

LDW120 Series

120 W Wide Input Range
DIN Rail Power Supply

LDW120 Series are single or two phase wide input range DIN rail power supplies.

Their compact size, high efficiency, excellent reliability together with easy installation make them ideal for various industrial, telecom and renewable energy applications.

LDW120 Series are Class I isolation devices and are designed to be mounted on DIN rail and installed inside a protective enclosure.



FEATURES

- 1 or 2 phase AC input 187 - 550 VAC
- Wide DC input voltage range 250 - 725 VDC
- Output voltages 12 V 24 V, 48 V (adjustable)
- Operating ambient temperature range -40°C to +70°C
- Efficiency up to 88%
- Overload 150%
- Excellent field reliability record
- Compact size in aluminum enclosure
- Dimensions: 40 x 115 x 110 mm



APPLICATIONS

- Industrial control equipment
- Telecom
- Renewable energy applications

1. MODEL SELECTION

| MODEL | INPUT VOLTAGE RANGE | # OF PHASES | OUTPUT VOLTAGE | MAX OUTPUT CURRENT | EFFICIENCY | MAX OUTPUT POWER |
|-------------------------|-------------------------------|-------------|----------------|--------------------|------------|------------------|
| LDW120-12 | 200 - 500 VAC (250 - 725 VDC) | 1 / 2 | 12 - 15 V | 8 - 7 A | 81 - 84 % | 120 W |
| LDW120-24 | 200 - 500 VAC (250 - 725 VDC) | 1 / 2 | 24 V | 5 A | 88 % | 120 W |
| LDW120-48P ¹ | 200 - 500 VAC (250 - 725 VDC) | 1 / 2 | 48 V | 2.5 A | 86 % | 120 W |

¹ P models include internal ORing diode

Discontinued model

2. INPUT SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITIONS | SPECIFICATION |
|--|--|---------------------------------------|
| AC Input Voltage | Nominal 1 / 2 phases (UL certified) Range | 200 - 500 VAC 187 - 550 VAC |
| DC Input Voltage | UL certified Range | 300 - 500 VDC 250 - 725 VDC |
| Input Frequency | | 47 - 63 Hz |
| AC Input Current | V _{in} = 200 VAC | 1.4 A |
| | V _{in} = 500 VAC | 0.7 A |
| DC Input Current | V _{in} = 250 VDC | 0.8 A |
| | V _{in} = 725 VDC | 0.3 A |
| Inrush Peak Current I _{pt} | Peak Current measured after 0.2 ms from main connection; 400 VAC / 50 Hz; T _a = 25°C; Cold Start | ≤ 21 A 0.28 A ² s |
| Touch (Leakage) Current | | ≤ 1.0 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 6 A C curve or MCB 6 A D curve |

3. OUTPUT SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITIONS | SPECIFICATION |
|-----------------------------|---|---------------|
| Output Voltage (Adjustable) | 12 V model | 12 - 15 VDC |
| | 24 V model | 23 - 28 VDC |
| | 48 V model | 45 - 55 VDC |
| Output Current (continuous) | 12 V model | 8 - 7 A |
| | 24 V model | 5 A |
| | 48 V model | 2.5 A |
| Load Regulation | | ≤ 1.0 % |
| Ripple & Noise ² | | ≤ 110 mVpp |
| Hold-up Time | V _{in} = 240 VAC | ≥ 17 ms |
| | V _{in} = 400 VAC | ≥ 60 ms |
| Status Signals | DC OK - green LED OVERLOAD - red LED DC OK - dry contact (NO, 24 VDC / 1 A) | |
| Parallel connection | Possible for redundancy (with external ORing module) P (models) - include internal ORing circuit | |

² 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 | Hiccup mode, | 12 V model |
| | Short Circuit Peak Current: | 24 V & 48 V models |
| Overload protection | Hiccup mode, | 12 V model |
| | Overload Limit (30 s): | 24 V model |
| | | 48 V model |
| Thermal protection | | |
| Over voltage protection | | 12 V model |
| | | 24 V model |
| | | 48 V model |

