

# LDW120 Series

## 120W DIN Rail Switching Power Supply

LDW120 Series are single or two phase AC or DC input DIN Rail Switching Power Supplies.

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.

LDW120 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
- Wide input range
- Power boost of 150% during overload
- Threshold controlled alarm contact
- Electronic protection against overload and short circuit
- Front pluggable screw terminals for easier wiring and maintenance
- Thermal protection
- RoHS Compliant

### Applications

- Industrial Control
- Communication
- Instrumentation Equipment
- Renewable

## 1. MODEL SELECTION

MODEL	INPUT VOLTAGE	# of PHASES	OUTPUT VOLTAGE	OUTPUT CURRENT	REDUNDANCY
LDW120-12	200 - 500 VAC (250 - 725 VDC)	1 / 2	12 - 15 VDC	8 - 7 A	No ORing diode
LDW120-24	200 - 500 VAC (250 - 725 VDC)	1 / 2	24 VDC	5 A	No ORing diode
LDW120-48P	200 - 500 VAC (250 - 725 VDC)	1 / 2	48 VDC	2.5 A	Internal ORing diode

## 2. INPUT SPECIFICATIONS

Specifications are measured at 25°C, at 2x 400 VAC, typical unless otherwise stated.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input AC Voltage	Nominal 1-2 Phases (UL certified) Range	200 - 500 VAC 187 - 550 VAC
Input Frequency		47 - 63 Hz
Input DC Voltage	Rated (UL certified)	250 - 725 VDC (300 - 500 VDC)
Input AC Current	Vin = 240 VAC Vin = 500 VAC	1.4 A 0.7 A
Input DC Current	Vin = 250 VAC Vin = 725 VAC	0.8 A 0.3 A
Inrush Peak Current		< 40 A
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.	MCB 6A C curve or 6A D curve

## 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		120 W
Rated Voltage (Voltage Adjustment Range)	LDW120-12 LDW120-24 LDW120-48P	12 - 15 VDC (12 - 15 VDC) 24 VDC (23 - 28 VDC) 48 VDC (45 - 55 VDC)
Continuous Current (Uout nom)	LDW120-12 LDW120-24 LDW120-48P	8 - 7 A 5 A 2.5 A
Overload Limit	LDW120-12 LDW120-24 LDW120-48P	> 10 A per 30 s > 7.5 A per 30 s > 3.75 A per 30 s
Short Circuit Peak Current	LDW120-12 LDW120-24 / LDW120-48P	> 20 A per 300 ms > 14 A per 300 ms
Load Regulation		< 1%
Ripple		≤ 110 mVpp
Hold up Time	Vin = 240 VAC Vin = 400 VAC	≥ 17 ms ≥ 60 ms
Efficiency	LDW120-12 LDW120-24 LDW120-48P	> 81 - 84% > 88% > 86%
Dissipated Power	LDW120-12 LDW120-24 LDW120-48P	< 25 - 20 W < 17 W < 19.5 W
Output Over Voltage Protection	LDW120-12 LDW120-24 LDW120-48P	> 18 VDC > 33 VDC > 68 VDC

Redundant Parallel Connection		(P) models include internal ORing circuit
Protections	Hiccup at the overload limit with auto reset Over temperature Overvoltage Green LED = DC OK	
Status Signals	Red LED = Overload Dry contact (1 A / 30 V)	

Note: Power rating, losses, efficiency, ripple, thermal behaviour may change outside of the nominal rated input range.

#### 4. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature	Overtemperature protection, UL certified up to 45°C (Start-up type tested: - 40°C <sup>1</sup> )	- 40 to + 70°C
Derating		- 1.2 W/°C over 60°C
Storage temperature		- 40 °C - + 80°C
Humidity	Non-condensing	5 - 95% RH
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) UL60950 (certified for LDW120-24 model) EN60950 (reference)	
EMC Standards	Emission	EN55022:2010 (CISPR22)
		EN55011:2009/A1:2010
		EN61000-4-2:2008
	Immunity	EN61000-4-3:2006 /A2:2010
		EN61000-4-4:2012
		EN61000-4-5:2014
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)	

#### 5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		500 g
Dimensions (W x H x D)		40.0 x 115.0 x 110.0 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	

<sup>1</sup> Possible at nominal voltage with load deration.

##### Notes:

Technical parameters are typical, measured in laboratory environment at 25°C and 400Vac / 50Hz.

Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range. Contact factory for details.

Data may change without prior notice in order to improve the product.

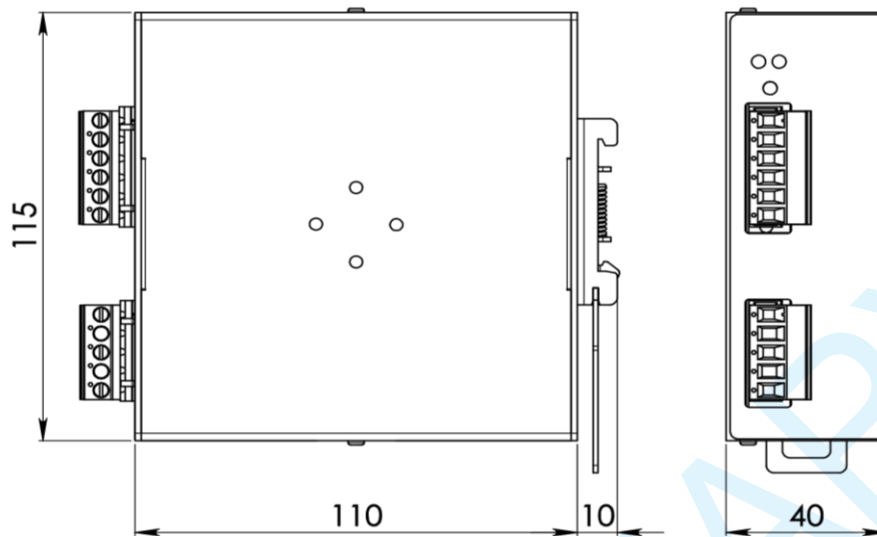
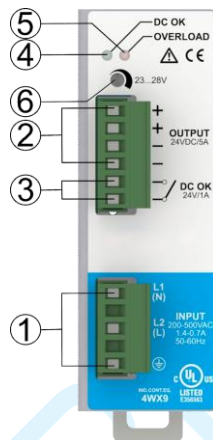


Figure 1. Mechanical Drawing

## 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 I = Earth ground	+ = Positive DC - = Negative DC Dry contact = NC
2 phase: L1 = Phase 1 L2 = Phase 2 I = Earth ground	
DC: L1(N) = +/- L2(L) = -/+ I = Earth ground	

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.