

# LDC120 Series

## 120W DIN Rail Switching Power Supply

LDC120 Series is a single phase high performance ultra compact DIN Rail Power Supply with active PFC, ideal for many applications.

Its compact size, high efficiency, excellent reliability together with easy installation makes it ideal for various industrial applications.

LDC120 Series is Class I isolation device suitable for SELV and PELV circuitry and is designed to be mounted on DIN rail and installed inside a protective enclosure.



### Key Features & Benefits

- High efficiency
- Extremely compact size
- Active PFC for optimal efficiency
- Overload 150%
- Up to 60°C operating temperature with no derating
- Constant Current or Hiccup mode limitation, user settable
- Wide range of output voltage
- Easy parallelable for power increase
- Includes models with internal ORing
- Only 35 mm width aluminum enclosure



### Applications

- Industrial Control
- Communication
- Instrumentation Equipment



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## 1. MODEL SELECTION

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	REDUNDANCY
LDC120-24	120 - 240 VAC (110 - 345 VDC)	24 VDC	5 A	
LDC120-24P	120 - 240 VAC (110 - 345 VDC)	24 VDC	5 A	Includes internal ORing diode
LDC120-48	120 - 240 VAC (110 - 345 VDC)	48 VDC	2.5 A	
LDC120-48P	120 - 240 VAC (110 - 345 VDC)	48 VDC	2.5 A	Includes internal ORing diode

## 2. INPUT SPECIFICATIONS

Technical parameters are typical, measured in laboratory environment at 25°C and 240 VAC / 50 Hz, at nominal values, after minimum 5 minutes of operation.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input AC Voltage Range	Rated, UL certified Operating	120 – 240 VAC 90 - 264 VAC
Input DC Voltage Range	Rated	110 - 345 VDC
Input Frequency Range		47 - 63 Hz
Input AC Current		Vin = 120 VAC 1.4 A Vin = 240 VAC 0.7 A
Input DC Current		Vin = 110 VDC 1.4 A Vin = 345 VDC 0.5 A
Power Factor Correction	Active	> 0.9
Inrush Peak Current		≤ 45 A
Touch (Leakage) Current		≤ 0.5 mA
Internal Protection Fuse	Not user replaceable	3.15 AT
Recommended External Protection	It is strongly recommended to provide external surge arresters (SPD) according to local regulations.	Fuse 4 AT or MCB 4 A C curve

## 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		120 W
Rated Voltage (Adjustable Voltage Range)	LDC120-24 / LDC120-24P LDC120-48 / LDC120-48P	24 VDC (11.5 - 29 VDC) 48 VDC (23 - 56 VDC)
Continuous Current	LDC120-24 / LDC120-24P LDC120-48 / LDC120-48P	5 A 2.5 A
Overload Limit (Constant Current Mode)	LDC120-24 / LDC120-24P LDC120-48 / LDC120-48P	7.5 A 3.75 A
Overload Limit (Hiccup mode) (max. 5 s)	LDC120-24 / LDC120-24P LDC120-48 / LDC120-48P	15 A 7.5 A
Load Regulation	LDC120-24 LDC120-24P LDC120-48 LDC120-48P	≤ 1% ≤ 3% ≤ 0.5% ≤ 1.5%
Ripple & Noise <sup>1</sup>		≤ 60 mVpp
Hold-up Time		Vin = 120 VAC ≥ 20 ms Vin = 240 VAC ≥ 30 ms
Protections	Overload, short circuit, with constant current or hiccup mode (user settable) Thermal protection Input undervoltage lockout Output overvoltage	
Output Over Voltage Protection	LDC120-24 / LDC120-24P LDC120-48 / LDC120-48P	≥ 33 VDC ≥ 68 VDC

Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1 A)	
Parallel Connection <sup>2</sup>	Possible for power or redundancy (with external ORing module) P (models) - include internal ORing circuit	
Efficiency	LDC120-24 / LDC120-48 LDC120-24P / LDC120-48P	> 90% > 89%
Dissipated Power	LDC120-24 / LDC120-48 LDC120-24P / LDC120-48P	< 13.5 W < 15 W

<sup>1</sup> Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor.

<sup>2</sup> Pay attention, set the current limitation mode jumper on C.C. mode when connecting more units in parallel.

**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 60°C (Start-up type tested: - 35°C) <sup>3</sup>	- 35° to + 70°C		
Storage Temperature		- 40° to + 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	74640 h (8.5 years)		
Overvoltage Category		III (EN50178)		
Pollution Degree		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 B Class B Class A	
		Immunity	EN61000-3-2 EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-11	Level 3 Level 3 Level 3 Level 3 Level 3 Level 2
			Protection Degree	EN60529
	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	

<sup>3</sup> Possible with load derating.

## 5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		450 g
Dimensions (W x H x D)		35 x 103 x 104 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	

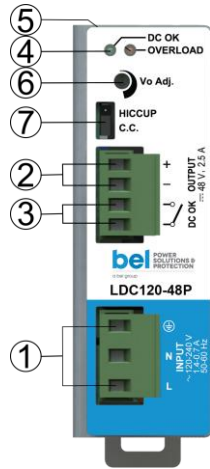


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6. PIN LAYOUT & DESCRIPTION



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
7	Selectable limitation mode (Hiccup mode, C.C. mode)

INPUT CONNECTION	OUTPUT CONNECTION
Single phase: L = Line N = Neutral ⊕ = Earth ground	+ = Positive DC - = Negative DC
DC: L = + Positive DC N = - Negative DC ⊕ = Earth ground	Signaling: DC OK: dry contact NO COM

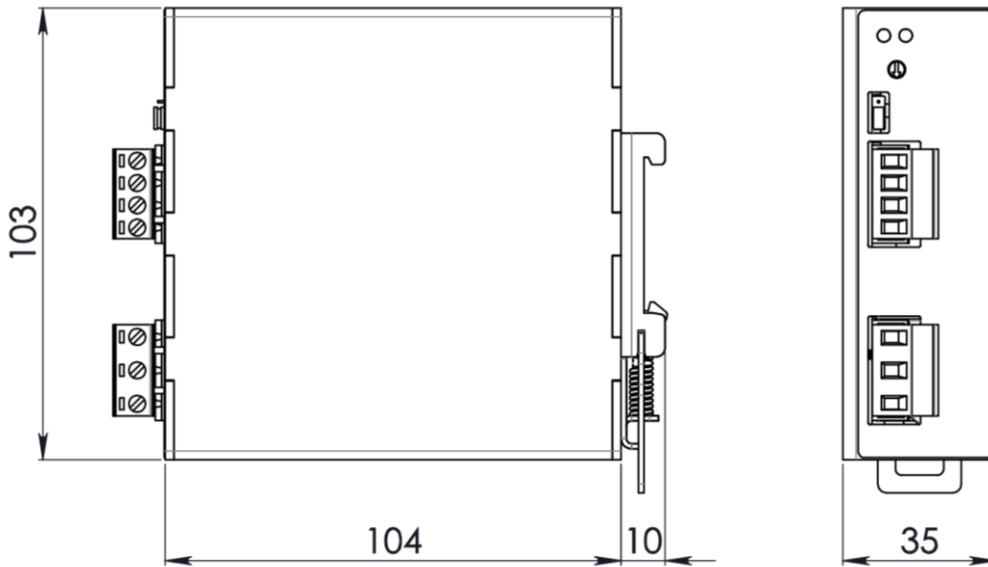


Figure 1. Mechanical Drawing

For more information on these products consult: [tech.support@psbel.com](mailto:tech.support@psbel.com)

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