LDW120 Series

120 W Wide Input Range DIN Rail Power Supply

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LDW120 Series are single or two phase wide input range DIN rail power supplies.

Their compact size, high efficiency, excellent reliability together with easy installation make them ideal for various industrial, telecom and renewable energy applications.

LDW120 Series are Class I isolation devices and are designed to be mounted on DIN rail and installed inside a protective enclosure.



FEATURES

- 1 or 2 phase AC input 187 - 550 VAC
- Wide DC input voltage range 250 - 725 VDC
- Output voltages 12 V 24 V, 48 V (adjustable)
- Operating ambient temperature range -40°C to +70°C
- Efficiency up to 88%
- Overload 150%
- Excellent field reliability record
- Compact size in aluminum enclosure
- Dimensions: 40 x 115 x 110 mm

APPLICATIONS

- Industrial control equipment
- Telecom
- Renewable energy applications

Please read our datasheet & drawing disclaimer here.

1. MODEL SELECTION

MODEL	INPUT VOLTAGE RANGE	# OF PHASES	OUTPUT VOLTAGE	MAX OUTPUT CURRENT	EFFICIENCY	MAX OUTPUT POWER
LDW120-12	200 - 500 VAC (250 - 725 VDC)	1 / 2	12 - 15 V	8 - 7 A	81 - 84 %	120 W
LDW120-24	200 - 500 VAC (250 - 725 VDC)	1 / 2	24 V	5 A	88 %	120 W
LDW120-48P[1]	200 - 500 VAC (250 - 725 VDC)	1 / 2	48 V	2.5 A	86 %	120 W

[1] P models include internal ORing diode

2. INPUT SPECIFICATIONS.

PARAMETER		DESCRIPTION / CONDITIONS	SPECIFICATION
AC Input Voltage		Nominal 1 / 2 phases (UL certified) Range	200 - 500 VAC 187 - 550 VAC
DC Input Voltage		UL certified Range	300 - 500 VDC 250 - 725 VDC
Input Frequency			47 - 63 Hz
AC Input Current	Vin = 200 VAC		1.4 A
	Vin = 500 VAC		0.7 A
DC Input Current	Vin = 250 VDC		0.8 A
	Vin = 725 VDC		0.3 A
Inrush Peak Current I^2t		Peak Current measured after 0.2 ms from main connection; 400 VAC / 50 Hz; Ta = 25°C; Cold Start	≤ 21 A 0.28 A^2s
Touch (Leakage) Current			≤ 1.0 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 MCB 6 A D curve

3. OUTPUT SPECIFICATIONS

PARAMETER		DESCRIPTION / CONDITIONS	SPECIFICATION
Output Voltage (Adjustable)		12 V model 24 V model 48 V model	12 - 15 VDC 23 - 28 VDC 45 - 55 VDC
Output Current (continuous)		12 V model 24 V model 48 V model	8 - 7 A 5 A 2.5 A
Load Regulation			≤ 1.0 %
Ripple & Noise[2]			≤ 110 mVpp
Hold-up Time	Vin = 240 VAC Vin = 400 VAC		≥ 17 ms ≥ 60 ms
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	

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

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4. PROTECTIONS

PARAMETER	DESCRIPTION / CONDITIONS		SPECIFICATION
Short circuit protection	Hiccup mode, Short Circuit Peak Current:	12 V model 24 V & 48 V models	20 A 14 A
Overload protection	Hiccup mode, Overload Limit (30 s):	12 V model 24 V model 48 V model	10 A 7.5 A 3.75 A
Thermal protection			
Over voltage protection		12 V model 24 V model 48 V model	≥ 18 VDC ≥ 33 VDC ≥ 68 VDC

5. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	UL certified up to 45°C Start-up type tested: - 40°C, possible at Vnom with load deration.	-40 to +70 °C
Storage Temperature		-40 to +80 °C
Derating	No derating up to 60°C, over 60°C	- 1.2 W/°C
Dissipated Power	12 V model 24 V model 48 V model	< 25 - < 20 W < 17 W < 19.5 W
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	84 914 (9.6) hrs (years)
MTBF	MIL-HDBK-217F at Ta = 25°C, full load	> 500 000 hrs
Overvoltage Category	EN 50178	III
Pollution Degree	IEC 60664-1	2
Protection Class	Class I	
Isolation	Input to Output Input to Ground Output to Ground	4.2 kVDC 2.2 kVDC 0.75 kVDC
Safety Standards & Approvals	UL 508 (certified) IEC/EN 61010-1 IEC/EN 61010-2-201 IEC/EN 60950	
EMC Emissions	EN 55011 / CISPR 11 EN 55022 / CISPR 22	Class A Class A
EMC Immunity	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-11	Level 3 Level 3 Level 3 Level 4 Level 2
Protection Degree	EN 60529	IP20
Vibration Sinusoidal	IEC 60068-2-6	5 - 17.8 Hz: ±1.6 mm; 17.8 - 500 Hz: 2 g 2 hours / axis (X,Y, Z)
Shock	IEC 60068-2-27	30 g 6 ms, 20 g 11 ms; 3 bumps / direction, 18 bumps total

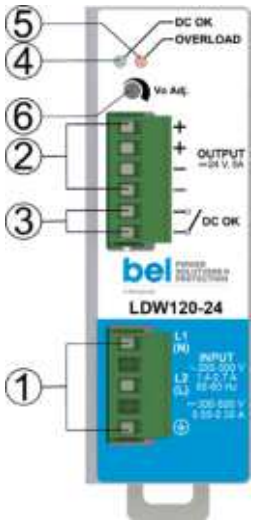
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6. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		40 x 115 x 110 mm 1.57 x 4.53 x 4.33 in
Weight		500 g
Mounting Rail	IEC 60715/H15/TH35-7.5(-15)	
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm²
Case Material	Aluminum	

7. 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	**Single-phase**	**Two-phase**	**DC Input**
	L = Line N = Neutral ⏚ = Earth ground	L1 = Phase 1 L2 = Phase 2 ⏚ = Earth ground	L2(L) = + Positive DC L1(N) = - Negative DC ⏚ = Earth ground
OUTPUT CONNECTION	+ = Positive DC - = Negative DC		
SIGNALLING	DC OK: dry contact • NO • COM		

8. MECHANICAL DRAWING

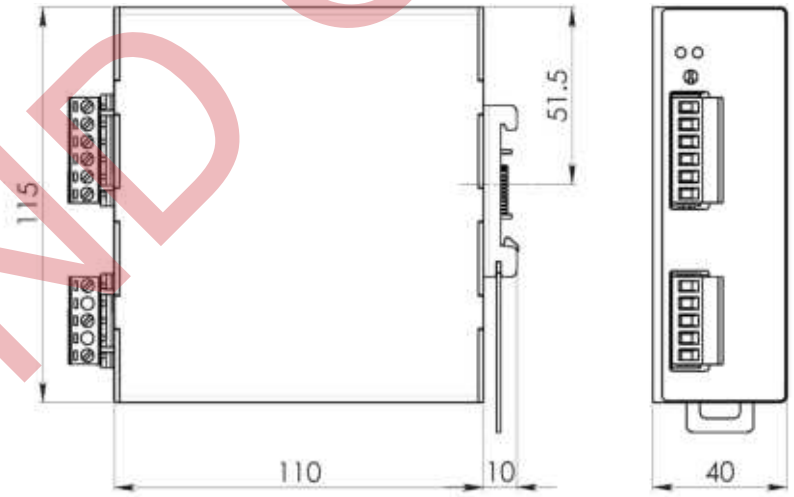


Figure 1. Mechanical Drawing

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Notes:

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

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.