LDN481 Series

480W DIN Rail Switching Power Supply



LDN481 Series is a single phase DIN Rail Switching Power Supply 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 easy installation makes it ideal for various industrial applications.

LDN481 Series is Class I isolation device suitable for SELV and PELV circuitry (up to 48 VDC models) and is designed to be mounted on DIN rail and installed inside a protective enclosure.

RoHS Compliant

Key Features & Benefits

- High efficiency
- Compact size
- Overload 150%
- Constant current or Hiccup mode limitation, user settable
- Easy parallelable for power increase
- Natural convection cooling
- RoHS Compliant

Applications

- Industrial automation
- Heavy duty applications
- Process control
- Building automation and general purpose

bel POWER SOLUTIONS & PROTECTION
a bel group

belpowersolutions.com

1. MODEL SELECTION

MODEL	INPUT VOLTAGE	# of PHASES	OUTPUT VOLTAGE	OUTPUT CURRENT
LDN481-24	90-132 / 187-264 VAC (270 - 345 VDC)	1	24 VDC	20 A
LDN481-48	90-132 / 187-264 VAC (270 - 345 VDC)	1	48 VDC	10 A
LDN481-72	90-132 / 187-264 VAC (270 - 345 VDC)	1	72 VDC	6.7 A

2. INPUT SPECIFICATIONS

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.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input AC Voltage Range	Rated (UL certified) Settable with Voltage Selector Bridge Operating	120 / 240 VAC 90 – 132 / 187 – 264 VAC
Input DC Voltage Range	Rated (without Voltage Selector Bridge)	270 – 345 VDC
Input Frequency		47 – 63 Hz
Input AC Current	Vin = 120 VAC Vin = 240 VAC	7.2 A 4.3 A
Input DC Current	Vin = 270 VDC Vin = 345 VDC	2.2 A 1.9 A
Inrush Peak Current		≤ 35 A
Touch (Leakage) Current		≤ 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 AT 16A or MCB 16A C

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		480 W
Rated Voltage (Adjustable Voltage Range)	LDN481-24 LDN481-48 LDN481-72	24 VDC (23 – 28 VDC) 48 VDC (45 – 55 VDC) 72 VDC (72 – 85 VDC)
Continuous Current	LDN481-24 LDN481-48 LDN481-72	20 A 10 A 6.7 A
Overload Limit (Constant Current Mode)	LDN481-24 LDN481-48 LDN481-72	22 A 11 A 7.5 A
Overload Limit (Hiccup Mode) Max. 5 s	LDN481-24 LDN481-48 LDN481-72	30 A 15 A 10 A
Load Regulation	LDN481-24 LDN481-48 / LDN481-72	≤ 1.0% ≤ 0.5%
Ripple & Noise[1]	LDN481-24 / LDN481-48 LDN481-72	≤ 100 mVpp ≤ 200 mVpp
Hold up Time		≥ 35 ms
Protections	Overload, short circuit: Constant current or Hiccup mode (user settable) Thermal protection Output overvoltage	
Output Over Voltage Protection	LDN481-24 LDN481-48 LDN481-72	≥ 33 VDC ≥ 68 VDC ≥ 100 VDC

Status Signals	DC OK - green LED DC OK - dry contact (NO, 24 VDC / 1 A)	
Parallel Connection[2]	Possible for power or redundancy (with external ORing module)	
Efficiency	LDN481-24 LDN481-48 LDN481-72	> 91% > 91.5% > 92%
Dissipated Power	LDN481-24 LDN481-48 LDN481-72	< 48 W < 45 W < 42 W

[1] Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor.

[2] 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	UL certified up to 45°C (Start-up type tested: - 40°C)[3]	- 40 to + 70°C
Storage Temperature		- 40 to + 80°C
Derating		- 7.2 W/°C over 45°C
Humidity	Non-condensing	5 - 95% RH
Life time Expectancy	At 25°C ambient 75% load	64000 h (7.3 years)
Overvoltage Category Pollution Degree		III (EN50178) 2 (IEC60664-1)
Protection Class		Class I
Isolation Voltage	Input to Output Input to Ground Output to Ground	4.2 kVDC 2.2 kVDC 0.75 kVDC
Safety Standards & Approvals	UL508 (certified E356563) EN60950 (reference) EN50178 (reference)	
EMC Emission	EN55011 (CISPR11) EN55022 (CISPR22)	Class A Class A
EMC Immunity	EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-11	Level 3 Level 3 Level 3 Level 3 Level 2
Protection Degree	EN60529	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

[3] Possible at nominal voltage with load derating.

