LDN240 Series

240 W DIN Rail
Switching Power Supply

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LDN240 Series are single phase DIN Rail Switching Power Supplies, suitable for worldwide applications such as process control, heavy duty applications, but also building automation.

These units have received excellent market approval for their high efficiency, excellent reliability and compactness. Simple but elegant look and ease of installation due to pluggable connectors make them ideal for various industrial applications.

LDN240 Series are Class I isolation devices designed to be mounted on DIN rail and installed inside a protective enclosure.

FEATURES

- AC input voltage 120 or 240 VAC (settable with voltage input selector)
- DC input voltage 270 - 345 VDC (only with 240 V selected)
- Output voltages 12 V, 24 V, 48 V, 72 V (adjustable)
- Operating temperature range -40°C to +70°C
- Efficiency up to 88%
- Overload 130%
- Excellent field reliability record
- Compact size in aluminum enclosure
- Dimensions: 63 x 140 x 117 mm

APPLICATIONS

- Automation
- Process control
- 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
LDN240-12	120 / 240 VAC (270 - 345 VDC)	12 V	16 - 14 A	84 - 86 %		240 W
LDN240-24	120 / 240 VAC (270 - 345 VDC)	24 V	10 A	88 %		240 W
LDN240-24P	120 / 240 VAC (270 - 345 VDC)	24 V	10 A	86 %	Internal ORing diode	240 W
LDN240-48P	120 / 240 VAC (270 - 345 VDC)	48 V	5 A	88 %	Internal ORing diode	240 W
LDN240-72P	120 / 240 VAC (270 - 345 VDC)	72 V	3.5 A	88 %	Internal ORing diode	240 W

2. INPUT SPECIFICATIONS.

PARAMETER		DESCRIPTION / CONDITIONS	SPECIFICATION
AC Input Voltage		Nominal (UL certified), Settable with voltage input selector Range	120 / 240 VAC 90 - 132 / 187- 264 VAC
DC Input Voltage		Only with 240 V selected	270 - 345 VDC
Input Frequency			47 - 63 Hz
AC Input Current	Vin = 120 VAC Vin = 240 VAC		4.0 A 2.0 A
DC Input Current	Vin = 270 VDC Vin = 345 VDC		1.3 A 1.0 A
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 1.18 A^2s
Touch (Leakage) Current			≤ 0.8 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 / CONDITIONS	SPECIFICATION
Output Voltage (Adjustable)		LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	12 - 15 VDC 23 - 28 VDC 45 - 55 VDC 72 - 85 VDC
Output Current (continuous)		LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	16 - 14 A 10 A 5.0 A 3.5 A
Load Regulation		LDN240-12 / LDN240-48P / LDN240-72P LDN240-24 LDN240-24P	≤ 1.5 % ≤ 1.0 % ≤ 2.5 %
Ripple & Noise [1]		LDN240-12 LDN240-24 / LDN240-24P / LDN240-48P / LDN240-72P	≤ 150 mVpp ≤ 100 mVpp
Hold-up Time	Vin = 120 VAC Vin = 240 VAC		≥ 60 ms ≥ 70 ms
Status Signals		DC OK - green LED DC OK - dry contact (NO, 24 VDC / 1 A) [2]	
Parallel Connection		Possible for redundancy (with external ORing module) P models - include internal ORing diode	

[1] 20 MHz BW probe terminated with a 0.1 µF MKP parallel capacitor

[2] Not present in model LDN240-72P

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4. PROTECTIONS

PARAMETER	DESCRIPTION / CONDITIONS		SPECIFICATION
Short Circuit Protection	Hiccup mode, Short circuit peak current	LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	42 A 35 A 20 A 14 A
Overload Protection	Hiccup mode, Overload limit	LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	19 - 16 A 13.5 A 6.8 A 4.6 A
Thermal Protection			
Over Voltage Protection		LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	≥ 18 VDC ≥ 33 VDC ≥ 68 VDC ≥ 100 VDC

5. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	UL certified up to 50°C Start-up type tested: - 40°C, possible at Vnom with load deration.	-40 to +70 °C
Storage Temperature		-40 to +80 °C
Derating	Over 50°C	- 5.0 W/°C
Dissipated Power	LDN240-12 LDN240-24 LDN240-24P LDN240-48P LDN240-72P	< 36.5 - < 34.5 W < 33 W < 39 W < 33 W < 34.5 W
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	77 894 (8.8) 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 UL 61010-1 UL 61010-2-201 IEC/EN 61010-1 IEC/EN 61010-2-201	
EMC Emissions	EN 55011 / CISPR 11	Class A
EMC Immunity	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN 61000-4-11	Level 3 (Air), Level 2 (Contact) Level 3 (80 - 1000 MHz), Level 2 (1.4 - 6 GHz) 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

