

# LDC240 Series

## 240W DIN Rail Switching Power Supply

LDC240 Series is a single phase, ultra compact DIN Rail Switching 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.

LDC240 Series is Class I isolation device suitable for SELV and PELV circuitry (up to 48 VDC models) and is designed to be mounted on DIN rail and installed inside a protective enclosure.



### Key Features & Benefits

- High efficiency and extremely compact size
- Only 40 mm width aluminum enclosure
- Active PFC
- Overload 150%
- Constant current or hiccup mode limitation, user settable
- Wide range of output voltage
- Easy parallelable for power increase

### Applications

- Industrial Control
- Communication
- Instrumentation Equipment



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## 1. MODEL SELECTION

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	REDUNDANCY
LDC240-12	120 - 240 VAC (110 - 345 VDC)	12 VDC	15 A	
LDC240-12P	120 - 240 VAC (110 - 345 VDC)	12 VDC	15 A	Includes internal ORing diode
LDC240-24	120 - 240 VAC (110 - 345 VDC)	24 VDC	10 A	
LDC240-24P	120 - 240 VAC (110 - 345 VDC)	24 VDC	10 A	Includes internal ORing diode
LDC240-36	120 - 240 VAC (110 - 345 VDC)	36 VDC	7.5 A	
LDC240-36P	120 - 240 VAC (110 - 345 VDC)	36 VDC	7.5 A	Includes internal ORing diode
LDC240-48	120 - 240 VAC (110 - 345 VDC)	48 VDC	5 A	
LDC240-48P	120 - 240 VAC (110 - 345 VDC)	48 VDC	5 A	Includes internal ORing diode
LDC240-72	120 - 240 VAC (110 - 345 VDC)	72 VDC	3.3 A	
LDC240-72P	120 - 240 VAC (110 - 345 VDC)	72 VDC	3.3 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 2.4 A Vin = 240 VAC 1.2 A
Input DC Current	LDC240-12 LDC240-24 / LDC240-36 / LDC240-48 / LDC240-72	Vin = 110 VDC 2.5 A 2.6 A
	LDC240-12 LDC240-24 / LDC240-36 / LDC240-48 / LDC240-72	Vin = 345 VDC 1.2 A 0.9 A
Power Factor Correction	Active	> 0.9
Inrush Peak Current		≤ 45 A
Touch (Leakage) Current		≤ 0.6 mA
Internal Protection Fuse	Not user replaceable	6.3 AT
Recommended External Protection	It is strongly recommended to provide external surge arresters (SPD) according to local regulations.	Fuse 10 AT or MCB 10 A C curve

## 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power		240 W
Rated Voltage (Adjustable Output Voltage Range)	LDC240-12 LDC240-24 LDC240-36 LDC240-48 LDC240-72	12 VDC (12 - 15 VDC) 24 VDC (22 - 29 VDC) 36 VDC (34 - 39 VDC) 48 VDC (45 - 55 VDC) 72 VDC (70 - 85 VDC)

Continuous Current	LDC240-12	15 A
	LDC240-24	10 A
	LDC240-36	7.5 A
	LDC240-48	5 A
	LDC240-72	3.3 A
Overload Limit (Constant Current Mode)	LDC240-12	17 A
	LDC240-24	11 A
	LDC240-36	8.5 A
	LDC240-48	7 A
	LDC240-72	4 A
Overload Limit (Hiccup mode) (max. 5 s)	LDC240-12	20 A
	LDC240-24	15 A
	LDC240-36	10 A
	LDC240-48	8.5 A
	LDC240-72	5.5 A
Load Regulation	LDC240-12	≤ 2%
	LDC240-24 / LDC240-36 / LDC240-48 / LDC240-72	≤ 1%
Ripple & Noise <sup>1</sup>	LDC240-12	≤ 160 mVpp
	LDC240-24 / LDC240-36	≤ 260 mVpp
	LDC240-48	≤ 400 mVpp
	LDC240-72	≤ 550 mVpp
	LDC240-12	≥ 25 ms
Hold up Time	LDC240-24 / LDC240-36 / LDC240-48	≥ 20 ms
	LDC240-72	≥ 15 ms
	Overload, short circuit, with constant current or hiccup mode (user settable)	
Protections	Thermal protection	
	Input undervoltage lockout	
	Output overvoltage	
Output Over Voltage Protection	LDC240-12	≥ 18 VDC
	LDC240-24	≥ 33 VDC
	LDC240-36	≥ 45 VDC
	LDC240-48	≥ 68 VDC
	LDC240-72	≥ 100 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	LDC240-12	> 90%
	LDC240-24 / LDC240-36	> 93%
	LDC240-48 / LDC240-72	> 93.5%
Dissipated Power	LDC240-12	< 25 W
	LDC240-24 / LDC240-36	< 19 W
	LDC240-48 / LDC240-72	< 17 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 certificated up to 70°C (Start-up type tested: - 40°C) <sup>3</sup>	- 40° to + 70°C
Storage Temperature		- 40° to + 80°C
Derating	No derating	
Humidity	Non condensing	5 - 95% RH
Life Time Expectancy	At 25°C ambient, full load	221288 h (25.2 years)
Overvoltage Category		III (EN50178)
Pollution Degree		2 (IEC60664-1)
Protection Class		Class I
Isolation Voltage	Input to Output	4.2 kVDC
	Input to Ground	2.2 kVDC
	Output to Ground	0.75 kVDC

