CONVERT SELECT 360 AND 480
PFC 375/500 WATT AC-DC(DC-DC) CONVERTER
DIN-RAIL SNAP-FIT OR WALL MOUNTING

FEATURES

- Universal AC input range (single phase), or DC input
- High electromagnetic immunity
- Power factor correction (according to IEC/EN 61000-3-2, class D)
- Humidity resistant, pollution degree 2
- Protection degree IP20
- Rugged 35 mm DIN-rail snap-fit design, chassis or wall mounting possible
- Size (W/H/D): 194 x 138 x 114 mm
- Very high reliability, MTBF >400 000 h (GB, 40 °C)

INPUT DATA

- Operating input range: 85 – 264 VAC, 47 – 63 Hz*
  90 – 350 VDC
- Nominal input range: 100 – 240 VAC, 50 – 60 Hz*
- Overvoltage switch-off typ. 275 VAC
- Power factor > 0.90 (Vi = 230 VAC, Po nom)
- Inrush peak current 5 A (230 VAC, Po nom)
- Nominal input current 2.1 A (V_i = 230 VAC, P_o = 375 W)
  3.9 A (V_i = 125 VAC, P_o = 375 W)
  2.75 A (V_i = 230 VAC, P_o = 500 W)
  5.2 A (V_i = 125 VAC, P_o = 500 W)
- Touch current ≤ 5 mA (accord. to IEC 62368-1)
- Built-in input fuse in the phase line 10 A, slow blow
- Efficiency 87% (V_i = 230 VAC, $I_{o\,nom}$)

** For use with higher frequencies (> 63 Hz) contact Bel Power Solutions*

OUTPUT DATA

FRONT-END MODELS	Vo1 [VDC]	Vo2 [VDC]	Io1/2 [A]	Po nom [W]
LXN1601-6	24.7	-	20	494
LXR1601-6	24.7	-	15	371
LXN1701-6	37.05	-	13.4	497
LXR1701-6	37.05	-	10	371
LXN1801-6	49.4	-	10	494
LXR1801-6	49.4	-	7.5	371
LXN2660-6	24.7	24.7	10	494
LXN2770-6	37.05	37.05	6.7	497
LXN2880-6	49.4	49.4	5	494

BATTERY CHARGERS	Vo1 [VDC]	Io1 [A]	Po nom [W]
LXR1240-6 M1	25.68 – 29.3	12.6	344
LXN1240-6 M1	25.68 – 29.3	16.8	458
LXR1840-6 M1	38.52 – 43.95	8.4	343
LXN1840-6 M1	38.52 – 43.95	11.2	458
LXR1740-6 M1	51.36 – 58.6	6.3	343
LXN1740-6 M1	51.36 – 58.6	8.4	458

- Output power derating at low input voltage see X series data sheet
- LXN2660, LXN2770 & LXN2880 have 2 isolated, independently regulated outputs
- Rectangular current limit characteristic typ. 1.1 • $I_{o\,nom}$
- Short-term peak power capability 1.5 • $P_{o\,nom}$, 1 s typ.
- Outputs continuously no-load, overload and short-circuit proof
- Max. 3 converters can be connected in parallel, provided that none of the options R, D, M1 or M2 is fitted.

CONTROL FUNCTIONS

- LED Output(s) OK

PROTECTION CIRCUITS

- Input surge and transient protection
- Input over- and under voltage lock-out
- Built-in over temperature protection
- OVP by a second control loop; $V_{o\,max}$ = 30 V for rated voltage 24 V, 60 V for rated voltage 48 V

OPTIONS

- **F:** Built-in second fuse in the neutral line N≂. DC input voltage is limited to 250 VDC. Caution! Double pole/neutral fusing.
- **S*:** Remote on/off control by means of a logic signal.
- **D1*:** Monitors the output voltage. If the voltage drops below 23 V / 46 V, the D-signal becomes high impedance. For use with battery charger models.
- **D2:** Monitors the input voltage. In the case of AC or DC input failure the D-signal becomes high impedance.
- **D5*:** Monitors the output voltage. If the voltage drops below 21 V / 42 V, the D-signal becomes high impedance.
- **R*:** Output voltage adjustment by an external voltage source V_{ext} (1 to 2.75 V) or a resistor: V_o > 60% to 110% of $V_{o\,nom}$
- **M1:** Multiple options via D-Sub connector (R*, D1*, D2, D5*, S*)
- **M2:** Multiple options via D-Sub connector (R*, D2, D5*)

** On LXN2660, LXN2770 & LXN2880 the options R, D1 & D5 concern only the output connected to the terminals.*

ENVIRONMENTAL CONDITIONS

- Ambient operating temperature –40 to 60 °C
- Case temperature T_C -40 to 80 °C
- Storage temperature -40 to 100 °C
- Sufficient cooling allows the ambient temperature to be higher than 60 °C, if the case temp. T_C is not exceeded.

