LDC120 Series

120 W AC-DC DIN Rail Switching Power Supply

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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.

FEATURES

- Input voltage 90 - 264 VAC or 110 - 345 VDC
- Output voltage 24 V, 48 V (adjustable)
- Operating ambient temperature range -35°C to +70°C (up to 60°C with no derating)
- Efficiency up to 90%
- Active PFC
- Overload 150%
- Constant Current or Hiccup mode limitation (user settable)
- Easy parallelable for power increase
- Includes models with internal ORing
- Extremely compact size in aluminum enclosure
- Dimensions: 35 x 103 x 104 mm

APPLICATIONS

- Industrial control equipment
- Communication
- Instrumentation Equipment

Please read our datasheet & drawing disclaimer here.

1. MODEL SELECTION

MODEL	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE	MAX OUTPUT CURRENT	EFFICIENCY	REDUNDANCY	MAX OUTPUT POWER
LDC120-24	120 - 240 VAC (110 - 345 VDC)	24 V	5.0 A	90 %		120 W
LDC120-24P	120 - 240 VAC (110 - 345 VDC)	24 V	5.0 A	89 %	Internal ORing diode	120 W
LDC120-48	120 - 240 VAC (110 - 345 VDC)	48 V	2.5 A	90 %		120 W
LDC120-48P	120 - 240 VAC (110 - 345 VDC)	48 V	2.5 A	89 %	Internal ORing diode	120 W

2. INPUT SPECIFICATIONS.

PARAMETER		DESCRIPTION / CONDITIONS	SPECIFICATION
AC Input Voltage		Nominal (UL certified) Range	100 - 240 VAC 90 - 264 VAC
DC Input Voltage			110 - 345 VDC
Input Frequency			47 - 63 Hz
AC Input Current	Vin = 120 VAC Vin = 240 VAC		1.4 A 0.7 A
DC Input Current	Vin = 110 VDC Vin = 345 VDC		1.4 A 0.5 A
Power Factor Correction		Active	> 0.9
Inrush Peak Current I^2t		Peak Current measured after 0.2 ms from main connection; 240 VAC / 50 Hz; Ta = 25°C; Cold Start	≤ 32 A 0.49 A^2s
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 / CONDITIONS	SPECIFICATION
Output Voltage (Adjustable)	24 V models 48 V models	11.5 - 29 VDC 23 - 56 VDC
Output Current (continuous)	24 V models 48 V models	5 A 2.5 A
Load Regulation	LDC120-24 LDC120-24P LDC120-48 LDC120-48P	≤ 1 % ≤ 3 % ≤ 0.5 % ≤ 1.5 %
Ripple & Noise	20 MHz BW probe terminated with a 0.1 µF MKP parallel capacitor	≤ 60 mVpp
Hold-up Time	Vin = 120 VAC Vin = 240 VAC	≥ 20 ms ≥ 30 ms
Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1 A)	
Parallel connection [1]	Possible for power or redundancy (with external ORing module) P models - include internal ORing diode	

[1] *Pay attention, set the current limitation mode jumper on C.C. mode when connecting more units in parallel.*

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4. PROTECTIONS

PARAMETER	DESCRIPTION / CONDITIONS		SPECIFICATION
Short circuit protection	Constant current or Hiccup mode (user settable)		
Overload protection	Constant current Overload limit (user settable)	24 V models 48 V models	7.5 A 3.75 A
	Hiccup mode Overload limit (max. 5 s) (user settable)	24 V models 48 V models	7.5 A 3.75 A
Thermal protection			
Input under voltage lockout			
Over voltage protection		24 V models 48 V models	≥ 33 VDC ≥ 68 VDC

5. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	UL certified up to 60°C Start-up type tested: - 35°C, possible at Vnom with load deration.	-35 to +70 °C
Storage Temperature		-40 to +80 °C
Derating	Over 60°C	- 1.2 W/°C
Dissipated Power	LDC120-24 / LDC120-48 LDC120-24P / LDC120-48P	< 13.5 W < 15.0 W
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	74 640 (8.5) 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 IEC/EN 61010-1 IEC/EN 61010-2-201 IEC/EN 60950	
EMC Emissions	EN 55011 / CISPR 11 EN 61000-3-2	Class B 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 4 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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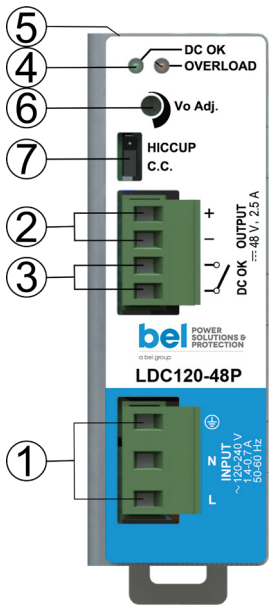
6. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		35 x 103 x 104 mm 1.38 x 4.05 x 4.09 in
Weight		450 g
Mounting Rail	IEC 60715/H15/TH35-7.5(-15)	
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm^2
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
7	Selectable limitation mode (Hiccup mode, C.C. mode)

INPUT CONNECTION	**Single phase**	**DC Input**
	L = Line	L =+ Positive DC
	N = Neutral	N = - Negative DC
	⏚ = Earth ground	⏚ = Earth ground
OUTPUT CONNECTION	+ = Positive DC - = Negative DC	
SIGNALLING	DC OK: dry contact • NO • COM	

8. MECHANICAL DRAWING

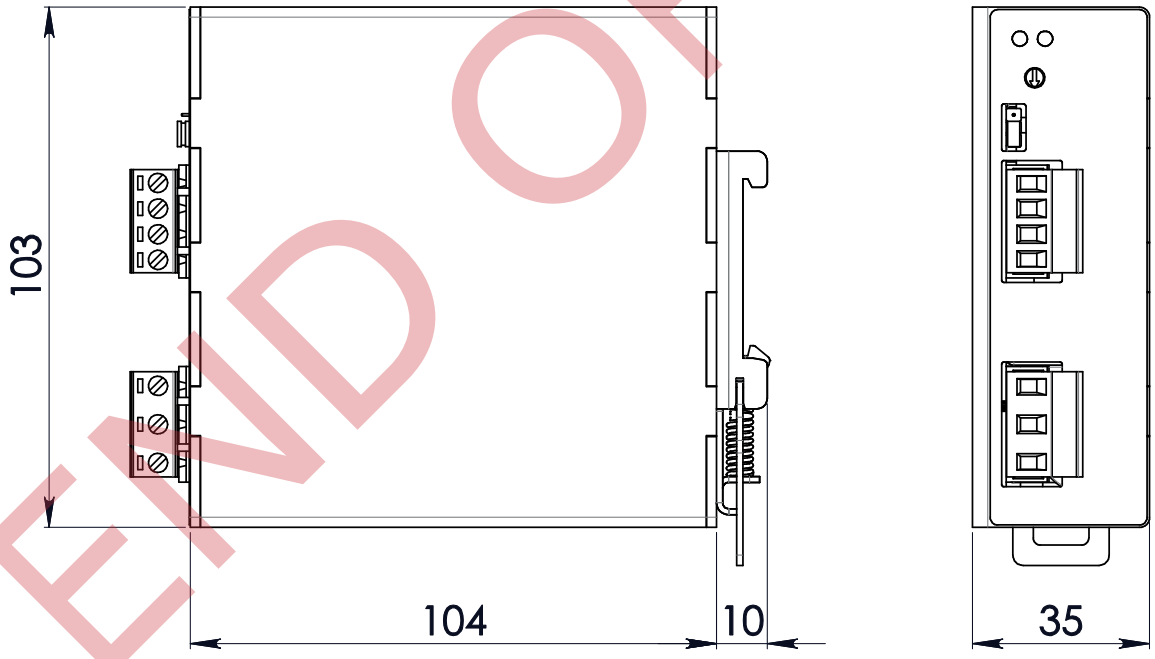


Figure 1. Mechanical Drawing

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Notes:

Technical parameters are typical, measured in laboratory environment at 25°C and 240 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.

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