LDX-U20

20 A High performance DC UPS

LDX-U20 is a microprocessor controlled DC-UPS rated 20 A usable in 12 V or 24 V systems.

LDX-U20 monitors the voltage supplied by a DC source and in case of power failure a backup battery is connected to the load.

When powered externally the unit charges the battery by an integrated battery charger supporting various battery chemistries.



RoHS Compliant

Key Features & Benefits

- Multiple protections
- Integrated battery charger for 12 V or 24 V (or intermediate voltages) multi-chemistry batteries with a charging current up to 5 A
- 20 A rated load
- Automatic sensing of input voltage, load current and battery current
- Battery protection against reverse polarity connection and overcurrent
- Battery health monitoring system: measuring battery internal resistance, battery temperature, charge/discharge cycles and Coulomb counter
- User settable maximum backup time
- Remote input to inhibit the UPS function
- Connection for a battery thermal sensor (optional)

Embedded User Interface

- Industrial machine control
- 4 keys and 1 color graphic CSTN LCD display
- Allows online device configuration
- Displays the LDX-U20 status and alarms
- USB communication port for remote monitoring and configuration
- Dry contacts

Free PC Application “POWERMASTER” for:

- Connection through USB interface
- Remote monitoring and configuration
- Firmware upgrade
- Same functionalities of the embedded user interface with the ease of the PC benefits

1. MODEL SELECTION

MODEL	INPUT VOLTAGE	INPUT CURRENT	BATTERY VOLTAGE	MAX BATTERY CHARGE CURRENT
LDX-U20	11 - 28 VDC (10 - 29 VDC)	20 A	12 V or 24 V	5 A

2. INPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input Voltage (Range)	Rated	11 - 28 VDC (10 - 29 VDC)
Input Current	Rated	20 A
No Load Power Consumption		< 3 W

3. BATTERY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Rated Battery Voltage	Other voltages possible by request	12 V or 24 V
Battery Chemistries	Lead-Acid (charging voltage is temperature corrected with 3 mV/K/cell) Ni-MH / Ni-Cd Li-ION / $LiFePO_4$	
Maximum Battery Charge Current		5 A
Allowed Battery Capacity		up to150 Ah
Maximum Battery Current		20 A (up to 35 A for 5 seconds)
Load to Battery Switch Time		< 5 usec
Battery Protections	Overcurrent Deep discharge Reverse polarity	
Battery Health Monitor		
Battery Internal Resistance Range	Using Kelvin connection	1 - 300 mΩ
Additional Monitoring Functions	Coulomb counter Battery temperature through optional 10kΩ NTC sensor Battery operating time since installation Number of cycles	

4. USER INTERFACE SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
1.5 Inch Color Graphic LCD	Used to indicate the unit's status and to access the configuration menus
4 Keys	Used to program the unit and to access various menus
Red LED	ON: generic failure on the system, details on the LCD Blinking: battery backup function active
2 Dry Contacts (Relays) Rated 30 V / 1 A	User settable between different functions (see user manual)
USB Interface	Mini USB connector used to interface the unit with a PC

5. GENERAL SPECIFICATIONS

PARAMETER		DESCRIPTION / CONDITION	SPECIFICATION
Efficiency Power Loss at Full Load (On Power Supply)			> 97.5% < 13 W
Efficiency Power Loss at Full Load(On Battery)			> 96.5% < 18 W
Battery Charger Efficiency Power Loss			> 90% < 16 W
Maximum Backup Time		User programmable or up to battery discharge threshold	
Operating Ambient Temperature		Start-up type tested:- 40°C; For temperatures <-20°C the LCD is not operating, but the unit will operate correctly.	-40°C to +60°C
Storage Temperature			-20°C to +60°C
Humidity		Non-condensing	5 - 95% r.H.
Life Time Expectation		at 25°C ambient full load	253142 h (28.9 years)
Isolation Against Enclosure			0.75 kVDC
Cooling Method		Natural convection cooling	
Safety Standards & Approvals		UL508 (reference) EN60950 (reference)	
EMC Standards	Emission	EN55022: 2010 (CISPR22) EN55011: 2009 /A1:2010	Class A Class A
	Immunity	EN61000-4-2:2008 EN61000-4-3:2006 /A2:2010 EN61000-4-4:2012 EN61000-4-5:2014 EN61000-4-11:2004 /A1:2010	Level 3 Level 3 Level 3 Level 1 Level 2
Protection Degree		EN60529:1989 / A:2013	IP20
Vibration Sinusoidal		IEC 60068-2-6:2007	5-17.8 Hz: ±1.6 mm; 17.8-500 Hz: 2g 2 Hours / axis (X, Y, Z)
Shock		IEC 60068-2-27:2008	30 g 6 ms, 20 g 11 ms; 3 bumps / direction, 18 bumps total

NOTES:

- For more details, performance and description regarding all parameters not indicated in the above table; please refer to user manual. Technical parameters are typical, measured in laboratory environment at 25°C, 24 V input and 24 V lead acid battery.
- Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range.
- Contact factory for details.
- Data may change without prior notice in order to improve the product.

