

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.



Key Features & Benefits

- Digital Power regulation, LCD interface
- Multiple user settable parameters
- BI VOLTAGE: 12 V or 24 V (intermediate voltages possible)
- Battery chemistry: Lead acid, nickel and lithium
- Maximum battery capacity 150 Ah
- Load current: 20 A Max.
- Multiple protections
- Remote ON/OFF or other remote control functions possible through INHIBIT input
- Cold start
- 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

Embedded User Interface

- 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

Suitable for POWERMASTER software

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

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 (UL Certified)	11 - 28 VDC (10 - 29 VDC)
Input Current	Rated	20 A
Standby Power		< 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 Nickel Lithium	
Maximum Battery Charge Current		5 A
Allowed Battery Capacity		up to 150 Ah
Maximum Battery Current		20 A (up to 35 A for 5 seconds)
Load to Battery Switch Time		< 5 μ s
Battery Protections	Overcurrent Deep discharge Reverse polarity	
Battery Health Monitor		
Battery Internal Resistance Range	Using Kelvin connection	1 - 300 m Ω
Additional Monitoring Functions	Coulomb counter Battery temperature through optional 10 k Ω 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	Constantly ON: generic failure on the system, details on the LCD Blinking: battery backup function active
2 Dry Contacts (Relays) Rated 30 V / 1 A	May indicate units status (READY or on BACKUP model), battery failure (by toggling at 1 Hz) Configurable for remote PC shutdown
Other Interfaces	INHIBIT - Isolated remote ON/OFF input, active for 5 - 30 VDC BATTERY SENSE - recommended to have an accurate measurement of the battery internal resistance Mini USB-B - connector to be used with POWERMASTER software T SENSE - optional, remote temperature sensor for battery charging (WNTC-2MT)

5. GENERAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Efficiency		> 97.5%
Power Loss at Full Load (On Power Supply)		< 13 W
Efficiency		> 96.5%
Power Loss at Full Load(On Battery)		< 18 W
Battery Charger Efficiency		> 90%
Power Loss		< 16 W
Maximum Backup Time	User programmable or up to battery discharge threshold	
Operating Ambient Temperature *	UL certified up to 60°C	-40°C to +60°C
Storage Temperature		-40°C to +80°C
Humidity	Non-condensing	5 - 95% r.H.
Life Time Expectation	at 25°C ambient full load	253142 h (28.9 years)
MTBF	MIL-HDBK-217F, at 25°C ambient full load	> 600 000 h
Overvoltage category	EN50178	I
Pollution degree	EC60664-1	2
Isolation Against Enclosure		0.75 kVDC
Safety Standards & Approvals	UL508 (certified) EN60950 (reference)	
EMC Standards	Emission	EN55011 (CISPR11)
		EN55022 (CISPR22)
		EN61000-4-2
	Immunity	EN61000-4-3
		EN61000-4-4
		EN61000-4-5
Protection Degree	EN60529	IP20
Vibration Sinusoidal	IEC 60068-2-6	5-17.8 Hz: ±1.6 mm; 17.8-500 Hz: 2g 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

* 1) Start-up type tested: - 40°C, possible at nominal voltage with load deration.

2) For temperature ≤ - 20°C the LCD is not operating, but the unit will operate correctly

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, 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.
- Data may change without prior notice in order to improve the product.

6. CONNECTIONS

PARAMETER	DESCRIPTION / CONDITION	
IN/Battery/OUT Connectors	Screw type pluggable (24 – 12 AWG)	2.5 mm ² ,
Auxiliary Contacts Connectors	Fast Pluggable type (20 AWG)	Up to 0.5 mm ²
Temperature Sensor Connector	Friction lock connector	
USB Connector	Mini USB-B connector	



IN / BATTERY / OUT CONNECTION

IN: (connect to power supply)

- + = Positive DC
- - = Negative DC

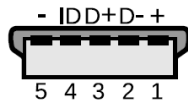
Battery: (connect to battery)

- + = Positive DC
- - = Negative DC

OUT: (connect to load)

- + = Positive DC
- - = Negative DC

Mini USB-B Type



- 1 = VBUS (+5V)
- 2 = Data (D-)
- 3 = Data (D+)
- 4 = Not connected (ID)
- 5 = GND

AUXILIARY CONNECTIONS

BATTERY SENSE: (connect to battery)

- + = Positive DC
- - = Negative DC

INHIBIT: (5...30Vdc)

- + = Positive DC
- - = Negative DC

READY: (programmable dry contact)

- NO
- COM

BACKUP: (close when running on Battery)

- NO
- COM

T SENSE: (remote temperature sensor for battery charging)

- Optional WNTC-2MT

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)

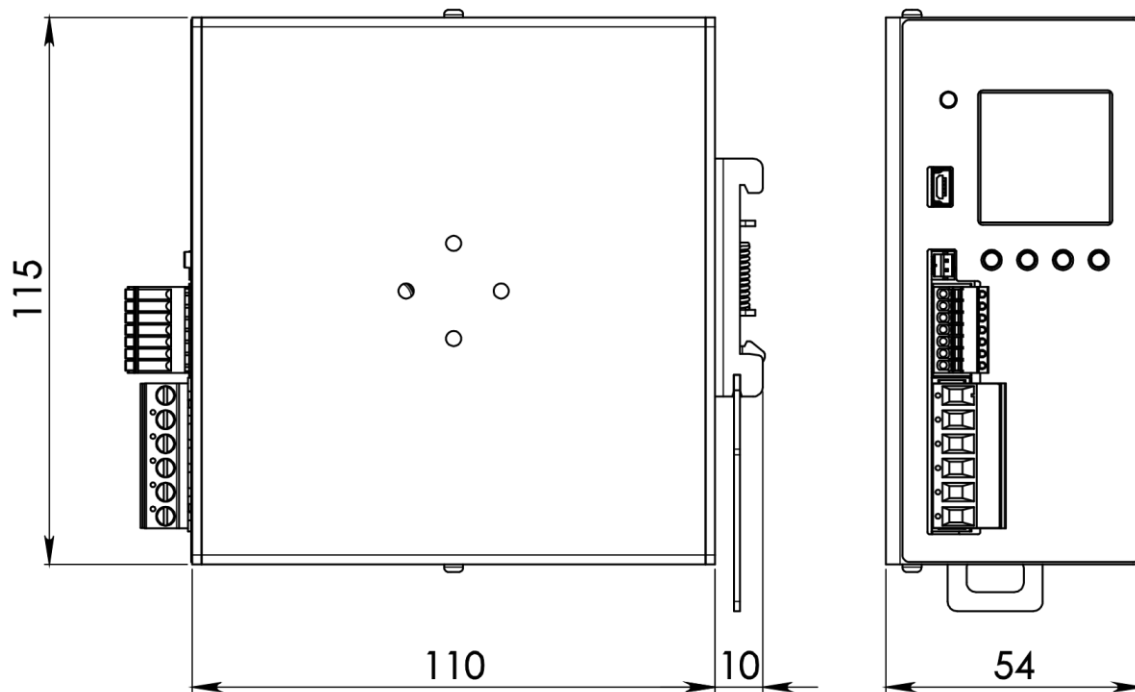


Figure 1. Mechanical Drawing

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.

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