

LDD120 Series

120W DIN Rail DC-DC Converter

The LDD family of DC/DC converters is an optimal response to the applications where compactness and high reliability are requested. All are isolated and offer a wide range of input voltages.

Simple but elegant look and easy installation make them ideal for various industrial applications.



Key Features & Benefits

- High efficiency and compact size
- Isolated topology
- Wide Input voltage range
- Overload 125%
- Up to 50°C operating temperature with no derating

Applications

- Industrial machine control
- Process control
- Energy management
- Remote control systems

1. MODEL SELECTION

MODEL	INPUT VOLTAGE	INPUT CURRENT	OUTPUT VOLTAGE	OUTPUT CURRENT
LDD120-1212	12 VDC (10.5 - 18 VDC)	14 A - 8.0 A	12 VDC	7 A
LDD120-1224	12 VDC (10.5 - 18 VDC)	15.5 A - 9.0 A	24 VDC	5 A
LDD120-1248	12 VDC (10.5 - 18 VDC)	15.5 A - 9.0 A	48 VDC	2.5 A
LDD120-2412	24 VDC (18 - 36 VDC)	7.5 A - 3.8 A	12 VDC	7 A
LDD120-2424	24 VDC (18 - 36 VDC)	8.5 A - 4.3 A	24 VDC	5 A
LDD120-4812	48 VDC (36 - 72 VDC)	4.5 A - 2.5 A	12 VDC	8 A
LDD120-4824	48 VDC (36 - 72 VDC)	4.3 A - 2.2 A	24 VDC	5 A

2. INPUT SPECIFICATIONS

Technical parameters are typical, measured in laboratory environment at 25°C and nom. values, after min. 5 minutes of operation.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input DC Voltage Range	LDD120-1212 / LDD120-1224 / LDD120-1248	12 VDC (10.5 - 18 VDC)
	LDD120-2412 / LDD120-2424	24 VDC (18 - 36 VDC)
	LDD120-4812 / LDD120-4824	48 VDC (36 - 72 VDC)
Input DC Current	LDD120-1212 Vin = Min Vin = Max	14 A 8.0 A
	LDD120-1224 / LDD120-1248 Vin = Min Vin = Max	15.5 A 9.0 A
	LDD120-2412 Vin = Min Vin = Max	7.5 A 3.8 A
	LDD120-2424 Vin = Min Vin = Max	8.5 A 4.3 A
	LDD120-4812 Vin = Min Vin = Max	4.5 A 2.5 A
	LDD120-4824 Vin = Min Vin = Max	4.3 A 2.2 A
Input Overvoltage Protection (active)	LDD120-1212 / LDD120-1224 / LDD120-1248 LDD120-2412 / LDD120-2424 LDD120-4812 / LDD120-4824	19 VDC 38 VDC 76 VDC
Internal Protection Fuse (not user replaceable)	LDD120-1212 / LDD120-1224 / LDD120-1248 LDD120-2412 / LDD120-2424 LDD120-4812 LDD120-4824	Fuse 20 AT Fuse 10 AT Fuse 8 AT Fuse 5 AT
Recommended External Protection (use DC rated devices)	LDD120-1212 / LDD120-1224 / LDD120-1248 LDD120-2412 / LDD120-2424 LDD120-4812 / LDD120-4824	> MCB 25 A C curve > MCB 13 A C curve > MCB 6 A C curve

