LDC480 Series

480 W High Performance Ultracompact DIN Rail Power Supply

LDC480 Series is a single phase, 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.

LDC480 Series is Class I isolation device designed to be mounted on DIN rail and installed inside a protective enclosure.

FEATURES

- Input voltage 90 - 264 VAC or 110 - 345 VDC
- Output voltages 24 V, 48 V, 72 V (adjustable)
- Operating ambient temperature range -40°C to +70°C (up to 60°C with no derating)
- Efficiency up to 94%
- Active PFC
- Overload 150%
- Constant Current or Hiccup mode limitation (user settable)
- Easy parallelable for power increase
- Extremely compact size in aluminum enclosure
- Dimensions: 56 x 140 x 117 mm

APPLICATIONS

- Industrial control equipment
- Communication
- Instrumentation equipment

Please read our datasheet & drawing disclaimer here.

1. MODEL SELECTION

MODEL	NOMINAL INPUT VOLTAGE RANGE	OUTPUT VOLTAGE	MAX OUTPUT CURRENT	EFFICIENCY	REDUNDANCY	MAX OUTPUT POWER
LDC480-24	100 or 120 - 240 VAC	24 V	20 A	93 %		480 W
LDC480-24P	100 or 120 - 240 VAC	24 V	20 A	93 %	Internal ORing diode	480 W
LDC480-48	100 or 120 - 240 VAC	48 V	10 A	94 %		480 W
LDC480-48P	100 or 120 - 240 VAC	48 V	10 A	94 %	Internal ORing diode	480 W
LDC480-72	100 or 120 - 240 VAC	72 V	6.7 A	94 %		480 W
LDC480-72P	100 or 120 - 240 VAC	72 V	6.7 A	94 %	Internal ORing diode	480 W

Discontinued models

2. INPUT SPECIFICATIONS.

PARAMETER		DESCRIPTION / CONDITIONS	SPECIFICATION
AC Input Voltage		Nominal (UL certified) Range	100 or 120 - 240 VAC 90 - 264 VAC
DC Input Voltage			110 - 345 VDC
Input Frequency			47 - 63 Hz
AC Input Current	Vin = 100 VAC		5.6 A
	Vin = 120 VAC		4.8 A
	Vin = 240 VAC		2.4 A
DC Input Current	Vin = 110 VDC		4.9 A
	Vin = 345 VDC		1.7 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	≤ 23 A 0.56 A^2s
Touch (Leakage) Current			≤ 0.9 mA
Internal Protection Fuse		Not user replaceable	8 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)	24 V models 48 V models 72 V models	22 - 29 VDC 45 - 55 VDC 70 - 85 VDC
Output Current (Continuous)	24 V models 48 V models 72 V models	20 A 10 A 6.7 A
Load Regulation	24 V 48 V & 72 V models	≤ 1.5 % ≤ 0.5 %
Ripple & Noise [1]	24 V models 48 V models 72 V models	≤ 150 mVpp ≤ 200 mVpp ≤ 350 mVpp
Hold-up Time		≥ 25 ms
Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1 A) - **Note:** DC OK is not present in 72 V models	
Parallel Connection [2]	Possible for power or redundancy (with external ORing module) P models - include internal ORing diode	

[1] Ripple and Noise are measured with 20 MHz bandwidth, probe terminated with a 0.1 µF MKP parallel capacitor.
[2] Pay attention, set the current limitation mode jumper on C.C. mode when connecting more units in parallel.

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 72 V models	21 A 12 A 7 A
	Hiccup mode Overload Limit (max. 5 s) (user settable)	24 V models 48 V models 72 V models	30 A 17 A 12 A
Thermal Protection			
Input Under Voltage Lockout			
Over Voltage Protection		24 V models 48 V models 72 V models	≥ 33 VDC ≥ 68 VDC ≥ 100 VDC

5. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	UL certified up to 50°C at 100 VAC & 120 VAC or up to 60°C at 240 VAC 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 at 100 VAC Over 50°C at 120 VAC Over 60°C at 240 VAC	- 10.0 W/°C - 7.6 W/°C - 7.2 W/°C
Dissipated Power	24 V models 48 & 72 V models	< 36.5 W < 31 W
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	167 953 (19.1) hrs (years)
MTBF	MIL-HDBK-217F at Ta = 25°C, full load	> 600 000 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 (certified) UL 61010-1 (certified) EN 61010-1 (meet the requirements)	
EMC Emissions	EN 55011 / CISPR 11 EN 61000-3-2 EN 61000-3-3	Class B Class A
EMC Immunity	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 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

© 2024 Bel Fuse Inc.

6. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		56 x 140 x 117 mm 2.2 x 5.5 x 4.6 in
Weight		1100 g
Mounting Rail	IEC 60715/H15/TH35-7.5(-15)	
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm²
Case Material	Aluminum	

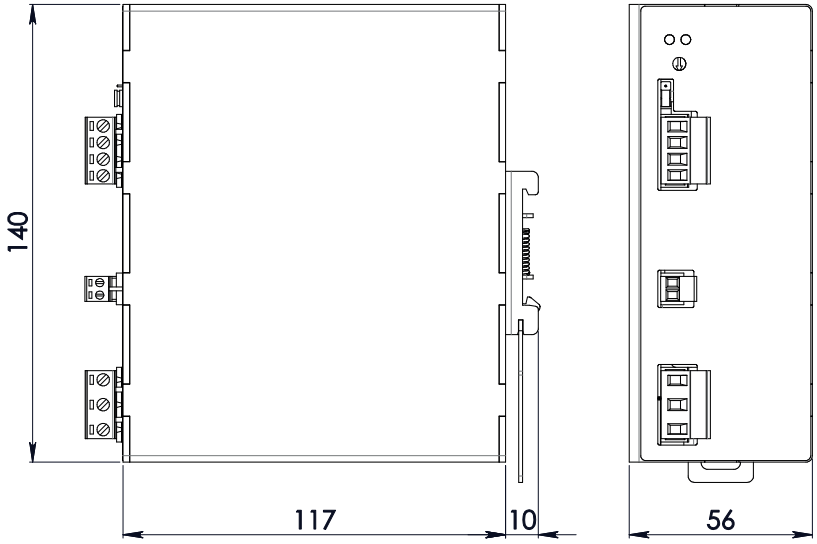
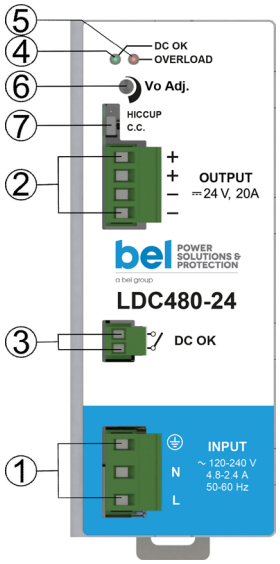


Figure 1. Mechanical Drawing

7. PIN LAYOUT & DESCRIPTION



PIN	DESCRIPTION
1	AC/DC input
2	DC output (load)
3	Diagnostic Output (dry contact, NO, 24 VDC / 1 A) (**Note:** Not present on 72 V models)
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 (Not present on 72 V models) • NO • COM	

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.