LDX-B20

500 W / 0.3 s Universal Input Range
150 J Buffer Module

The LDX-B20 is a microprocessor controlled buffer unit rated 20 A usable in 12 V, 24 V, 48 V and 72 V systems.

The LDX-B20 monitors the voltage coming from a DC power supply and in case of failure a capacitor bank is used to keep the output regulated for at least 300 ms at full load.

LDX-B20 is a device designed to be mounted on DIN rail and installed inside a protective enclosure.

FEATURES

- Wide voltage range 12 - 85 VDC
- Self tracking DC BUS voltage
- > 150 Joules energy storage
- High efficiency
- Reliable topology, based on standard electrolytic capacitors
- Dry contacts for status signalling and opto-isolated input for INHIBIT
- Digital power regulation
- Multiple protections, integrated safety circuit that dis-connects the capacitor bank in case of internal failure
- Can boost the peak power of the DC supply
- Parallelable for power and backup time increase
- Compact size in aluminum enclosure
- Dimensions: 63 x 140 x 117 mm

1. INPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
DC Input Voltage	Nominal (UL certified) Range (Auto detection)	12 / 24 / 48 / 72 VDC 12 - 85 VDC
Maximum DC Input Current	At ≤ 48 V At > 48 V	20 A 16 A
Charging Time	Voltage dependent (see *Figure 1*)	< 40 s

2. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Output Voltage	Vin - 1 V (12 / 24 / 48 / 72 VDC - 1 V)	
Output Current (Continuous)	At ≤ 48 V At > 48 V	20 A 16 A
Backup Duration	12 V at 20 A 24 V at 20 A 48 V at 20 A 72 V at 16 A	600 ms 300 ms 130 ms 140 ms
Ripple & Noise	20 MHz BW probe terminated with a 0.1 µF MKP parallel capacitor	≤ 250 mVpp
Status Signals	Voltage level by amber LEDs STATUS - CHARGING / READY by Bi-color LED BACKUP - dry contact (NO, 24 VDC / 1 A) READY - dry contact (NO, 24 VDC / 1 A) INHIBIT - remote ON/OFF input	

3. PROTECTIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Short Circuit Protection	One shot	
Overload Protection	Active	
Over Voltage Protection	Active	