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		120 W
Rated Voltage (Adjustable Voltage Range)	LDD120-1212 / LDD120-2412 / LDD120-4812	12 VDC (12 - 15 VDC)
	LDD120-1224 / LDD120-2424 / LDD120-4824	24 VDC (23 - 27.5 VDC)
	LDD120-1248	48 VDC (45 - 55 VDC)
	LDD120-1212	7 A
Continuous Current	LDD120-1224	5 A
	LDD120-1248	2.5 A
	LDD120-2412	7 A
	LDD120-2424	5 A
	LDD120-4812	8 A
	LDD120-4824	5 A
	LDD120-1212	9.0 A
Overload Limit	LDD120-1224	7.0 A
	LDD120-1248	3.3 A
	LDD120-2412	9.0 A
	LDD120-2424	6.5 A
	LDD120-4812	12 A
	LDD120-4824	6.5 A
	LDD120-1212 / LDD120-1224	11.5 A
Short Circuit Peak Current	LDD120-1248	5.8 A
	LDD120-2412	14 A
	LDD120-2424	10 A
	LDD120-4812	20 A
	LDD120-4824	12 A
Load Regulation	LDD120-1212 / LDD120-1224 / LDD120-1248 / LDD120-2412 / LDD120-2424 / LDD120-4812	≤ 0.5%
	LDD120-4824	≤ 1.5%
Ripple & Noise ¹	LDD120-1212 / LDD120-1224 / LDD120-1248	≤ 20 mVpp
	LDD120-2412	≤ 50 mVpp
	LDD120-2424 / LDD120-4812	≤ 20 mVpp
	LDD120-4824	≤ 30 mVpp
Hold up Time	LDD120-1212	≥ 4 ms
	LDD120-1224 / LDD120-1248 / LDD120-2412 / LDD120-2424	≥ 3 ms
	LDD120-4812	≥ 5 ms
	LDD120-4824	≥ 6 ms
Output Over Voltage Protection	LDD120-1212 / LDD120-2412 / LDD120-4812	≥ 18 VDC
	LDD120-1224 / LDD120-2424 / LDD120-4824	≥ 33 VDC
	LDD120-1248	≥ 68 VDC
Parallel Connection	Possible for redundancy (with external ORing module)	
Protections	Overload/short circuit: Hiccup mode	
	Thermal protection	
	Output overvoltage	
Status Signals	DC OK - Green LED (all models)	
	OVERLOAD - Status Signals red LED (LDD120-4812 only)	
	DC OK dry contact (NO, 24 VDC / 1 A) (LDD120-4812 only)	
Efficiency	LDD120-1212	> 81%
	LDD120-1224	> 82%
	LDD120-1248	> 83%
	LDD120-2412 / LDD120-2424	> 86%
	LDD120-4812 / LDD120-4824	> 89%
	LDD120-1212	< 20 W
Dissipated Power	LDD120-1224	< 25 W
	LDD120-1248	< 24 W
	LDD120-2412	< 14 W
	LDD120-2424	< 20 W
	LDD120-4812	< 15 W
	LDD120-4824	< 16 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	Overtemperature protection (Start-up type tested: - 40°C)*	- 40 to + 70°C
Derating		- 3 W/°C over 50°C
Storage Temperature		- 40 to + 80°C
Humidity	Non-condensing	5 - 95% RH non condensing
Life Time Expectation	AT 25°C ambient	64000 h (7.3 years)
Overvoltage Category		I (EN50178)
Pollution Degree		2 (IEC60664-1)
Protection Class		Class I
Isolation Voltage	Input to Output Input to Ground Output to Ground	2.1 kVDC 1.41 kVDC 0.75 kVDC
Safety Standards & Approvals	UL508 (reference) EN60950 (reference) EN50178 (reference)	
EMC Standards	Emission	EN55022 Class A
		EN55011 Class A
	Immunity	EN61000-4-2 Level 3
		EN61000-4-3 Level 3
		EN61000-4-4 Level 2
		EN61000-4-5 Level 2
Protection Degree	EN60529	IP20
Vibration sinusoidal	IEC 60068-2-6	5-17.8 Hz: ±1.6 mm; 17.8-500 Hz: 2 g 2Hours / axis (X,Y,Z)
Shock	IEC 60068-2-27	30 g 6 ms, 20 g 11 ms; 3 bumps / direction, 18 bumps total

* Possible at nominal voltage with load derating.

5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		0.5 kg
Dimensions		54 x 115 x 110 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	

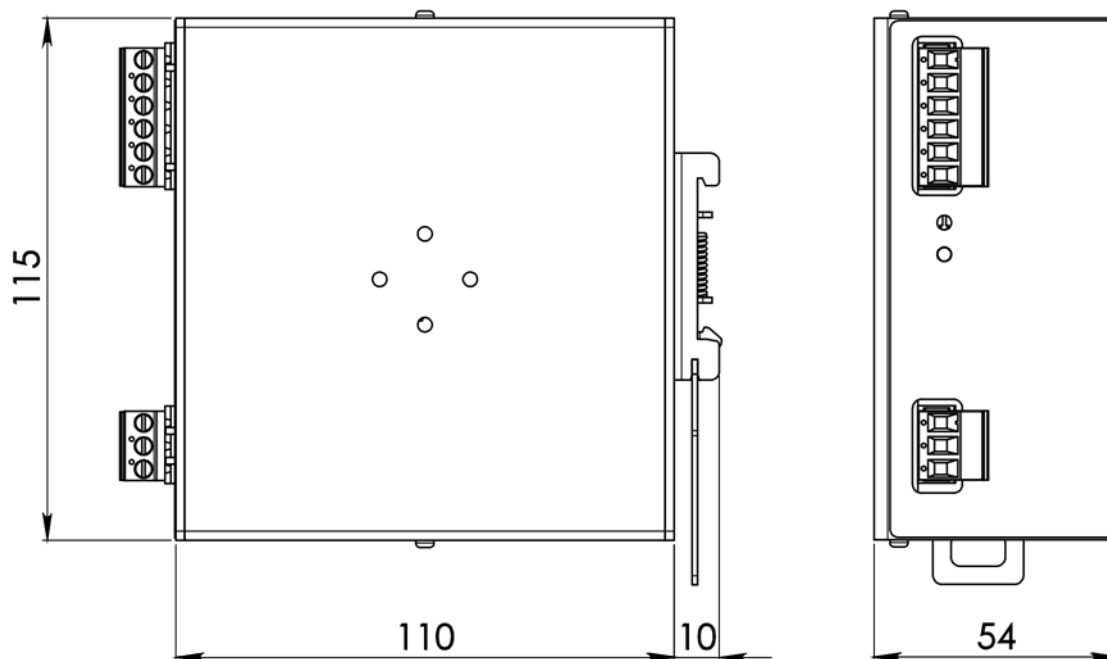
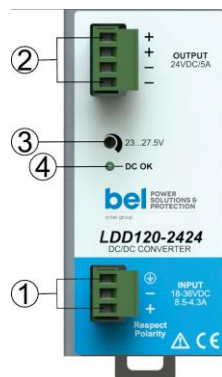


Figure 1. Mechanical Drawing

6. PIN LAYOUT & DESCRIPTION



PIN	DESCRIPTION
1	DC input
2	DC output (Load)
3	Output voltage adjustment
4	Green LED: Output OK

INPUT CONNECTION	OUTPUT CONNECTION
+ = Positive DC	+ = Positive DC
- = Negative DC	- = Negative DC
⊕ = Earth ground	
	Signalling: DC OK (dry contact) NO COM

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.