LNL-600XA 13.8/27.6 VDC 8A/4A Selectable Switch Mode Power Supply Quick Reference

The LNL-600XA Power Supply Unit (PSU)

The LNL-600XA is a high-efficiency and cost-effective power supply designed to house a variety of Lenel controllers and modules in an OnGuard® system.

Featuring a selectable regulated output of 13.8 VDC or 27.6 VDC, the LNL-600XA supplies continuous full rated current to load plus an additional 0.5 A for charging one or two 12 V standby batteries.

The universal mains input voltage enables the power supply to be used across a wide geographical area. The highly efficient switch mode design ensures low operating costs while generating less heat. The modular construction simplifies maintenance.

- Selectable 12 VDC or 24 VDC output
- Mains fail volt-free fault output
- Independent ancillary relay
- Continuous full-rated current-to-load
- Provides an additional 0.5 A to charge up to two standby batteries
- Unique enclosure design provides a compact multi-controller solution
- Houses all common Lenel controllers and modules
- Electronic short circuit and overload protection
- Universal mains input voltage 90-264 VAC
- Modular construction for ease of maintenance
- Mains transient protection circuit
- Front and rear tampers
- Installer-safe design with all high-voltage electronics fully shrouded
- PCB supports and fixings supplied
- PSU status and diagnostic LEDs (mains present and fault)
- Three-year warranty

Installation

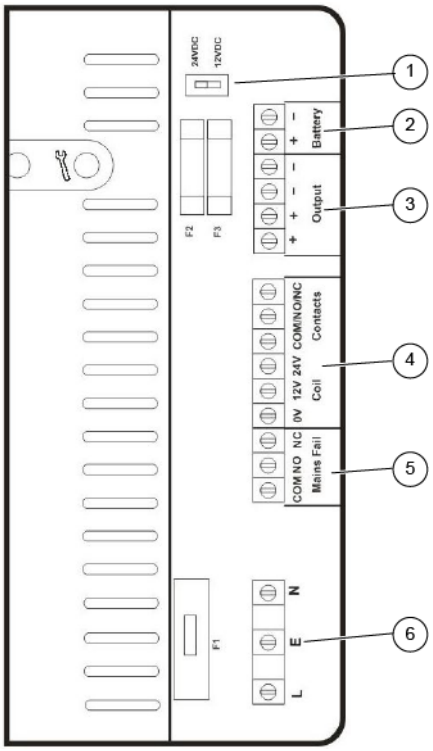
This unit is only suitable for installation as permanently connected equipment. The PSU is NOT SUITABLE for external installation.

Before installation, ensure that the mains power source has a separate (approved) disconnect device that is fitted with a fuse or other over-current protection rated at 3 A maximum. Ensure that the disconnect device has the appropriate earth fault protection to the applicable standard.

Before connecting the PSU to the mains power source, verify that the external disconnect device is OFF.

Install the PSU according to all relevant safety regulations applicable to the application. EQUIPMENT MUST BE EARTHED.

Power Supply Unit Connections

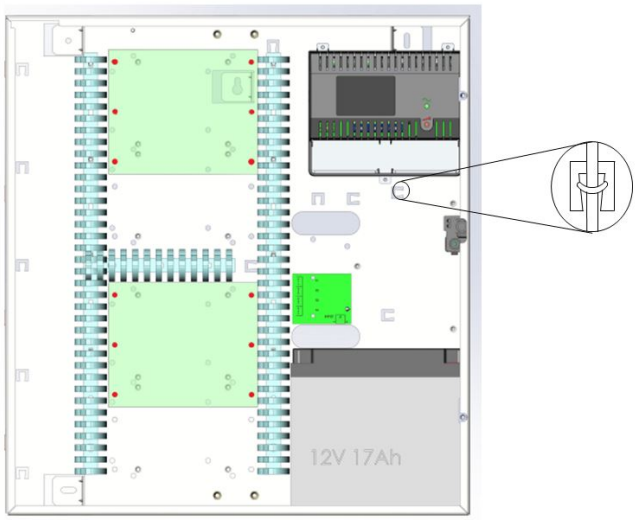


Callout	Description
1	Output voltage switch
2	**Batt +/-** Connection to standby battery. Use provided cables. Observe polarity.
3	**O/P +, +, -, -** Dual (common) output connection to power external equipment. Observe polarity.
4	**0V, 12V, 24V, COM, N/O, N/C** Independent ancillary relay available for installer use, operated by either 0V/12V or 0V/24V, local or remote source (for example, fire alarm interface). Contact rating is 30 V, 0.5 A.
5	**Mains Fail COM, N/O, N/C** COM connects to N/O when mains is on. COM connects to N/C when mains is off. Contact rating is 30 V, 0.5 A
6	Mains input

Mounting

1. Mount the PSU securely in correct orientation allowing minimum clearance of 100 mm to other objects or walls. Fasten cables using cable tie securing points as shown.