5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		1300 g
Dimensions (W x D x H)		80 x 127 x 137.5 mm
Mounting Rail		IEC 60715/H15/TH35-7.5(-15)
Connection Terminals	Screw type header (24 - 12 AWG)	1.5 - 6 mm²
Case Material	Aluminum	

© 2016 Bel Power Solutions & Protection

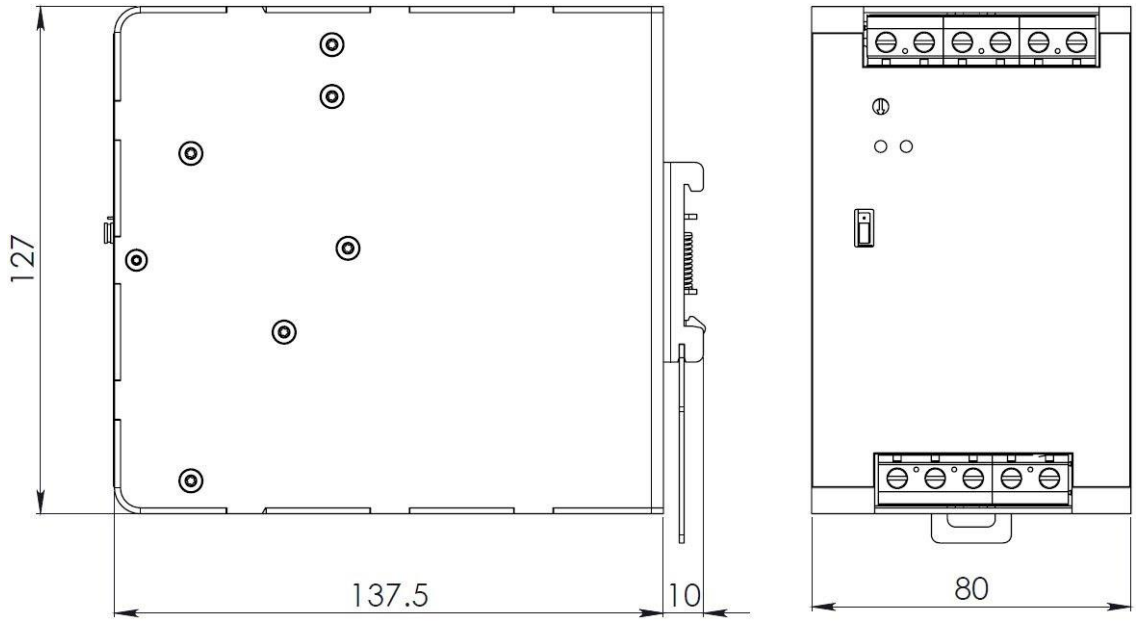
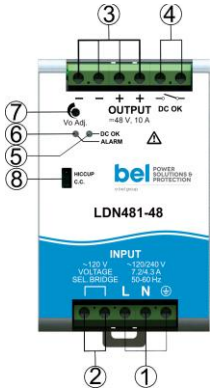


Figure 1. Mechanical Drawing

6. PIN LAYOUT & DESCRIPTION



PIN	DESCRIPTION
1	AC/DC input
2	Wire bridge for 120 VAC
3	DC output (load)
4	Diagnostic Output (dry contact, NC output OK)
5	Green LED: Output OK
6	Red LED: Overload
7	Output voltage adjustment
8	Selectable limitation mode (Hiccup mode, C.C. mode)

INPUT CONNECTION	OUTPUT CONNECTION
Single phase: L = Line N = Neutral ⏚ = Earth ground 120 VAC Bridge used only when used at 120 VAC	+ = Positive DC - = Negative DC
DC: L = + Positive DC N = - Negative DC ⏚ = Earth ground	Signaling: DC OK: dry contact NO COM

For more information on these products consult: 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.