LDX-D50

50A DIN Rail Active Redundancy (ORing) Module

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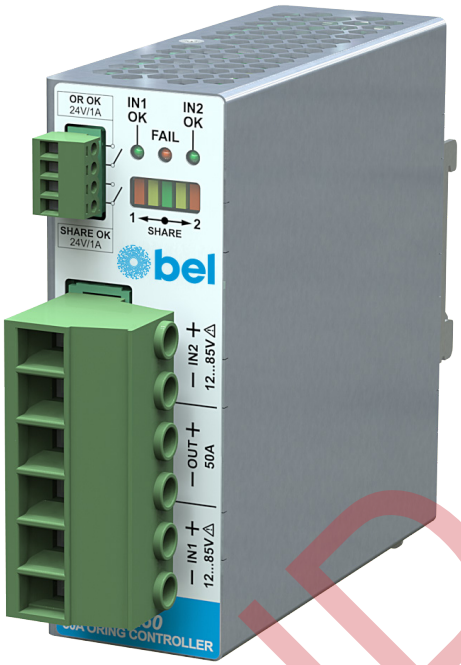

LDX-D50 is a modern, CPU controlled device and responds to a wide range of applications where strong redundancy of DC power supplies is needed.

By keeping the two power supplies (PS) “hot” (each operating at half of the load need) the system reaches higher MTBF than by using one PS “hot” and the other “cold” (as per standard ORing devices). It allows same life expectancy for the electrolytic capacitors and other sensitive parts of both PS and it prevents an excessive ageing of the unit that should be kept “hot”.

LDX-D50 allows the paralleling of the output of any two identical PS with any current up to 50 A and voltages from 12 V to 85 V. The isolation between the units is achieved through power MOSFETs with advanced control circuitry.

Several LDX-D50 can be interconnected in order to achieve redundancy for > 2 PS systems. LDX-D50 allows perfect current distribution between two PS, in case of their use for shared power.

LDX-D50 provides perfect isolation between two PS in case of one unit failure and also the continuous delivery of energy towards a critical load. It is specially designed for high MTBF and compliance to a wide choice of PS and loads.

FEATURES

- Wide input voltage range: 12 - 85 VDC
- Extremely low loss - up to 99% efficiency
- CPU controlled
- Output 50 A
- Pluggable connectors
- Easy acknowledgment of the power supplies availability
- Current share status display eases sources balancing
- Up to 75°C operating temperature with no derating
- Ultra compact size in aluminum enclosure
- Dimensions: 40 x 115 x 110 mm

Please read our datasheet & drawing disclaimer here.

1. INPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
DC Input Voltage	Rated, UL certified	12 - 85 VDC
DC Input Current	Rated	50 A
Standby Power		< 1.5 W
Input Protections	Overvoltage protection Reverse polarity connection	≥ 100 VDC

2. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Output Voltage	Rated, UL certified	12 - 85 VDC
Output Current (Continuous)		50 A
Output Current (Peak)		> 300 A
Conduction Resistance		< 4 mΩ

3. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	UL certified up to 75°C Start-up type tested: - 40°C, possible at Vnom with load deration.	-40 to +75 °C
Storage Temperature		-40 to +80 °C
Derating	No derating	
Dissipated Power		< 10 W
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	291 894 (33.3) hrs (years)
MTBF	MIL-HDBK-217F at Ta = 25°C, full load	> 600 000 hrs
Overvoltage Category	EN 50178	I
Pollution Degree	IEC 60664-1	2
Cooling	Natural convection	
Isolation	Enclosure to live parts	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	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 3 Level 1 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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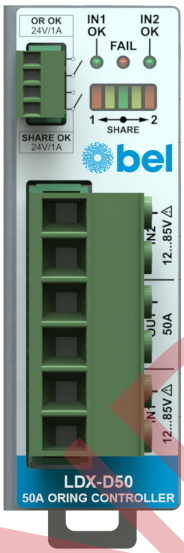
4. USER INTERFACE