Mounting the Power Supply



2. Route mains and low voltage output cables via different knockouts and/or cable entry holes.

Note: Use bushes and cable glands rated to UL94 HB minimum.

Mains Power-up

1. Attach the appropriately-rated mains cable (minimum 0.5mm^2 [3A], 300/500 VAC) and fasten using cable ties.
2. To set the output voltage, set the output voltage switch to the appropriate position: 13.8 DC (12 V battery) or 27.6 VDC (2 x 12 V batteries).

Note: Only select or change the voltage output with the unit powered down (mains and battery).

3. Apply mains power. Check for 13.8 VDC or 27.6 VDC on load outputs. Ensure that the green Mains LED is on.
4. Disconnect mains power.

Load Output

1. Attach the correctly rated load cable and fasten using cable ties. Note polarity. Ensure that the rated load voltage matches what supply is set to.
2. Apply mains power. Check Green Mains LED is ON and output is healthy before connecting load.
3. Connect and verify load is operating correctly.
4. Disconnect mains power.

Standby Battery

Note: Ensure a single 12 V battery is used for 12 V operation, and two 12 V batteries in series are used for 24 V.

1. Attach supplied battery cables to terminal block and batteries.

Note: If in 24 V mode, ensure correct polarity of the battery connections: **red** battery lead to **+ve** on **Battery 1**, **black** battery lead to **-ve** on **Battery 2**. Connect **-ve** on **Battery 1** to **+ve** on **Battery 2** using a short link lead.

2. Apply mains power. Check green Mains LED is on.
3. Check there is no fault indication on Yellow Fault LED.
4. Disconnect mains power. Check that the batteries continue to supply the load. Check Green Mains LED is OFF and Mains Fail relay operated.

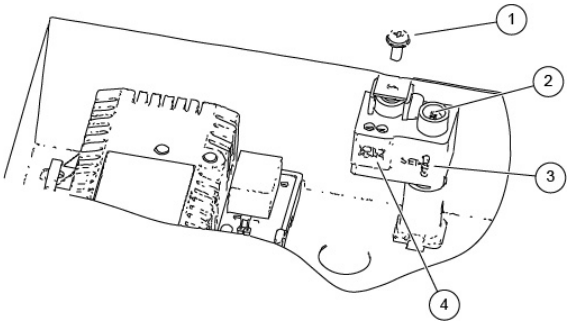
Note: Batteries must have sufficient charge to supply the load.

5. Reconnect mains power. Check Green Mains LED is ON and Mains Fail relay showing healthy.
6. Remove the Output fuse (F3) and verify that the Yellow Fault LED is ON.
7. Replace the Output fuse, and remove the PSU protection fuse (F2). Verify that the Yellow Fault LED is ON.
8. Replace the PSU protection fuse (F2). Verify that the Yellow Fault LED is OFF.
9. Test operation of Ancillary relay as required.

Tamper

1. Connect tamper switch to appropriate inputs of control and indicating equipment (CIE).
2. Check that the tamper switch is CLOSED when the lid/cover is closed and the retaining screw is fitted, OPEN when the retaining screw is removed and the lid/cover is open. Use fine adjustment screw if necessary, no more than one turn in either direction, to align indicator with set point.
3. Close the lid and fasten with screw supplied. Alternatively fit the cover in place (the correct orientation is with the cover retaining feature engaging over the bottom lip of the base) and fasten with the supplied screws.
4. Verify at the controller that the tamper circuit is closed.

Tamper Arrangement



Callout	Description
1	Retaining screw
2	Fine adjustment screw
3	Set position indicator

Callout	Description
4	Tamper switch connections

Operating Instructions

This unit is intended for use by Service Personnel only. There are NO USER SERVICEABLE parts inside.

The green Mains LED is on while the mains supply is present. In the event of a fault condition, the yellow Fault LED will be on.

Explanation of Symbols (not all may apply)

	Fault Indication
	Mains Present
	Protective Earth
	Shock Risk - Isolate before attempting access
	Certification Level
	Do not dispose of in unsorted waste

Local Indicators

MAINS LED (Green)	Mains present
FAULT LED (Yellow)	Fault present. Output fuse fail or Protection fuse fail (disconnect load and battery); battery shorted, reversed, or low voltage

Maintenance

There is no regular maintenance required of the PSU other than periodic testing, calibration check and replacement of the standby batteries. Reference should be made to the battery manufacturer's documentation to determine typical/expected battery life with a view to periodic replacement of the battery.

If the output of the PSU fails (for example, a short circuit load), investigate the cause of the failure and rectify it before restoring power to the PSU. Replace the Output (F3) or PSU Protection (F2) fuses as needed. Ensure the correct fuse rating and type is used.