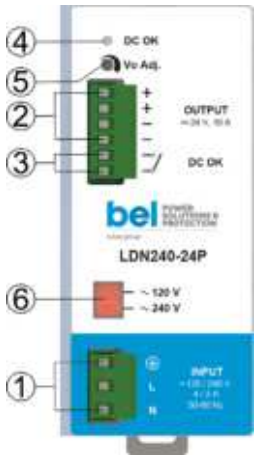
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6. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		63 x 140 x 117 mm 2.48 x 5.11 x 4.61 in
Weight		750 g
Mounting Rail	IEC 60715/H15/TH35-7.5(-15)	
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm²
Case Material	Aluminum	

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	Output voltage adjustment
6	Input voltage selector

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

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7. MECHANICAL DRAWING

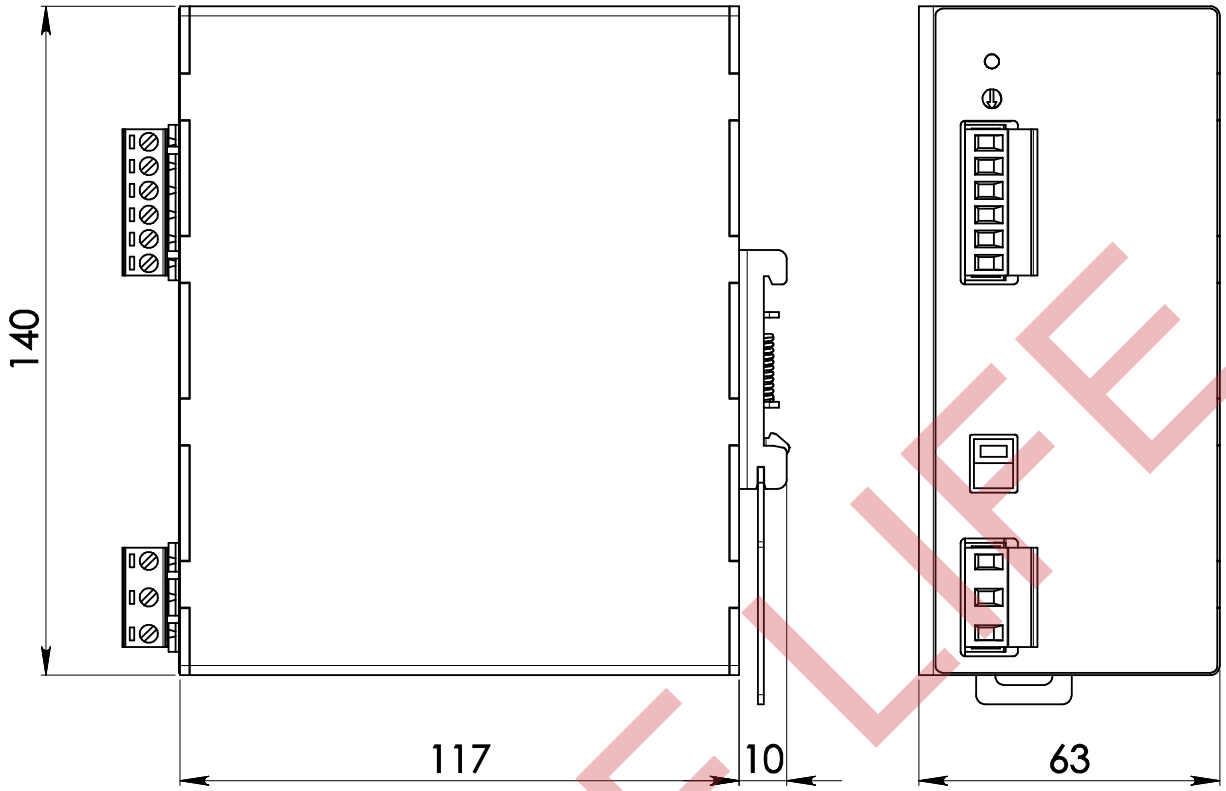


Figure 1. Mechanical Drawing

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.

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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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