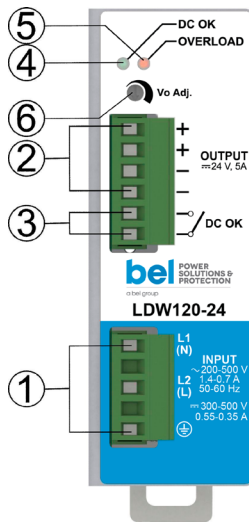
5. ENVIRONMENTAL, EMC & SAFETY SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITIONS | SPECIFICATION |
|------------------------------|---|---|
| Operating Temperature | UL certified up to 45°C Start-up type tested: - 40°C, possible at Vnom with load deration. | -40 to +70 °C |
| Storage Temperature | | -40 to +80 °C |
| Derating | No derating up to 60°C, over 60°C | - 1.2 W/°C |
| Dissipated Power | 12 V model | < 25 - < 20 W |
| | 24 V model | < 17 W |
| | 48 V model | < 19.5 W |
| Humidity | Non-condensing | 5 - 95 % RH |
| Life Time Expectancy | Ta = 25°C, full load | 84 914 (9.6) 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 |
| Protection Class | Class I | |
| Isolation | Input to Output | 4.2 kVDC |
| | Input to Ground | 2.2 kVDC |
| | Output 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 | Class A |
| | EN 55022 / CISPR 22 | Class A |
| EMC Immunity | EN 61000-4-2 | Level 3 |
| | EN 61000-4-3 | Level 3 |
| | EN 61000-4-4 | Level 3 |
| | EN 61000-4-5 | Level 4 |
| | EN 61000-4-11 | 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 |

6. MECHANICAL SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITIONS | SPECIFICATION |
|----------------------|------------------------------------|--|
| Dimensions | | 40 x 115 x 110 mm 1.57 x 4.53 x 4.33 in |
| Weight | | 500 g |
| Mounting Rail | IEC 60715/H15/TH35-7.5(-15) | |
| Connection Terminals | Screw type pluggable (24 - 12 AWG) | 2.5 mm ² |
| Case Material | Aluminum | |

7. PIN LAYOUT & DESCRIPTION



| PIN | DESCRIPTION |
|-----|---|
| 1 | AC/DC input |
| 2 | DC output (load) |
| 3 | Diagnostic Output (dry contact, NC output OK) |
| 4 | Green LED: Output OK |
| 5 | Red LED: Overload |
| 6 | Output voltage adjustment |

| INPUT CONNECTION | Single-phase | Two-phase | DC Input |
|------------------|---|--|--|
| | L = Line N = Neutral ⊕ = Earth ground | L1 = Phase 1 L2 = Phase 2 ⊕ = Earth ground | L2(L) = + Positive DC L1(N) = - Negative DC ⊕ = Earth ground |

| | |
|--------------------------|------------------------------------|
| OUTPUT CONNECTION | + = Positive DC - = Negative DC |
|--------------------------|------------------------------------|

| | |
|-------------------|-------------------------------------|
| SIGNALLING | DC OK: dry contact • NO • COM |
|-------------------|-------------------------------------|

8. MECHANICAL DRAWING

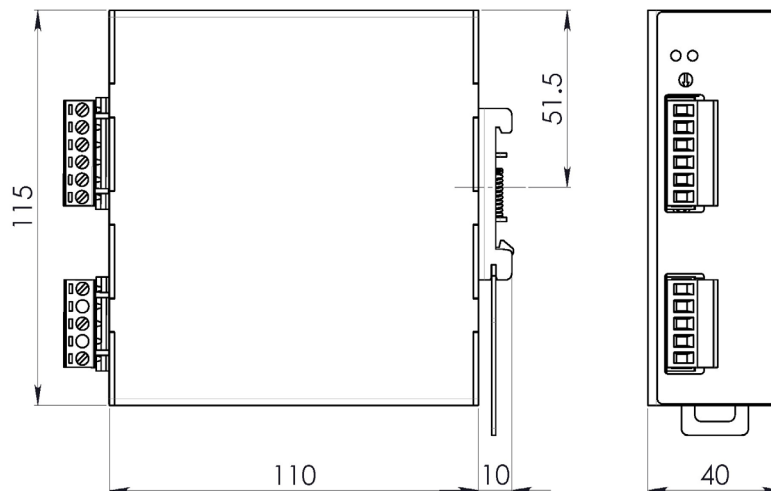


Figure 1. Mechanical Drawing

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.

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.