

LDP200-120

200 W DIN Rail

Programmable Power Supply

LDP200-120 is the first user programmable unit on the market that can supply any voltage between 24 and 120 VDC, offering unmatched flexibility for many applications.

Its compact size, high efficiency, excellent reliability together with easy installation makes it ideal for various industrial applications.

LDP200-120 is Class I isolation device designed to be mounted on DIN rail and installed inside a protective enclosure.



RoHS
Compliant



FEATURES

- Wide AC input voltage range 170 - 550 VAC or wide DC input voltage range 250 - 725 VDC
- Wide output voltage range 24 - 120 VDC (user settable)
- Operating temperature up to +50°C with no derating
- User settable current limitation threshold
- High efficiency
- Active PFC
- Digital Power regulation
- Remote ON/OFF or other remote control functions
- MODBUS over RS-485 interface for control and monitoring
- Multiple protections
- 2 user programmable voltage steps with settable duration
- Can be used as battery charger (lead acid, nickel, lithium)
- Can be used for LED lighting
- Parallelable for power or redundancy (with external ORing module)
- Compact size 80 x 120 x 100 mm

APPLICATIONS

- Industrial control
- Instrumentation equipment
- Communication
- Renewable energy systems

1. MODEL SELECTION

MODEL	INPUT VOLTAGE RANGE	# OF PHASES	OUTPUT VOLTAGE	MAX OUTPUT CURRENT ¹	EFFICIENCY ²	MAX OUTPUT POWER
LDP200-120	200 - 500 VAC (250 - 725 VDC)	1 / 2	24 - 120 VDC	4 A	82 - 90 %	200 W

¹ 4.0 A @ 24 VDC, 3.0 A @ 48 VDC, or $V_{out} \times I_{out} = 200 \text{ W Max.}$ for $V_{out} > 48 \text{ VDC}$

² V_{out} dependent

2. INPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
AC Input Voltage	Nominal 1 / 2 phases	200 - 500 VAC
	Range	170 - 550 VAC
DC Input Voltage	Range	250 - 725 VDC
Input Frequency		47 - 63 Hz
AC Input Current	$V_{in} = 200 \text{ VAC}$	1.4 A
	$V_{in} = 500 \text{ VAC}$	0.5 A
DC Input Current	$V_{in} = 250 \text{ VDC}$	1.0 A
	$V_{in} = 725 \text{ VDC}$	0.4 A
Inrush Peak Current I_{pt}	Peak Current measured after 0.2 ms from main connection; 400 VAC / 50 Hz; $T_a = 25^\circ\text{C}$; Cold Start	$\leq 40 \text{ A}$ $0.69 \text{ A}^2\text{s}$
Standby Power		$< 4 \text{ W}$
Power Factor Correction	Active	> 0.9
Touch (Leakage) Current		$\leq 0.4 \text{ mA}$
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.	MCB 10 A C curve

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Output Voltage (Adjustable)	1 V resolution programmable	24 - 120 VDC
Output Current (Continuous)	or $V_{out} \times I_{out} = 200 \text{ W max.}$ for $V_{out} > 48 \text{ VDC}$	at 24 VDC 4 A
		at 48 VDC 3 A
Load Regulation		$\leq 1.0 \%$
Ripple & Noise ³		$\leq 200 \text{ mVpp}$
Hold-up Time		$\geq 25 \text{ ms}$
Battery Charger Function	C.C. / C.V. (setup via front panel)	
Battery Chemistries	Lead Acid Lithium	
Status Signals	7 segment, 3 digits display 3 programming keys ENABLE - isolated remote ON/OFF input, active for 5 - 30 VDC DC OK - dry contact (NO, 24 VDC / 1A) MODBUS over RS-485 interface	
Parallel Connection	Possible for redundancy (with external ORing module)	

³ 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	Short Circuit Peak Current (Vout dependant)	4.9 - 2.2 A
Overload Protection	Overload Limit (Vout dependant)	4.4 - 1.9 A
Thermal Protection		
Input Undervoltage Lockout (UVLO)		
Input Overvoltage Protection (VDR)		

5. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Operating Temperature	Start-up type tested: - 40°C, possible at Vnom with load deration.	-40 to +70 °C
Storage Temperature		-40 to +80 °C
Derating	See Derating curve	> 60 VDC, over 50°C < 60 VDC, over 50°C
		- 1.5 W/°C - 3.0 W/°C
Dissipated Power		< 21 W
Humidity	Non-condescending	5 - 95 % RH
Life Time Expectancy	Ta = 25°C, full load	71 686 (8.1) 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
Isolation	Input to Output Input to Ground Output to Ground	4.2 kVDC 2.2 kVDC 0.75 kVDC
Safety Standards & Approvals	UL 508 (reference) 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 3 Level 4 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

