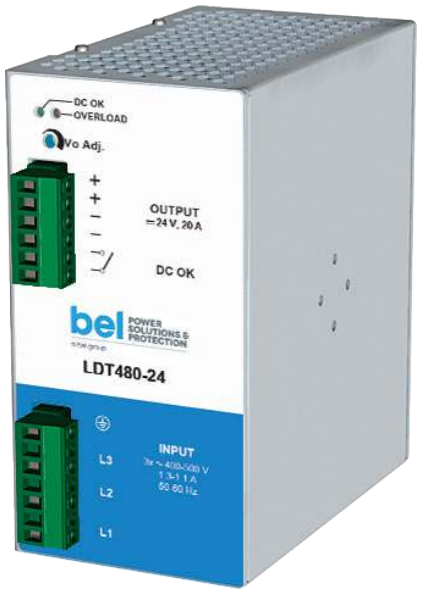
LDT480-24

480 W 3-Phase DIN Rail Switching Power Supply



LDT480-24 is a high power switching mode power supplies with three phase input voltage 400 – 500 VAC, delivering 480 W of output power in 24 V output voltage.

Its compact size, high efficiency and excellent reliability together with easy installation make them fit demanding applications where compactness and high power are needed. Suitable for application where low line voltage is often present.

LDT480-24 is Class I isolation device suitable for SELV and PELV circuitry designed to be mounted on DIN rail and installed inside a protective enclosure.

FEATURES

- Three phase AC input 400 - 500 VAC
  or DC input 470 - 725 VDC
- Output voltage 24 V (adjustable)
- Operating ambient temperature range -40°C to +70°C
- Efficiency up to 92%
- Overload 140%
- Activ PFC
- Compact size in aluminum enclosure
- Dimensions: 80 x 127 x 137.5 mm

APPLICATIONS

- Automation
- Process control
- Telecom
- Instrumentation equipment

1. MODEL SELECTION

MODEL	INPUT VOLTAGE RANGE	# OF PHASES	OUTPUT VOLTAGE	MAX OUTPUT CURRENT	EFFICIENCY	MAX OUTPUT POWER
LDT480-24	400 - 500 VAC (470 - 725 VDC)	3	24 V	20 A	92 %	480 W

2. INPUT SPECIFICATIONS.

PARAMETER		DESCRIPTION / CONDITIONS	SPECIFICATION
AC Input Voltage		Nominal 3 phases (UL certified) Range	400 - 500 VAC 340 - 550 VAC
DC Input Voltage			470 - 725 VDC
Input Frequency			47 - 63 Hz
AC Input Current	Vin = 400 VAC		1.3 A
	Vin = 500 VAC		1.1 A
DC Input Current	Vin = 470 VDC		1.2 A
	Vin = 725 VDC		0.8 A
Power Factor Correction		Active	> 0.9
Inrush Peak Current I^2t		Peak Current measured after 0.2 ms from main connection; 400 VAC / 50 Hz; Ta = 25°C; Cold Start	≤ 55 A 2.16 A^2s
Touch (Leakage) Current			≤ 0.5 mA
Internal Protection Fuse		None, external fuse must be provided	
Recommended External Protection		It is strongly recommended to provide external surge arresters (SPD) according to local regulations.	Fuse 3x 6.3 AT or 3x MCB 6 A C curve or 3x MCB 4 A D curve

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Output Voltage (Adjustable)		23 - 28 VDC
Output Current (continuous)		20 A
Load Regulation		≤ 1.0 %
Ripple & Noise [2]		≤ 50 mVpp
Hold-up Time		≥ 20 ms
Status Signals	DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1 A)	
Parallel connection	Possible for redundancy (with external ORing module)	

[2] Ripple and Noise are measured with 20 MHz bandwidth, probe terminated with a 0.1 µF MKP parallel capacitor.

4. PROTECTIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Short circuit protection	Hiccup mode, Short circuit peak current	50 A
Overload protection	Hiccup mode, Overload Limit	28 A
Thermal protection		
Over voltage protection		≥ 33 VDC

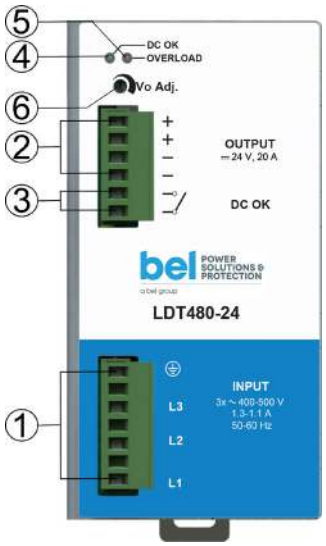
5. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	UL certified up to 45°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 45°C	- 10 W/°C
Dissipated Power		< 42 W
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	65 496 (7.4) 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 (certified) IEC/EN 61010-1 IEC/EN 61010-2-201 IEC/EN 60950	
EMC Emissions	EN 55011 / CISPR 11 EN 55022 / CISPR 22 EN 61000-3-2	Class A Class A Class A
EMC Immunity	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-11	Level 3 Level 3 Level 4 Level 3 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

6. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		73 x 140 x 125 mm 2.87 x 5.51 x 4.92 in
Weight		1000 g
Mounting Rail	IEC 60715/H15/TH35-7.5(-15)	
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm²
Case Material	Aluminum	

7. 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

INPUT CONNECTION	Three-phase	DC Input
	L1 = Phase 1 L2 = Phase 2 L3 = Phase 3 ⏚ = Earth ground	L1 = + Positive DC L2 = - Negative DC L3 = do not connect ⏚ = Earth ground
OUTPUT CONNECTION	+ = Positive DC - = Negative DC	
SIGNALLING	DC OK: dry contact • NO • COM	

MECHANICAL DRAWING

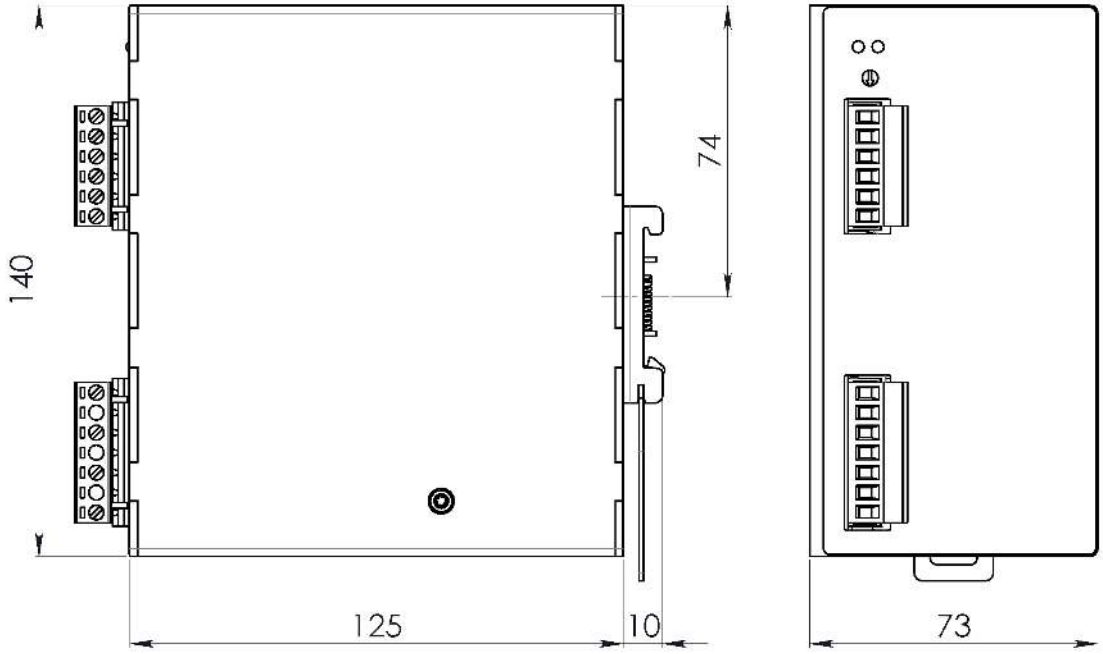


Figure 1. Mechanical Drawing

Notes:

Technical parameters are typical, measured in laboratory environment at 25°C and 400 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.