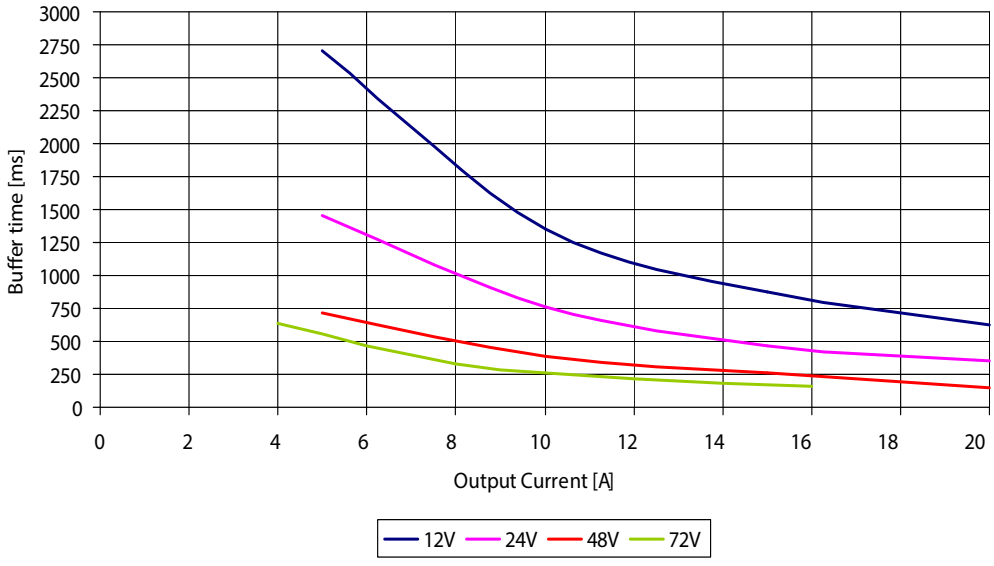

Figure 1. Buffer time vs Output Current

4. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	UL certified up to 70°C Start-up type tested: - 40°C, possible at Vnom with load deration.	-40 to +70 °C
Storage Temperature		-40 to +80 °C
Operating Modes	AUTO: senses the input voltage and supplies the load when the voltage drops MANUAL: fixed output voltage (12 / 24 / 48 / 72 VDC) user settable by front key	
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	191 963 (21.9) hrs (years)
MTBF	MIL-HDBK-217F at Ta = 25°C, full load	> 600 000 hrs
Cooling	Natural convection	
Protection Class	Class I	
Isolation	DC Bus to Ground	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	Level 3 Level 3 Level 2 Level 1
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

5. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		63 x 140 x 117 mm 2.48 x 5.51 x 6.61 in
Weight		900 g
Mounting Rail	IEC 60715/H15/TH35-7.5(-15)	
Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm²
Case Material	Aluminum	

6. PIN LAYOUT & DESCRIPTION

DC BUS CONNECTION
DC BUS + = wired in parallel on (+) positive DC BUS DC BUS – = wired in parallel on (-) negative DC BUS ⏚ = Earth ground
SIGNALLING
• INHIBIT = used to disable the buffering function (+/-) • BACKUP = dry contact closed while LDX-B20 is delivering power COM / NO • READY = dry contact closed when the internal capacitors are charged at least at 1/2 of their maximal energy and the inhibit input is inactive COM / NO

7. MECHANICAL DRAWING

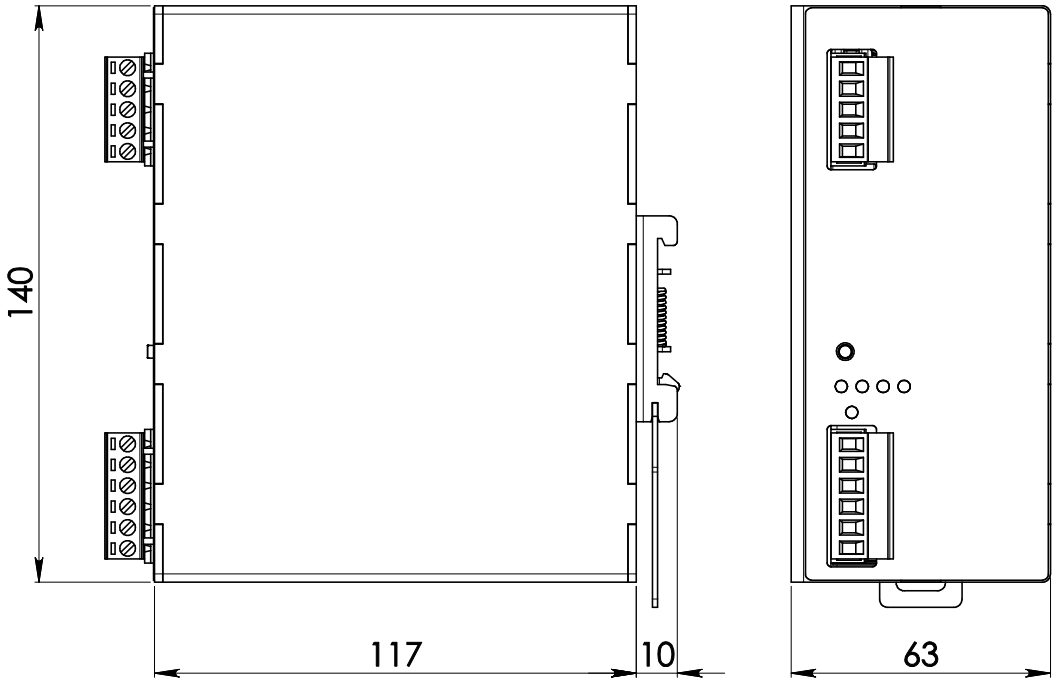

Figure 2. Mechanical Drawing

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.

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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