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 makes it ideal for various industrial, telecom and renewable energy applications.

LDW480 Series are Class I isolation devices suitable for SELV and PELV circuitry (up to 48 VDC models) and are designed to be mounted on DIN rail and installed inside a protective enclosure.

RoHS Compliant

Key Features & Benefits

- High efficiency
- Only 73 mm width aluminum enclosure
- 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

Technical parameters are typical, measured in laboratory environment at 25°C and 400 VAC / 50 Hz, at nominal values, after minimum 5 minutes of operation.

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	With single, two or three phase With single or two phase only	47 - 63 Hz 400 Hz
Input AC Current	Single or two phase @ 200 VAC Single or two phase @ 500 VAC Three phase @ 200 VAC Three phase @ 500 VAC	2.9 A 1.3 A 1.8 A 0.8 A
Input DC Current	Vin = 250 VAC Vin = 725 VAC	2.1 A 0.8 A
Power Factor Correction	Active	> 0.9
Inrush Peak Current		≤ 60 A
Touch (Leakage) Current		≤ 0.6 mA
Continuous Overvoltage Protection		No damage up to 550 VAC / 725 VDC
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 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 LDW480-48 LDW480-72	24 VDC (23 – 28 VDC) 48 VDC (45 – 55 VDC) 72 VDC (72 – 85 VDC)
Continuous Current	LDW480-24 LDW480-48 LDW480-72	20 A 10 A 6 A
Overload Limit	LDW480-24 LDW480-48 LDW480-72	28 A 14 A 9 A
Short Circuit Peak Current	LDW480-24 LDW480-48 LDW480-72	50 A 25 A 12 A
Load Regulation		≤ 1%
Ripple & Noise[1]	LDW480-24 / LDW480-48 LDW480-72	≤ 50 mVpp ≤ 100 mVpp
Hold up Time		≥ 50 ms
Protections	Overload, short circuit: Hiccup mode Thermal protection Output overvoltage	

Output Over Voltage Protection	LDW480-24 LDW480-48 LDW480-72	≥ 33 VDC ≥ 68 VDC ≥ 100 VDC
Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1A)	
Parallel Connection	Possible for redundancy (with external ORing module)	
Efficiency	LDW480-24 / LDW480-48 LDW480-72	> 92% > 91%
Dissipated Power	LDW480-24 / LDW480-48 LDW480-72	< 42 W < 42.5 W

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

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)[2]	- 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 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) EN60950 (reference) EN50178 (reference)	
EMC Standards	Emission	EN55011 (CISPR11) EN55022 (CISPR22)	Class A Class A
	Immunity	EN61000-3-2 EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-11	Class A Level 3 Level 3 Level 3 Level 3 Level 2
Protection Degree		EN60529	IP20
Vibration Sinusoidal		IEC 60068-2-6	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	IEC 60068-2-27:2008 (30 g 6 ms, 20 g 11 ms; bumps / direction, 18 bumps total)

[2] 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 mm²
Case Material	Aluminum	

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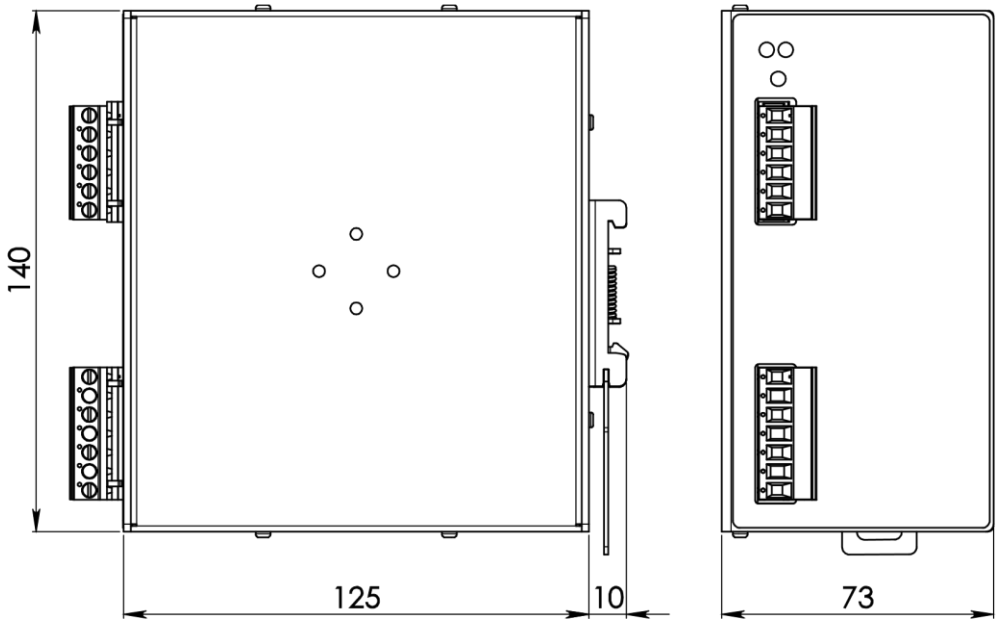
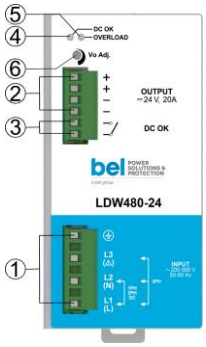


Figure 1. Mechanical Drawing

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
2 phase: L1 = Phase 1 L2 = Phase 2 ⏚ = Earth ground	
3 phase: L1 = Phase 1 L2 = Phase 2 L3 = Phase 3 ⏚ = Earth ground	Signaling: DC OK: dry contact NO COM
DC: L1(L) = + Positive DC L2(N) = - 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.