6. CONNECTIONS

PARAMETER	DESCRIPTION / CONDITION
IN/Battery/OUT Connectors	2.5 mm², Pluggable screw type (24 – 12 AWG,) 6 pins pluggable, 5.08 mm pitch
Auxiliary Contacts Connectors	Up to 0.5 mm², Fast Pluggable type (20 AWG), 7 pins pluggable, 2.54 mm pitch
Temperature Sensor Connector	2 pins, 2 mm pitch, friction lock connector
USB Connector	Mini USB connector

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INPUT / OUTPUT CONNECTION:
▪ IN (+/-) = connect to DC (+/-) Power supply
▪ OUT (+/-) = connect to DC (+/-) Load
▪ BATTERY (+/-) = connect to Battery (+/-)
▪ BATTERY SENSE (+/-) = connect to Battery (+/-) for better accuracy of internal resistance measurement
▪ INHIBIT (+/-) = used to inhibits the backup function
▪ Backup = dry contact closed when LDX-U20 is running on battery
▪ Ready = programmable dry contact

7. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Weight		500 g
Dimensions		54 x 115 x 110 mm
Mounting Rail		IEC 60715/H15/TH35-7.5(-15)

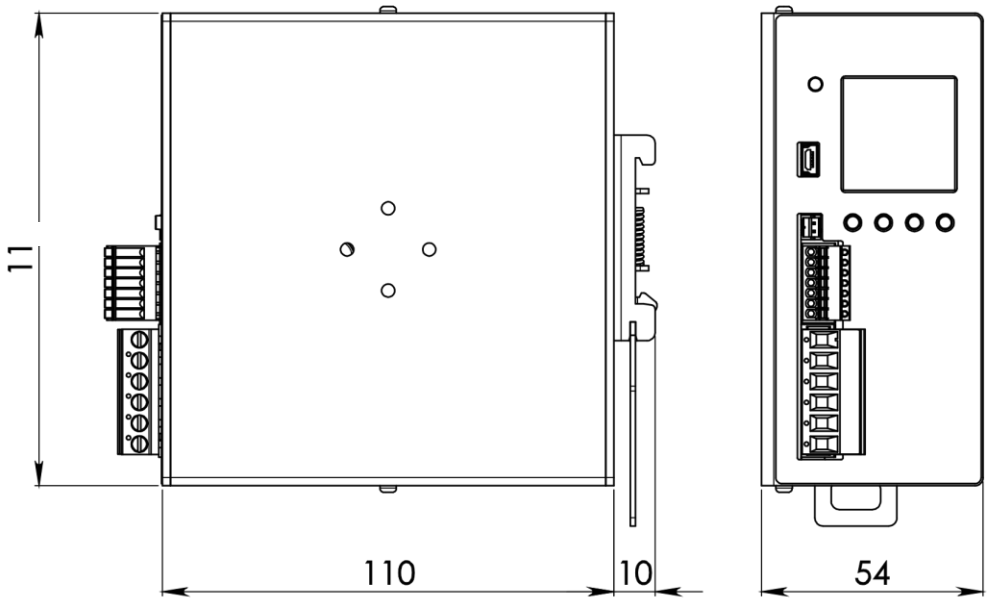
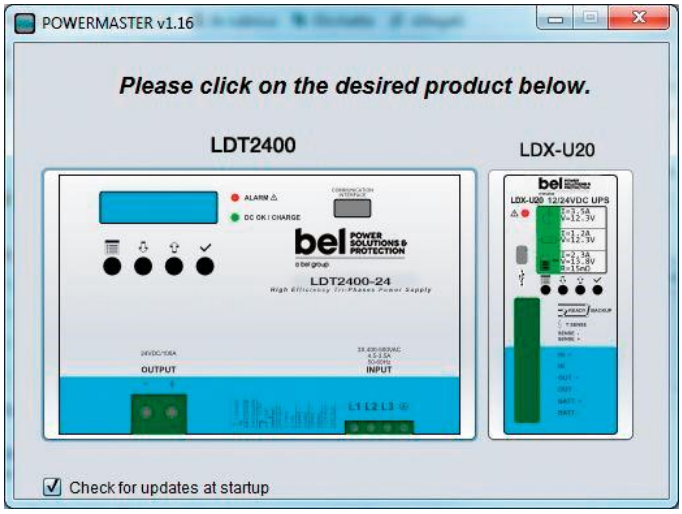


Figure 1. Mechanical Drawing

8. REMOTE MONITORING APPLICATION “POWERMASTER”



Configuration and diagnostic tool:

- Monitors the device status
- Updates the firmware
- Reads and writes the device configuration
- Reads and writes the configuration from/to a file
- Reads the logs
- Exports / imports logs from / to a file

For more information on these products consult: 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.

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