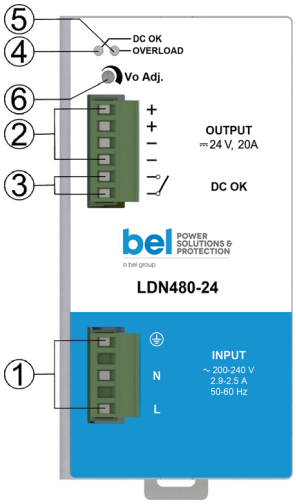
5. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	UL certified up to 45°C Start-up type tested: - 40°C, possible at Vnom with load deration.	-40 to +70 °C
Storage Temperature		-40 to +80 °C
Derating	Over 45°C	- 10 W/°C
Dissipated Power		< 48 W
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	65 496 (7.4) hrs (years)
MTBF	MIL-HDBK-217F at Ta = 25°C, full load	> 500 000 hrs
Overvoltage Category	EN 50178	III
Pollution Degree	IEC 60664-1	2
Protection Class	Class I	
Isolation	Input to Output Input to Ground Output to Ground	4.2 kVDC 2.2 kVDC 0.75 kVDC
Safety Standards & Approvals	UL 508 (certified) IEC/EN 61010-1 IEC/EN 61010-2-201 IEC/EN 60950	
EMC Emissions	EN 55011 / CISPR 11 EN 55022 / CISPR 22 EN 61000-3-2	Class A Class A Class A
EMC Immunity	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-11	Level 3 Level 3 Level 4 Level 3 Level 2
Protection Degree	EN 60529	IP20
Vibration Sinusoidal	IEC 60068-2-6	5-17.8 Hz: ±1.6 mm; 17.8-500 Hz: 2 g 2 Hours / axis (X,Y,Z)
Shock	IEC 60068-2-27	30 g 6 ms, 20 g 11 ms; 3 bumps / direction, 18 bumps total

6. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		73 x 140 x 125 mm 2.85 x 5.51 x 4.92 in
Weight		1000 g
Mounting Rail	IEC 60715/H15/TH35-7.5(-15)	
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm²
Case Material	Aluminum	

7. PIN LAYOUT & DESCRIPTION



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

INPUT CONNECTION	**Single phase** L = Line N = Neutral ⏚ = Earth ground	**DC Input** L = + Positive DC N = - Negative DC ⏚ = Earth ground
OUTPUT CONNECTION	+ = Positive DC - = Negative DC	
SIGNALLING	DC OK: dry contact • NO • COM	

8. MECHANICAL DRAWING

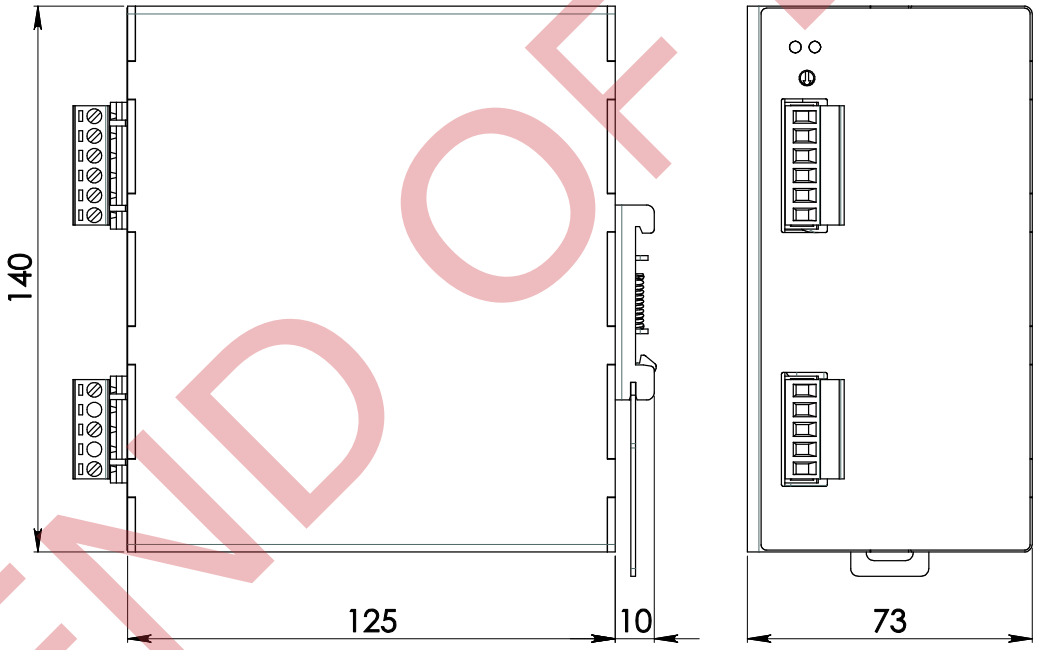


Figure 1. Mechanical Drawing

Notes:

Technical parameters are typical, measured in laboratory environment at 25°C and 240 VAC / 50 Hz, at nominal values, after minimum 5 minutes of operation. Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range. Contact factory for details.

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.

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