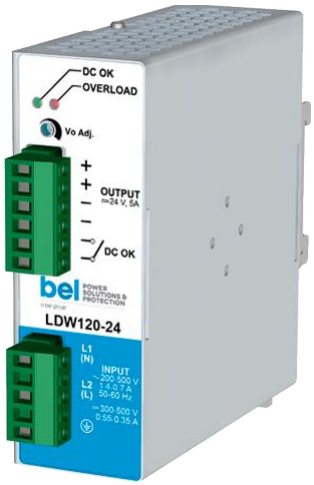
LDW120 Series

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 makes it ideal 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.



RoHS Compliant

Key Features & Benefits

- High efficiency and compact size
- Only 40 mm width aluminum enclosure
- Single or two phase input AC 187 - 550 VAC
- Wide DC input range 250 - 725 VDC
- Overload 150%
- Excellent reliability
- 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 (300 - 500 VDC)	1 / 2	12 – 15 VDC	8 – 7 A	
LDW120-24	200 - 500 VAC (300 - 500 VDC))	1 / 2	24 VDC	5 A	
LDW120-48P	200 - 500 VAC (300 - 500 VDC)	1 / 2	48 VDC	2.5 A	Includes internal 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 or two phase, UL certified Operating		200 – 500 VAC 187 - 550 VAC
Input DC Voltage Range	Rated, UL certified Operating		300 – 500 VDC 250 – 725 VDC
Input Frequency Range			47 - 63 Hz
Input AC Current		Vin = 200 VAC Vin = 500 VAC	1.4 A 0.7 A
Input DC Current		Vin = 250 VDC Vin = 300 VDC Vin = 500 VDC Vin = 725 VDC	0.8 A 0.55 A 0.35 A 0.3 A
Inrush Peak Current			≤ 40 A
Touch (Leakage) Current			≤ 1 mA
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.		MCB 6 A C curve or 6 A 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	LDW120-12 LDW120-24 LDW120-48P		8 - 7 A 5 A 2.5 A
Overload Limit (30 s)	LDW120-12 LDW120-24 LDW120-48P		10 A 7.5 A 3.75 A
Short Circuit Peak Current	LDW120-12 LDW120-24 / LDW120-48P		20 A 14 A
Load Regulation			≤ 1%
Ripple & Noise[1]			≤ 110 mVpp
Hold up Time		Vin = 240 VAC Vin = 400 VAC	≥ 17 ms ≥ 60 ms
Protections	Overload, short circuit: Hiccup mode Over temperature Overvoltage		
Output Over Voltage Protection	LDW120-12 LDW120-24 LDW120-48P		≥ 18 VDC ≥ 33 VDC ≥ 68 VDC

Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1 A)	
Parallel Connection	Possible for redundancy (with external ORing module) P (models) - include internal ORing circuit	
Efficiency	LDW120-12 LDW120-24 LDW120-48P	> 81% > 88% > 86%
Dissipated Power	LDW120-12 LDW120-24 LDW120-48P	< 25 W < 17 W < 19.5 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 - + 80°C
Derating			- 1.2 W / °C over 60°C
Humidity		Non-condensing	5 - 95% RH
Life Time Expectancy		At 25°C ambient, full load	84914 h (9.6 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	EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-11	Level 3 Level 3 Level 3 Level 4 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; 3 bumps / direction, 18 bumps total)

[2] Possible with load derating.

5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		500 g
Dimensions (W x H x D)		40 x 115 x 110 mm
Mounting Rail		IEC 60715/H15/TH35-7.5(-15)
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm²
Case Material	Aluminum	

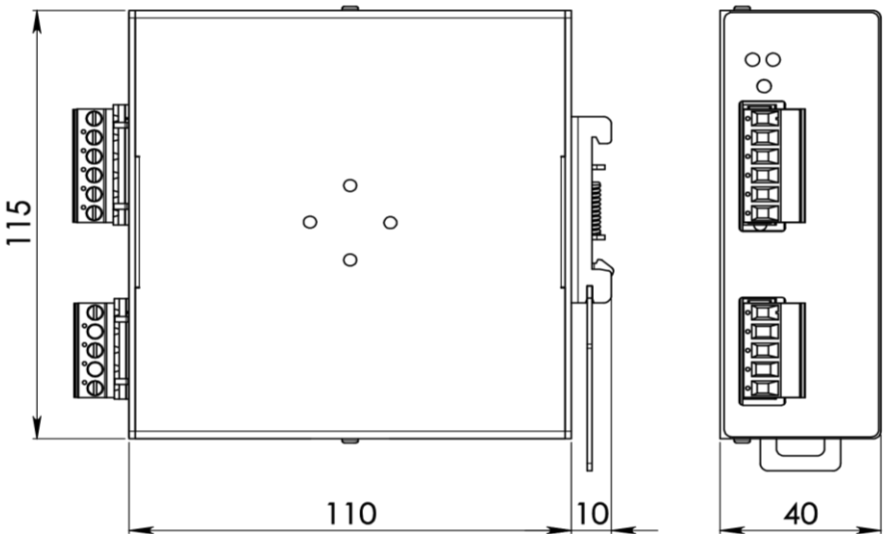
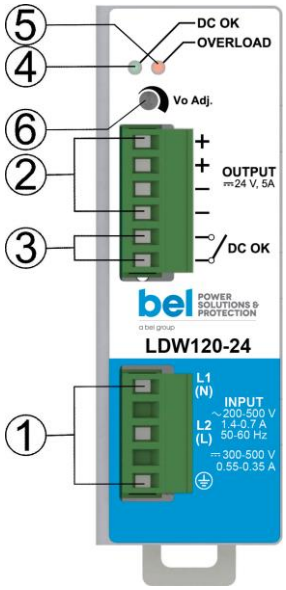


Figure 1. Mechanical Drawing

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

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