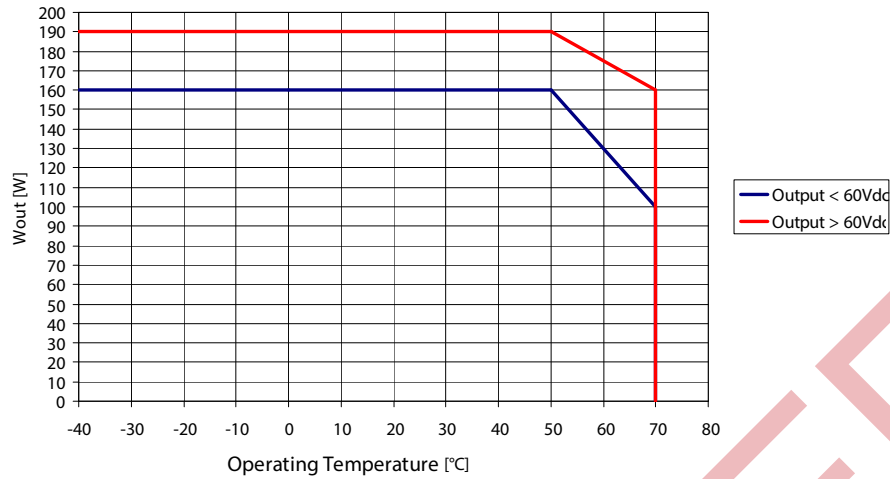


Figure 1. Derating curve

6. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITIONS	SPECIFICATION
Dimensions		80 x 120 x 100 mm 3.15 x 4.72 x 4.94 in
Weight		750 g
Mounting Rail	IEC 60715/H15/TH35-7.5(-15)	
I/O Connection Terminals	Screw type pluggable (24 - 12 AWG)	2.5 mm ²
Auxiliary Connection Terminals	Fast type pluggable (20 AWG)	up to 0.5 mm ²
Communication Interface Connector	RS-485 through RJ45 Female	
Case Material	Aluminum	

7. MECHANICAL DRAWING

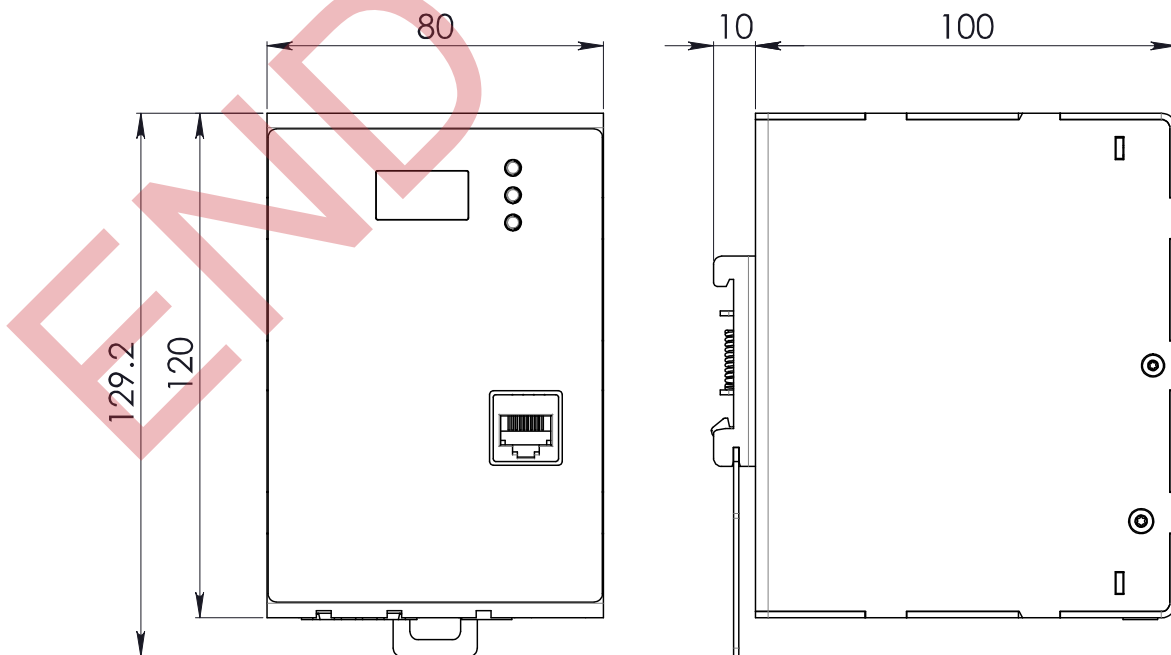
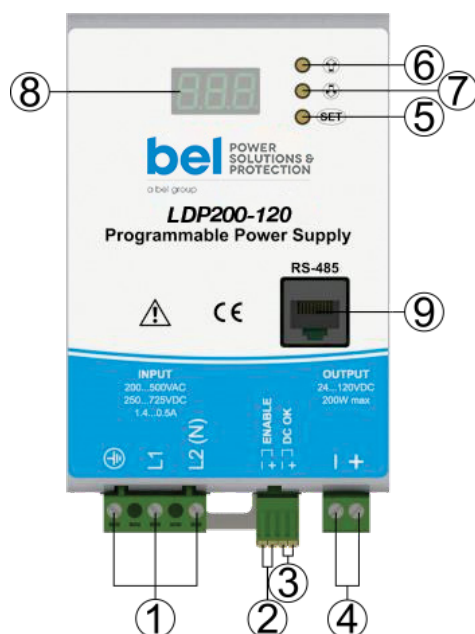


Figure 2. Mechanical Drawing

8. PIN LAYOUT & DESCRIPTION



PIN	DESCRIPTION
1	AC input
2	Enable input
3	DC OK dry contact
4	DC output (load)
5	SET button menu
6	UP button menu
7	DOWN button menu
8	Display
9	RS-485 Comm. port

	Single-phase	Two-phase	DC Input	Enable (5 - 30 VDC)
INPUT CONNECTION (1, 2)	L = Line N = Neutral ⊕ = Earth ground	L1 = Phase 1 L2 = Phase 2 ⊕ = Earth ground	L1 = + Positive DC L2 = - Negative DC ⊕ = Earth ground	+ = Positive DC - = Negative DC
OUTPUT CONNECTION (4)	+ = Positive DC - = Negative DC			
SIGNALLING (3)	DC OK: dry contact • NO • COM			
RS-485 (9)	<ul style="list-style-type: none"> PIN4 = TX/RX D1 PIN5 = TX/RX D0 PIN8 = GND 			

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. For more details, performance and descriptions regarding all parameters not indicated in the above table, please refer to the [Installation Instruction](#).

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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