PARAMETER	DESCRIPTION / CONDITIONS
Status Signals	**IN1 OK** - green LED **IN2 OK** - green LED **FAIL** - red LED (redundancy fail) **SHARE** - bar graph current share **OR OK** - dry contact (NO, 24 VDC / 1 A) **SHARE OK** - dry contact (NO, 24 VDC / 1 A)

5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		40 x 115 x 110 mm 1.57 x 4.53 x 4.33 in
Weight		350 g
In/Out Connection Terminals	Screw type pluggable (20 - 6 AWG)	up to 16 mm²
Signal Connection Terminals	Screw type pluggable (24 - 16 AWG)	1.5 mm²
Case Material	Aluminum	

6. PIN LAYOUT & DESCRIPTION



INPUT CONNECTION	IN1 + = Positive DC (Power Supply) IN1 - = Negative DC (Power Supply) IN2 + = Positive DC (Power Supply) IN2 - = Negative DC (Power Supply)
OUTPUT CONNECTION	OUT + = Positive DC (Load) OUT - = Negative DC (Load)
SIGNALING	OR OK: dry contact • NO • COM
SHARE OK:	dry contact • NO • COM

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7. MECHANICAL DRAWING

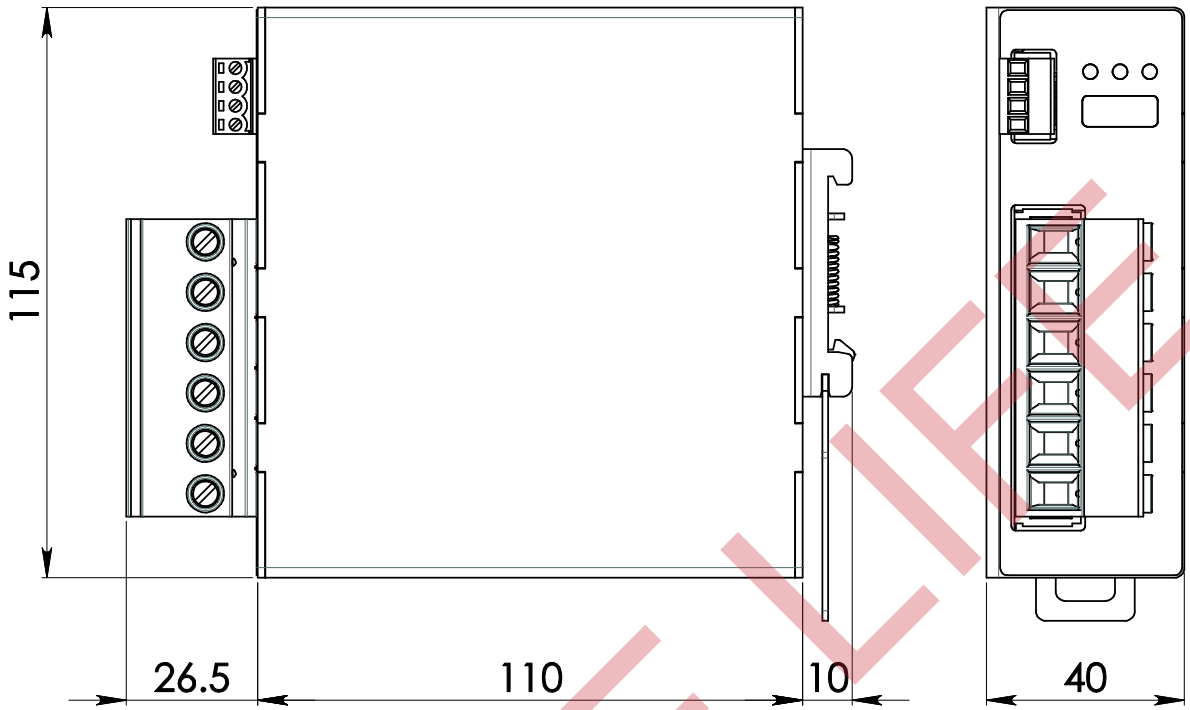

Figure 1. Mechanical Drawing

Notes:

Technical parameters are typical, measured in laboratory environment at 25°C and 24 VDC, 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.