SAFETY STANDARDS AND APPROVALS

The devices are:

- Safety approved according to UL/CSA 60950-1 and CE declaration according to IEC/EN 62368-1
- Class I equipment according to IEC/EN 62368-1 3rd ed.
- Overvoltage category II
- 2 kVAC input-to-case electric strength test voltage
- Built-in device for vertical mounting on DIN-Rail or wall
- Self cooling; no forced cooling required

SAFETY AND INSTALLATION INSTRUCTIONS

- Built-in device for vertical mounting on DIN-rail or wall
- Protective cover over terminals on request
- Cage-clamp terminals 15 A max per pin
- Self-cooling, no forced cooling required
- Minimum space to next device:
  – Top/bottom: 30 mm; left/right: 20 mm
  – DIN-rail surface to converter front side: 110 mm
- Use proper tool (e.g. 3 mm screw driver) and adequate force for dismounting the converter
- Wire gauges see Fig. 5 and 6
- At source voltages above 250 VDC, an external fuse or a circuit breaker at system level should be installed.
- A second fuse in the wiring to the neutral terminal N≂ or option F is needed if:
  – Local requirements demand an individual fuse in each source line.
  – Neutral and earth impedance is high or undefined
  – Phase and neutral of the mains are not defined or cannot be assigned to the corresponding terminals (L≂ to phase and N≂ to neutral).

WARNINGS

- Installation must strictly follow the national safety regulations.
- Only qualified personnel is allowed to work around or on the equipment itself.
- Failure to properly install and maintain this equipment may result in failure, severe personal injury or substantial damage to property.
- Do not open this apparatus.
- Switch off the system before connecting to the mains.
- Energy danger at the output terminals even after the supply was switched off.
- Any penetration of liquid or foreign solid objects has to be prevented, since the power supply is not hermetically sealed.
- Ensure that a unit failure (e.g. by an internal short circuit) does not result in a hazardous condition.

ACCESSORIES

- Mounting brackets HZZ00618-G (UMB-W), (*Figure 1.*)
- DIN-rail fixing brackets HZZ00624-G (DMB-EWG)
- Protective covers over terminals HZZ01220-G
- Battery temperature sensors.

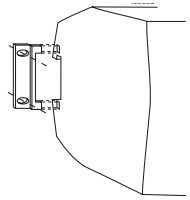

Figure 1. Wall mounting brackets HZZ00618-G (UMB- W)

CONNECTOR PIN ALLOCATION

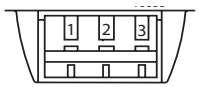

Figure 2. Input Terminals

Pin no.	Pin designation	Electrical determination
1	⏚	Protective earth PE
2	N≂	Input neutral, DC negative
3	L≂	Input phase, DC positive

Table 1. Terminal allocation input side

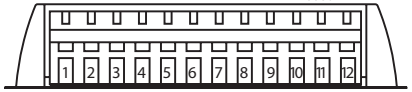

Figure 3. Output Terminals

Pin no.	Pin des.	Single output	Double output
1	⏚	Funct. earth to load	Funct. earth to load
2	+	Output positive	Output 1 positive
3	+	Output positive	Output 1 positive
4	–	Output negative	Output 1 negative
5	–	Output negative	Output 1 negative
6	+	Output positive	Output 2 positive
7	+	Output positive	Output 2 positive
8	–	Output negative	Output 2 negative
9	–	Output negative	Output 2 negative
10	AUX1	Option 1	Option 1
11	AUX2	Option 2	Option 2
12	⏚	Funct. earth to load	Funct. earth to load

