

# LDN40 Series

## 40W DIN Rail Switching Power Supply



LDN40 Series are single phase DIN Rail Switching Power Supplies, ideal mainly for general purposes such as home automation, simple automation in machines, survey systems, telecom, but also the renewable energy field.

Its compact size, high efficiency, excellent reliability and excellent power/volume ratio, together with easy installation due to pluggable connectors makes it market leader for various industrial and renewable applications.

LDN40 Series are Class II isolation devices suitable for SELV and PELV circuitry 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 (110 - 345 VDC)
- High efficiency and compact size
- Plastic enclosure
- Class II (simplified wiring)
- Short circuit, overload and over temperature protection
- Overload 150%
- Adjustable output voltage
- Up to 50°C operating temperature with no dating
- RoHS Compliant

### Applications

- Automation
- Telecom
- Survey Systems
- Renewable

## 1. MODEL SELECTION

MODEL	INPUT VOLTAGE	# of PHASES	OUTPUT VOLTAGE	OUTPUT CURRENT
LDN40-515	120 - 240 VAC (110 - 345 VDC)	1	5 - 15 VDC	4.0 A @ 5 VDC / 2.0 A @ 15 VDC
LDN40-12D	120 - 240 VAC (110 - 345 VDC)	1	2x 12 - 16 VDC	1.0 A
LDN40-12	120 - 240 VAC (110 - 345 VDC)	1	12 VDC	3.5 A @ 12 VDC / 3.0 A @ 15 VDC
LDN40-24	120 - 240 VAC (110 - 345 VDC)	1	24 VDC	2.0 A

## 2. INPUT SPECIFICATIONS

Specifications are measured at 25°C, at 240 VAC / 50 Hz, unless otherwise stated.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION	
Input AC Voltage	Rated (UL certified) Range	120 - 240 VAC	90 - 264 VAC
Input DC Voltage	Rated	110 - 345 VDC	
Input Frequency		47 - 63 Hz	
Input AC Current	LDN40-515 / LDN40-12D LDN40-12 / LDN40-24	Vin = 120 VAC Vin = 240 VAC Vin = 120 VAC Vin = 240 VAC	0.70 A 0.40 A 0.90 A 0.50 A
Input DC Current	LDN40-515 / LDN40-12D LDN40-12 / LDN40-24	Vin = 110 VDC Vin = 345 VDC Vin = 110 VDC Vin = 345 VDC	0.5 A 0.2 A 0.6 A 0.3 A
Inrush Peak Current			< 75 A
Internal Protection Fuse	Not user replaceable	Fuse 2AT / 250 VAC	
External Protection on AC Line	It is strongly recommended to provide external surge arresters (SPD) according to local regulations	MCB 6A C curve	

## 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION	
Output Power		40 W	
Rated Voltage (Adjustable Voltage Range)	LDN40-515 LDN40-12D LDN40-12 LDN40-24	5 - 15 VDC 2x 12 - 16 VDC (2x 12 - 16 VDC) 12 VDC 24 VDC	(5 - 15 VDC) (12 - 15 VDC) (24 VDC Fixed)
Continuous Current	LDN40-515 LDN40-12D LDN40-12 LDN40-24	4.0 A @ 5 VDC / 2.0 A @ 15 VDC 1.0 A 3.5 A @ 12 VDC / 3.0 A @ 15 VDC 2.0 A	
Overload Limit	LDN40-515 LDN40-12D LDN40-12 LDN40-24	6.5 A @ 5 VDC / 4.0 A @ 15 VDC 2.7 - 2.4 A 6.5 A @ 12 VDC / 4.1 A @ 15 VDC 3.5 A	
Short Circuit Peak Current	LDN40-515 LDN40-12D LDN40-12 LDN40-24	10 A 3.5 A 8.5 A 7.0 A	
Load Regulation		≤ 1%	

Ripple & Noise	$\leq 100 \text{ mVpp}$	
Hold up Time	Vin = 120 VAC	> 10 ms
Efficiency	Vin = 240 VAC	> 50 ms
	LDN40-515	> 80%
	LDN40-12D	> 83%
	LDN40-12	> 86%
Dissipated Power	LDN40-24	> 85%
	LDN40-515	< 8 W
	LDN40-12D	< 7 W
	LDN40-12	< 8 W
Parallel Connection	LDN40-24	< 9 W
	Possible with external ORing diode	
Protections	Overload, short circuit with hiccup mode	
Status Signals	Thermal protection	
	Oversupply	
Status Signals		Green LED = DC OK

Note: Power rating, losses, efficiency, ripple, thermal behaviour may change outside of the nominal rated input range.

