

# 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
- Overall dimensions: 56 x 140 x 117 mm (2.2 x 5.5 x 4.6 in)
- 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
- All models available as version **PH**
- Models with suffix **P** - internal ORing diode included
- Models with suffix **H** - enhanced transient overvoltage protection (> 6 kV) included

### Applications

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

## 1. MODEL SELECTION

MODEL*	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	MODEL OPTIONS
LDC480-24	120 - 240 VAC (110 - 345 VDC)	24 VDC	20 A	<b>P</b> = internal ORing diode included (LDC480-24 <b>P</b> )
LDC480-36	120 - 240 VAC (110 - 345 VDC)	36 VDC	15 A	<b>H</b> = enhanced transient overvoltage protection (> 6 kV) included (LDC480-48 <b>H</b> )
LDC480-48	120 - 240 VAC (110 - 345 VDC)	48 VDC	10 A	<b>PH</b> = both, internal ORing diode and enhanced transient overvoltage protection included (LDC480-72 <b>PH</b> )
LDC480-72	120 - 240 VAC (110 - 345 VDC)	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 * Operating	120 – 240 VAC 90 - 264 VAC
Input DC Voltage Range	Rated	110 - 345 VDC
Input Frequency Range		47 - 63 Hz
Input AC Current	LDC480-24 LDC480-48 LDC480-72	Vin = 120 VAC 2.4 A
	LDC480-36	Vin = 230 VAC 5.5 A 1.9 A
Input DC Current	LDC480-24 LDC480-48 LDC480-72	Vin = 110 VDC 1.7 A
	LDC480-36	Vin = 345 VDC 5.3 A 1.9 A
Power Factor Correction	Active	> 0.9
Inrush Peak Current / I <sup>2</sup> t	Measured after 0.2 ms from main connection; 240 VAC / 50 Hz; Ambient temp. at 25°C; Cold Start	≤ 23 A / 0.56 A <sup>2</sup> s
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

\* Models with suffix H and models LDC480-36, LDC480-36P are not UL508 certified.

### 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		480 W
Rated Voltage (Adjustable Output Voltage Range)	LDC480-24	24 VDC (22 - 29 VDC)
	LDC480-36	36 VDC (32 - 40 VDC)
	LDC480-48	48 VDC (45 - 55 VDC)
	LDC480-72	72 VDC (70 - 85 VDC)
Continuous Current	LDC480-24	20 A
	LDC480-36	14 A
	LDC480-48	10 A
	LDC480-72	6.7 A
Overload Limit (Constant Current Mode)	LDC480-24	21 A
	LDC480-36	16 A
	LDC480-48	12 A
	LDC480-72	7 A
Overload Limit (Hiccup mode) (max. 5 s)	LDC480-24	30 A
	LDC480-36	20 A
	LDC480-48	17 A
	LDC480-72	12 A
Load Regulation	LDC480-24	≤ 1.5 %
	LDC480-36	≤ 1.0 %
	LDC480-48 / LDC480-72	≤ 0.5 %
Ripple & Noise <sup>1</sup>	LDC480-24	≤ 150 mVpp
	LDC480-36 / LDC480-48	≤ 200 mVpp
	LDC480-72	≤ 350 mVpp
Hold up Time	LDC480-24 / LDC480-48 / LDC480-72	≥ 25 ms
	LDC480-36	≥ 20 ms
Protections	Overload, short circuit, with constant current or hiccup mode (user settable)	
	Thermal protection	
	Input undervoltage lockout	
Output Over Voltage Protection	Output overvoltage	
	LDC480-24	≥ 33 VDC
	LDC480-36	≥ 51 VDC
	LDC480-48	≥ 68 VDC
Status Signals	LDC480-72	≥ 100 VDC
	DC OK - green LED	
	OVERLOAD - red LED	
Parallel Connection <sup>2</sup>	DC OK - dry contact (NO, 24 VDC / 1 A)	
	Possible for power or redundancy (with external ORing module)	
Efficiency	P (models) - include internal ORing circuit	
	LDC480-24	> 93%
Dissipated Power	LDC480-36 / LDC480-48 / LDC480-72	> 94%
	LDC480-24	< 36.5 W
	LDC480-36	< 32.5 W
	LDC480-48 / LDC480-72	< 31 W

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

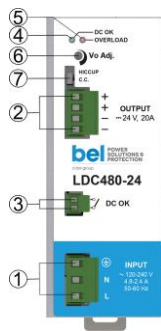
<sup>2</sup> Pay attention, set the current limitation mode jumper on C.C. mode when connecting more units in parallel.

**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 with load derating)	- 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	167 953 h (19.1 years)
MTBF	MIL-HDBK-217F; at 25°C ambient full load	> 600 000 h
Overvoltage Category	EN50178	III
Pollution Degree	IEC60664-1	2
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	Class B Class B Class A
	Immunity	Level 3 Level 3 Level 4 Level 4 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

#### 5. 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

## 6. 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	

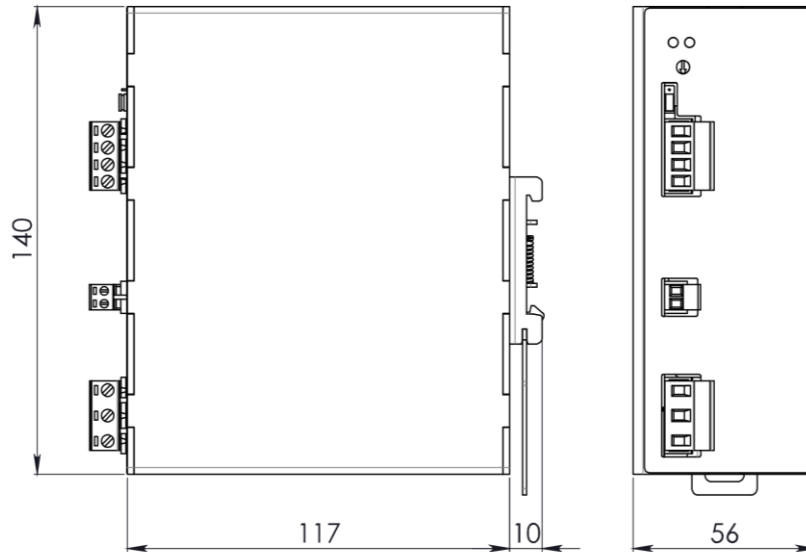


Figure 1. Mechanical Drawing

**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.



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