Table 2. Terminal allocation output side

MECHANICAL DIMENSIONS

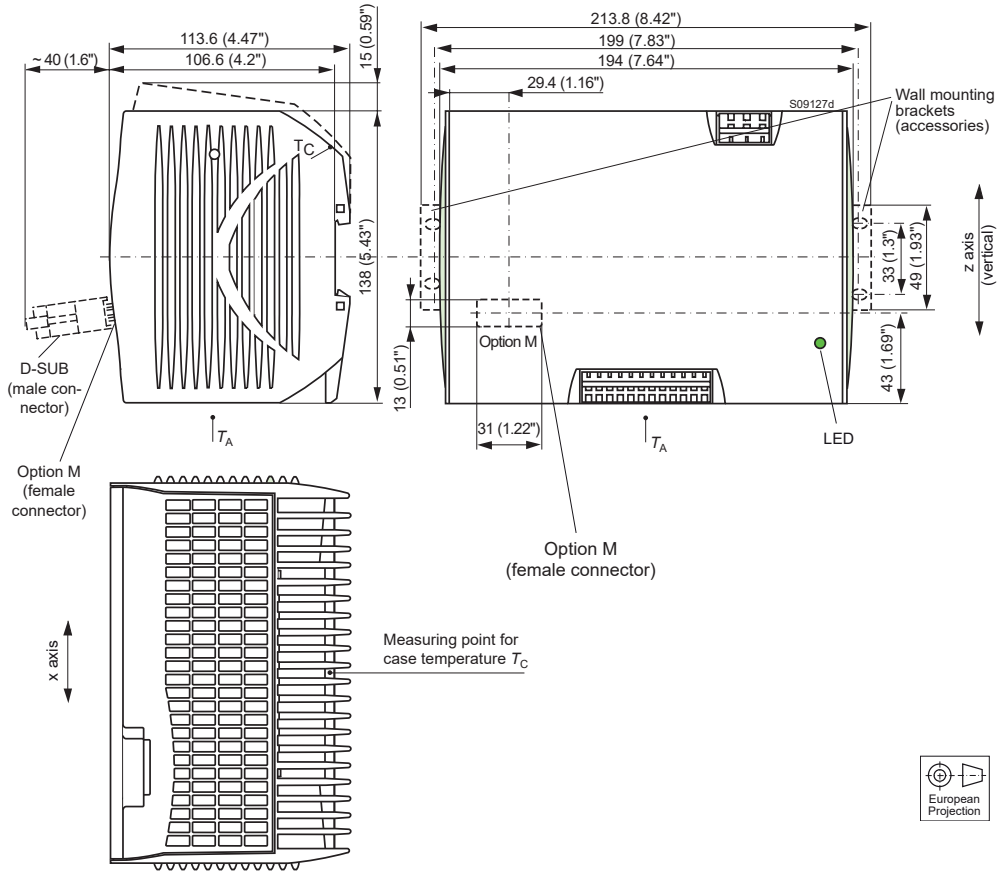

Figure 4. Case X

MOUNTING & DISMOUNTING

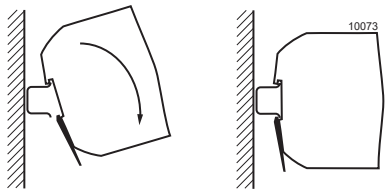

Figure 6. Snap-fit mounting to DIN-rail

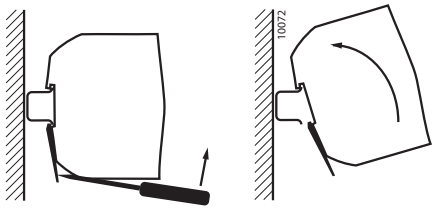

Figure 7. Dismounting from DIN-rail. Use proper tool (min. 3 mm screw driver) and adequate force.

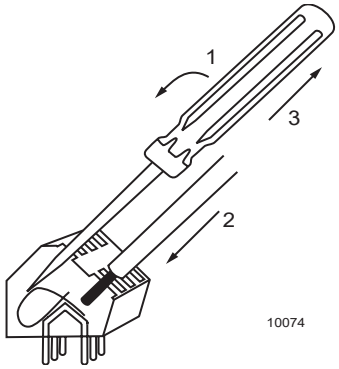

Figure 5. Cage clamp terminals (standard). Use 0.5 to 2.5 mm² (AWG 20 to 12) solid wires or stranded wires, depending on local requirements.

NUCLEAR AND MEDICAL APPLICATIONS

Bel Power Solutions products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the President of Bel Fuse, Inc.

TECHNICAL REVISIONS

The appearance of products, including safety agency certifications pictured on labels, may change without prior notice.

IMPORTANT NOTE ON CE MARK

Bel Power Solutions power supplies are components only and are intended for inclusion within other equipment by professional installers. They are not intended for stand alone use.

The EMC behaviour is described in our data sheet. This data provide the necessary basis for establishing the conformity declaration by the OEM.

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