#### 4. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature	Overtemperature protection, UL certified up to 50°C (Start-up type tested: - 40°C)	- 40 to + 70°C
Storage Temperature		- 40 to + 80°C
Derating	LDN40-515 LDN40-12D LDN40-12 / LDN40-24	- 0.25 W / °C over 50°C - 0.25 W / °C over 50°C - 0.35 W / °C over 50°C
Humidity	Non-condensing	5 - 95% RH
Overvoltage Category		II
Pollution Degree		2 (IEC 664-1)
EMC Emission	EN55022:2010 (CISPR22) EN55011:2009 / A1:2010 EN61000-4-2:2008 EN61000-4-3:2006 / A2:2010	Class A Class A Level 3 Level 3
EMC Immunity	EN61000-4-4:2012	Level 3
	EN61000-4-5:2014	Level 3
	EN61000-4-11:2004 / A1:2010	Level 3
		Level 2
Standards & Approvals	UL508 (certified) EN60950	
Isolation Voltage	Input to Output	4.2 kVDC
Protection Degree	EN60529:1989 / A:2013	IP20
Vibration sinusoidal	IEC 60068-2-6:2007	5 - 17.8 Hz: $\pm 1.6 \text{ mm}$ ; 17.8 - 500 Hz: 2 g 2Hours / axis (X,Y,Z)
Shock	IEC 60068-2-27:2008	30 g 6 ms, 20 g 11 ms; 3 bumps / direction, 18 bumps total

#### 5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		190 g
Dimensions (W x H x D)		72.0 x 90.0 x 61.5 mm
Rail Mounting		IEC 60715/H15/TH35-7.5(-15)
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm <sup>2</sup>
Case Material	Flame retardant UL 94 V-0 plastics	

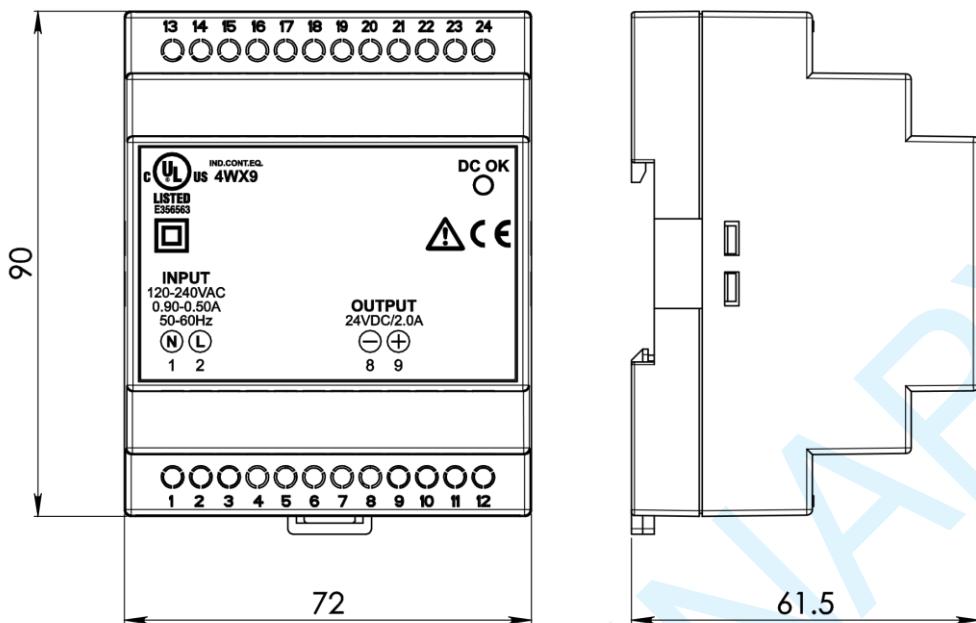
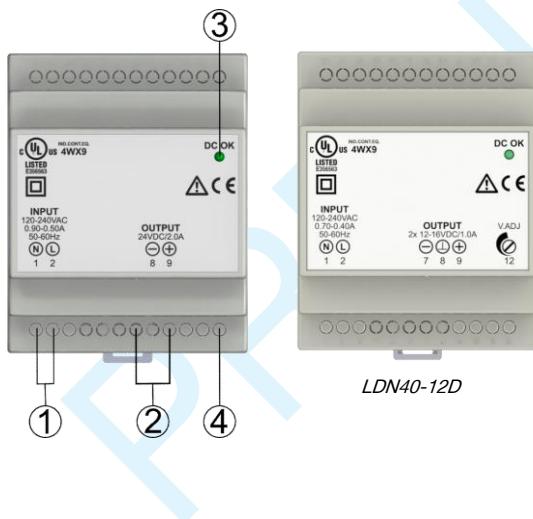


Figure 1. Mechanical Drawing

## 6. PIN LAYOUT & DESCRIPTION



PIN	DESCRIPTION
1	AC/DC input
2	DC output (load)
3	Green LED: Output OK
4	Output voltage adjustment (only on Models "515" or "12D")

INPUT CONNECTION	OUTPUT CONNECTION
Single phase: L = Line (2) N = Neutral (1)	+ = Positive DC (9) - = Negative DC (8)
DC: L = +/- (2) N = -/+ (1)	Exception LDN40-12D: + = Positive DC (9) - = Negative DC (7) - = Common DC (8)

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