

LDW480 Series

480W DIN Rail Switching Power Supply

LDW480 Series are single, two or three phase DIN Rail Switching Power Supplies with active PFC.

Its compact size, high efficiency, excellent reliability together with easy installation due to pluggable connectors makes it market leader for various industrial, telecom and renewable energy applications.

LDW480 Series are Class I isolation devices suitable for SELV and PELV circuitry and are designed to be mounted on DIN rail and installed inside a protective enclosure.



Key Features & Benefits

- High efficiency
- Single, two or three phase input AC 187 – 550 VAC
- Wide DC input range 250 – 725 VDC
- Active PFC for optimal efficiency
- Compact size
- 150% overload capability
- RoHS Compliant

Applications

- Industrial Control
- Communication
- Instrumentation Equipment
- Renewable

1. MODEL SELECTION

MODEL	INPUT VOLTAGE	# of PHASES	OUTPUT VOLTAGE	OUTPUT CURRENT	REDUNDANCY
LDW480-24	200 - 500 VAC (250 - 725 VDC)	1 / 2 / 3	24 VDC	20 A	No ORing diode
LDW480-48	200 - 500 VAC (250 - 725 VDC)	1 / 2 / 3	48 VDC	10 A	No ORing diode
LDW480-72	200 - 500 VAC (250 - 725 VDC)	1 / 2 / 3	72 VDC	6 A	No ORing diode

2. INPUT SPECIFICATIONS

Specifications are measured at 25°C, at 400 VAC / 50 Hz, typical unless otherwise stated.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input AC Voltage Range	Rated, single, two or three phase, UL certified Operating	200 – 500 VAC 187 - 550 VAC
Input DC Voltage Range	Rated	250 – 725 VDC
Input Frequency Range		47 - 63 Hz
Input AC Current	Single or two phase @ 200 VAC	2.9 A
	Single or two phase @ 500 VAC	1.3 A
	Three phase @ 200 VAC	1.8 A
	Three phase @ 500 VAC	0.8 A
Input DC Current	V _{in} = 250 VAC	2.1 A
	V _{in} = 725 VAC	0.8 A
Inrush Peak Current		< 60 A
Continuous overvoltage protection		No damage up to 550 VAC / 725 VDC
Internal Protection Fuse	None, external fuse must be provided	
External Protection on AC Line	It is strongly recommended to provide external surge arresters (SPD) according to local regulations.	Fuse AT 6.3A or MCB 6 A C curve or 4 A D curve

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		480 W
Rated Voltage (Voltage Adjustment Range)	LDW480-24	24 VDC (23 – 28 VDC)
	LDW480-48	48 VDC (45 – 55 VDC)
	LDW480-72	72 VDC (72 – 85 VDC)
Continuous Current	LDW480-24	20 A
	LDW480-48	10 A
	LDW480-72	6 A
Overload Limit	LDW480-24	28 A
	LDW480-48	14 A
	LDW480-72	9 A
Short Circuit Peak Current	LDW480-24	50 A
	LDW480-48	25 A
	LDW480-72	12 A
Load Regulation		≤ 1%
Ripple & Noise	LDW480-24 / LDW480-48	≤ 50 mVpp
	LDW480-72	≤ 100 mVpp
Hold up Time		> 50 ms
Efficiency	LDW480-24 / LDW480-48	> 92%
	LDW480-72	> 91%
Dissipated Power	LDW480-24 / LDW480-48	< 42 W
	LDW480-72	< 42.5 W

Output Over Voltage Protection	LDW480-24 LDW480-48 LDW480-72	> 33 VDC > 68 VDC > 100 VDC
Parallel Connection		Possible with external ORing diode
Protections	Hiccup at the overload limit with auto reset Over temperature Overvoltage	
Status Signals	Green LED = DC OK Red LED = Overload Dry contact (1 A / 30 V)	

4. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION	
Operating Temperature	UL certified up to 45°C (Start-up type tested: - 40°C) ¹	- 40 to + 70°C	
Storage Temperature		- 40° C to + 80° C	
Derating		- 10 W /° C over 45°C	
Humidity	Non-condensing	5 - 95% RH	
Life Time Expectancy	At 25°C ambient, full load	65496 h (7.4 years)	
Overvoltage Category		III	
Pollution Degree		2 (IEC 664-1)	
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)		
EMC Standards	Emission	EN55022:2010 (CISPR22)	Class A
		EN55011:2009/A1:2010	Class A
		EN61000-3-2:2014	Class A
	Immunity	EN61000-4-2:2008	Level 3
		EN61000-4-3:2006 /A2:2010	Level 3
		EN61000-4-4:2012	Level 3
	EN61000-4-5:2014	Level 3	
	EN61000-4-11:2004 /A1:2010	Level 2	
Protection Degree	EN60529:1989 / A:2013	IP20	
Vibration Sinusoidal		IEC 60068-2-6:2007 (5-17.8 Hz: ±1.6 mm; 17.8-500 Hz: 2g 2Hours / axis (X, Y, Z)	
Shock		IEC 60068-2-27:2008 (30 g 6 ms, 20 g 11 ms; 3 bumps / direction, 18 bumps total)	

¹ Possible with load derating.

5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		1000 g
Dimensions (W x H x D)		73 x 140 x 125 mm
Mounting Rail		IEC 60715/H15/TH35-7.5(-15)
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm ²
Case Material	Aluminum	

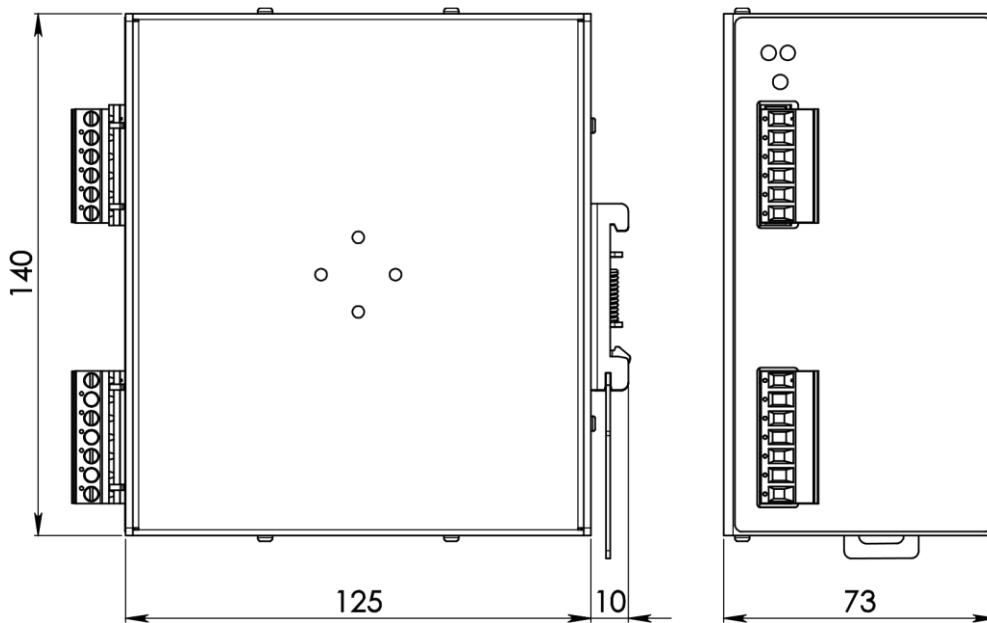
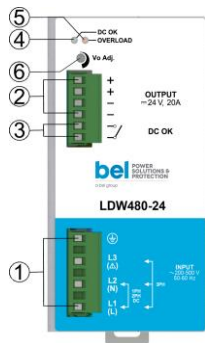


Figure 1. Mechanical Drawing

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

INPUT CONNECTION	OUTPUT CONNECTION
Single phase: L = Line N = Neutral ⊕ = Earth ground	+ = Positive DC - = Negative DC Dry contact = NC
2 phase: L1 = Phase 1 L2 = Phase 2 ⊕ = Earth ground	
3 phase: L1 = Phase 1 L2 = Phase 2 L3 = Phase 3 ⊕ = Earth ground	
DC: L1(N) = + Positive DC L2(L) = - Negative DC L3 = do not connect ⊕ = Earth ground	

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.