

# LDC480 Series

## 480W DIN Rail Switching Power Supply

LDC480 Series is a single phase, extremely compact Power Supply with active PFC specially designed for space sensitive and demanding applications.

Its compact size, high efficiency, excellent reliability together with easy installation makes it ideal for various industrial applications.

LDC480 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.



### Key Features & Benefits

- High efficiency and extremely compact size
- Only 56 mm width aluminum enclosure
- Active PFC
- Overload 150%
- Constant current or hiccup mode limitation, user settable
- Wide range of output voltage
- Easy parallelable for power increase
- Up to 60°C operating temperature with no derating

### Applications

- Industrial Control
- Communication
- Instrumentation Equipment
- Renewable energy
- High reliability applications

## 1. MODEL SELECTION

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	REDUNDANCY
LDC480-24	120 - 240 VAC (110 - 345 VDC)	24 VDC	20 A	
LDC480-24P	120 - 240 VAC (110 - 345 VDC)	24 VDC	20 A	Includes internal ORing diode
LDC480-36	120 - 240 VAC (110 - 345 VDC)	36 VDC	15 A	
LDC480-36P	120 - 240 VAC (110 - 345 VDC)	36 VDC	15 A	Includes internal ORing diode
LDC480-48	120 - 240 VAC (110 - 345 VDC)	48 VDC	10 A	
LDC480-48P	120 - 240 VAC (110 - 345 VDC)	48 VDC	10 A	Includes internal ORing diode
LDC480-72	120 - 240 VAC (110 - 345 VDC)	72 VDC	6.7 A	
LDC480-72P	120 - 240 VAC (110 - 345 VDC)	72 VDC	6.7 A	Includes internal ORing diode

## 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 Operating	120 – 240 VAC 90 - 264 VAC
Input DC Voltage Range	Rated	110 - 345 VDC
Input Frequency Range		47 - 63 Hz
Input AC Current		Vin = 120 VAC 4.8 A Vin = 230 VAC 2.4 A
Input DC Current		Vin = 110 VDC 4.9 A Vin = 345 VDC 1.7 A
Power Factor Correction	Active	> 0.9
Inrush Peak Current		≤ 35 A
Touch (Leakage) Current		≤ 0.9 mA
Internal Protection Fuse	Not user replaceable	8 AT
Recommended External Protection	It is strongly recommended to provide external surge arresters (SPD) according to local regulations.	Fuse 10 AT or MCB 10 A C curve

## 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		480 W
Rated Voltage (Adjustable Output Voltage Range)	LDC480-24 LDC480-36 LDC480-48 LDC480-72	24 VDC (22 - 29 VDC) 36 VDC (34 - 39 VDC) 48 VDC (45 - 55 VDC) 72 VDC (70 - 85 VDC)
Continuous Current	LDC480-24 LDC480-36 LDC480-48 LDC480-72	20 A 15 A 10 A 6.7 A
Overload Limit (Constant Current Mode)	LDC480-24 LDC480-36 LDC480-48 LDC480-72	21 A 16 A 12 A 7 A
Overload Limit (Hiccup mode) (max. 5 s)	LDC480-24 LDC480-36 LDC480-48 LDC480-72	30 A 20 A 17 A 12 A

Load Regulation	LDC480-24 / LDC480-36 LDC480-48 / LDC480-72	≤ 1.5% ≤ 0.5%
Ripple & Noise <sup>1</sup>	LDC480-24 / LDC480-36 LDC480-48 / LDC480-72	≤ 150 mVpp ≤ 50 mVpp
Hold up Time		≥ 25 ms
Protections	Overload, short circuit, with constant current or hiccup mode (user settable) Thermal protection Input undervoltage lockout Output overvoltage	
Output Over Voltage Protection	LDC480-24 LDC480-36 LDC480-48 LDC480-72	≥ 33 VDC ≥ 45 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>2</sup>	Possible for power or redundancy (with external ORing module) P (models) - include internal ORing circuit	
Efficiency	LDC480-24 / LDC480-36 LDC480-48 / LDC480-72	> 93% > 94%
Dissipated Power	LDC480-24 / LDC480-36 LDC480-48 / LDC480-72	< 36.5 W < 31 W

<sup>1</sup> Ripple and Noise are measured with 20 MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor.

<sup>2</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	UL certified up to 50°C at 120 VAC or up to 60°C at 240 VAC (Start-up type tested: - 40°C) <sup>3</sup>	- 40° to + 70°C	
Storage Temperature		- 40° to + 80°C	
Derating		- 7.6 W / °C over 50°C at 120 VAC - 7.2 W / °C over 60°C at 240 VAC	
Humidity	Non condensing	5 - 95% RH	
Life Time Expectancy	At 25°C ambient, full load	167953 h (19.1 years)	
Overvoltage Category		III (EN50178)	
Pollution Degree		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) EN60950 (reference) EN50178 (reference)		
EMC Standards	Emission	EN55011 (CISPR11)	Class B
		EN55022 (CISPR22)	Class B
		EN61000-3-2	Class A
	Immunity	EN61000-4-2	Level 3
		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: 2 g 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>3</sup> Possible with load derating.



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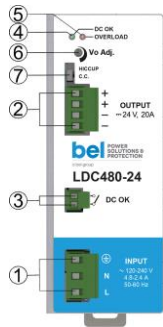
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5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		1.1 kg
Dimensions (W x H x D)		56 x 140 x 117 mm
Mounting Rail		IEC 60715/H15/TH35-7.5(-15)
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm <sup>2</sup>
Case Material	Aluminum	

6. 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
7	Selectable limitation mode (Hiccup mode, C.C. mode)

INPUT CONNECTION	OUTPUT CONNECTION
Single phase: L = Line N = Neutral ⊕ = Earth ground	+ = Positive DC - = Negative DC
DC: L = + Positive DC N = - Negative DC ⊕ = Earth ground	Signaling: DC OK: dry contact NO COM

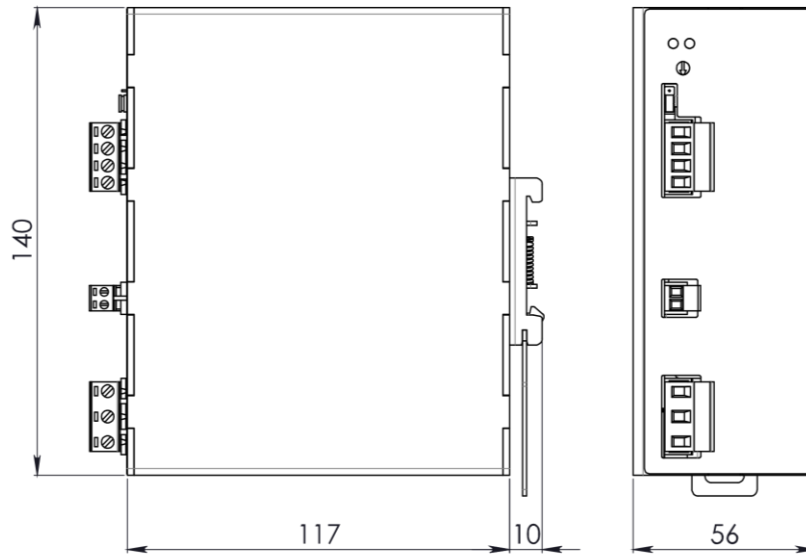


Figure 1. Mechanical Drawing

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.

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