

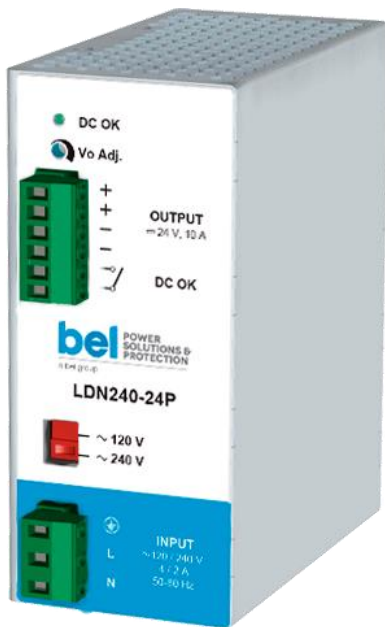
LDN240 Series

240W DIN Rail Switching Power Supply

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 suitable for SELV and PELV circuitry (up to 48 VDC models) and are designed to be mounted on DIN rail and installed inside a protective enclosure.



Key Features & Benefits

- Single phase AC input 120 / 240 VAC (with switch)
- High efficiencies and in compact size
- Only 63 mm width aluminum enclosure
- 130% overload
- Adjustable output voltage
- Short circuit, overload and over temperature protection
- RoHS Compliant

Applications

- Automation
- Process Control
- Communication
- Instrumentation Equipment

1. MODEL SELECTION

MODEL	INPUT VOLTAGE	# of PHASES	OUTPUT VOLTAGE	OUTPUT CURRENT	REDUNDANCY
LDN240-12	120 / 240 VAC (270 - 345 VDC)	1	12 VDC	16 A	No ORing diode
LDN240-24	120 / 240 VAC (270 - 345 VDC)	1	24 VDC	10 A	No ORing diode
LDN240-24P	120 / 240 VAC (270 - 345 VDC)	1	24 VDC	10 A	Internal ORing diode
LDN240-48P	120 / 240 VAC (270 - 345 VDC)	1	48 VDC	5 A	Internal ORing diode
LDN240-72P	120 / 240 VAC (270 - 345 VDC)	1	72 VDC	3.5 A	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 – settable with Input voltage selector Operating	120 / 240 VAC 92 – 132 / 187 – 264 VAC
Input DC Voltage Range	Rated	270 - 345 VDC
Input Frequency Range		47 - 63 Hz
Input AC Current	Vin = 120 VAC Vin = 240 VAC	4 A 2 A
Input DC Current	Vin = 270 VDC Vin = 345 VDC	1.3 A 1 A
Inrush Peak Current		≤ 40 A
Touch (Leakage) Current		≤ 0.8 mA
Internal Protection Fuse	Not user replaceable	Fuse 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 Voltage Range)	LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	12 VDC (12 – 15 VDC) 24 VDC (23 – 28 VDC) 48 VDC (45 – 55 VDC) 72 VDC (72 – 85 VDC)
Continuous Current	LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	16 A 10 A 5 A 3.5 A
Overload Limit	LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	19 - 16 A 13.5 A 6.8 A 4.6 A
Short Circuit Peak Current	LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	42 A 35 A 20 A 14 A
Load Regulation	LDN240-12 LDN240-24 LDN240-24P LDN240-48P / LDN240-72P	≤ 1.5% ≤ 1% ≤ 2.5% ≤ 1.5%
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
Protections	Overload, short circuit: Hiccup mode Thermal protection Output overvoltage	
Output Over Voltage Protection	LDN240-12 LDN240-24 / LDN240-24P LDN240-48P LDN240-72P	≥ 18 VDC ≥ 33 VDC ≥ 68 VDC ≥ 100 VDC
Status Signals	DC OK - green LED DC OK - dry contact (NO, 24 VDC / 1 A)	
Parallel Connection	Possible for redundancy (with external ORing module) P (models) - include internal ORing circuit	
Efficiency	LDN240-12 LDN240-24 LDN240-24P LDN240-48P LDN240-72P	> 84% > 88% > 86% > 88% > 88%
Dissipated Power	LDN240-12 LDN240-24 LDN240-24P LDN240-48P LDN240-72P	< 36.5 W < 33 W < 39 W < 33 W < 34.5 W

¹ Ripple and Noise are measured with 20MHz 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	UL certified up to 50°C (Start-up type tested: - 40°C) ²	- 40 to + 70°C
Storage Temperature		- 40 to + 80°C
Derating		- 5 W / °C over 50°C
Humidity	Non-condensing	5 - 95% RH
Life Time Expectation	At 25°C ambient full load	77894 h (8.8 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 Emission	EN55011 (CISPR11) EN55022 (CISPR22)	Class A Class A
EMC Immunity	EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-11	Level 3 Level 3 Level 3 Level 3 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 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

² Possible with load derating.

5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		750 g
Dimensions (W x D x H)		63 x 140 x 117 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	

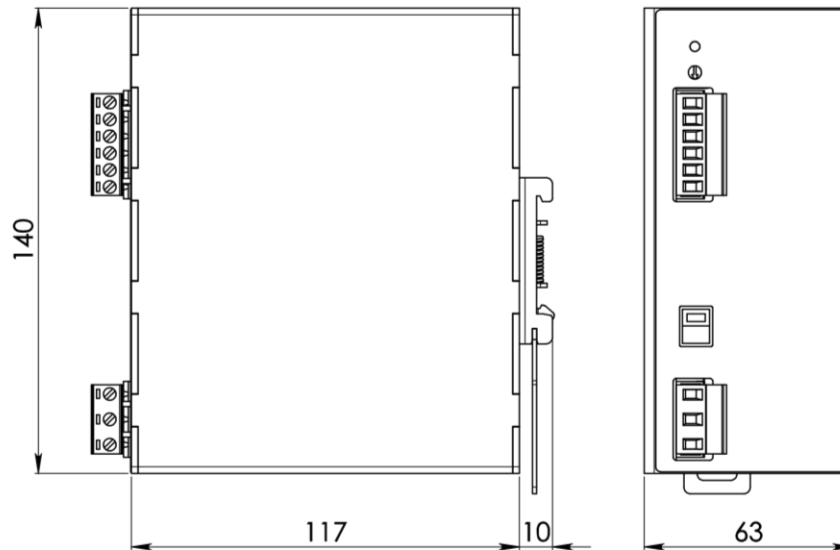
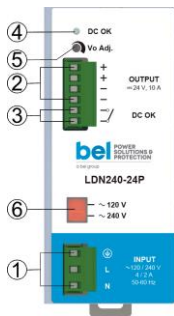


Figure 1. Mechanical Drawing

6. PIN LAYOUT & DESCRIPTION



PIN	DESCRIPTION
1	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	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

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.

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