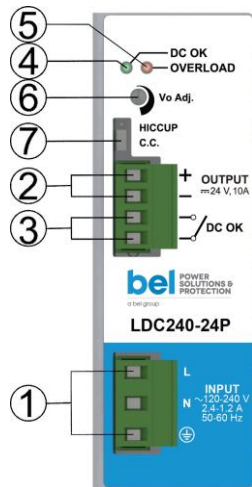
Safety Standards & Approvals	UL508 (certified) EN60950 (reference) EN50178 (reference)	
EMC Standards	Emission	EN55011 (CISPR11) Class B
		EN55022 (CISPR22) Class B
		EN61000-3-2 Class A
	Immunity	EN61000-4-2 Level 3
		EN61000-4-3 Level 3
		EN61000-4-4 Level 3
	EN61000-4-5 Level 4	
	EN61000-4-11 Level 2	
Protection Degree	EN60529	IP20
Vibration Sinusoidal	IEC 60068-2-6	5-17.8 Hz: $\pm 1.6$ 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		600 g
Dimensions (W x H x D)		40 x 115 x 110 mm
Mounting Rail		IEC 60715/H15/TH35-7.5(-15)
Connection Terminals	2.5 mm <sup>2</sup> , screw type pluggable (24 - 12 AWG)	
Case Material	Aluminum	

## 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	+ = Positive DC
N = Neutral	- = Negative DC
⊕ = Earth ground	
DC:	Signaling:
L = + Positive DC	DC OK: dry contact
N = - Negative DC	NO
⊕ = Earth ground	COM

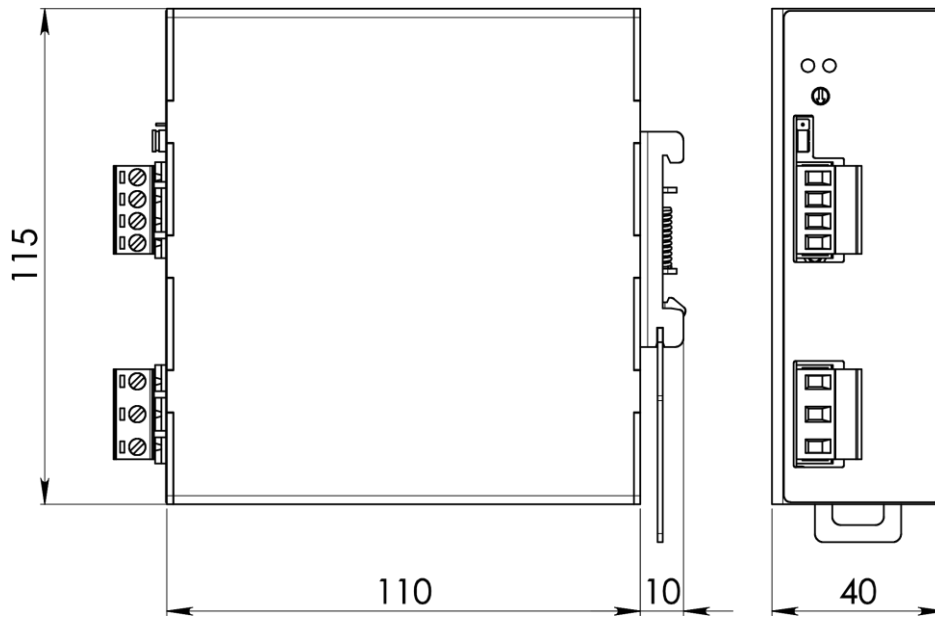


Figure 1. Mechanical Drawing

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**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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