Disposal of Product at End of Life

This product falls within the scope of EU Directives 2012/19/EU Waste Electrical and Electronic Equipment (WEEE) and 2013/56/EU (Battery). At the end of life, the product must be separated from the domestic waste stream and disposed via an appropriate approved WEEE disposal route in accordance with all national and local regulations.

Before disposal of the product, any batteries must be removed, and disposed separately via an appropriate approved battery disposal route in accordance with all national and local regulations. Package used batteries safely for onward transport to your supplier, collection point or disposal facility.

Note: Risk of fire or explosion if bare battery wires are allowed to touch.

See Specification for battery type information. The battery is marked with the crossed out wheelie bin symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg).For more information see www.recyclethis.info.

Specifications

Input Specifications

Voltage (rated)	100 - 240 VAC
Voltage (operating)	90 - 264 VAC
Frequency	50 - 60 Hz
Maximum Current	2 A @ 90 VAC
Mains Input Fuse	T3.15A (20 mm 2HRC)
Maximum Standby Power	1.5 W no load and no battery connected

Output Specifications

	12 V Mode	24 V Mode
Voltage (under mains)	13.5 - 14.0 VDC (13.8 VDC nominal)	27.0 - 28.0 VDC (27.6 VDC nominal)
Voltage (under battery)	10.5 - 12.4 VDC	21.0 - 24.7 VDC
Fused Output Module	8 x F1.0 A	8 x F1.0 standard; 8 x F0.5 spare fuse kit included
Maximum Load Current (total)	8 A	4 A
Load Output Fuse (module)	F8.0A	F4.0A
Ripple	100 mV pk-pk max	100 mV pk-pk max
Overload	Electronic shutdown (mains operation) and fuse protection Battery protection by self-resetting thermal fuse	

Standby Battery

Battery Type	One or two 12V Valve Regulated Lead Acid

Standby Battery

Battery Capacity	**12 V mode:** 1 x BS131N 18Ah max **24 V mode:** 2 x BS127N 8Ah max
Battery Charging Fuse protection	0.5A thermal fuse (self-resetting)

Environmental

Temperature	-10 to +40°C (operating) 75% RH non-condensing; -20 to +80°C (storage)

Specification Table

Output Current (13.8 VDC)	8 A
Output Current (27.6 VDC)	4 A
Battery Charge Current	0.5 A
Mains LED (Green)	✓
Fault LED (Yellow)	✓
Max Mains Input Current (at 90 VAC)	2.0 A
Mains Input Fuse (20 mm HRC)	T3.15A
F3 - Output Fuse (20 mm)	F8.0A
F2 - PSU Protection Fuse (20 mm)	F4.0A
Battery Fuse	PTC (self-resetting) fuse - Internal to unit

Mechanical

Enclosure Dimensions (W x H x D)	478 mm x 515 mm x 146 mm (external)
Maximum Battery Capacity	1 x BS131N 18Ah (12 V mode)
Weight	10.5 Kg
IP and IK Ratings	IP30/IK08

Note: For 12 V applications, ensure voltage selector is set to **12 V** before applying load or connecting the battery.

Compliance

This power supply unit meets the essential requirements of the following European directives:

- Low Voltage 2014/35/EU
- EMC 2014/30/EU
- WEEE 2012/19/EU
- RoHs2 2011/65/EU

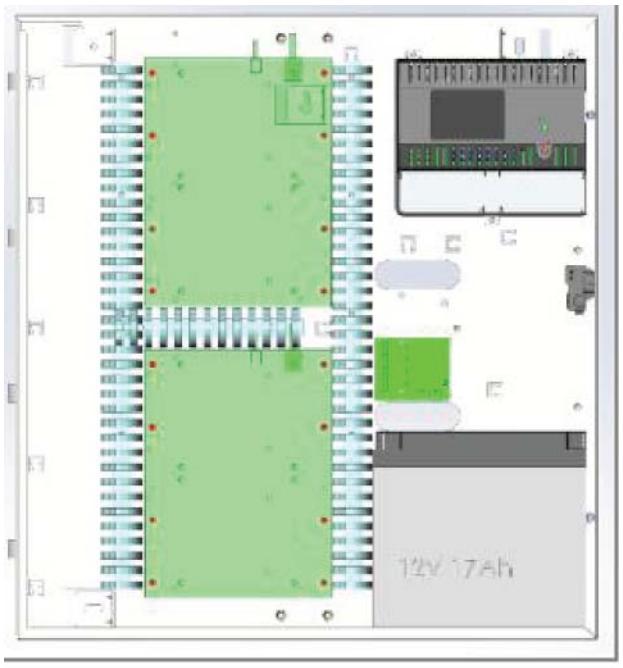
Product Warnings and Disclaimers

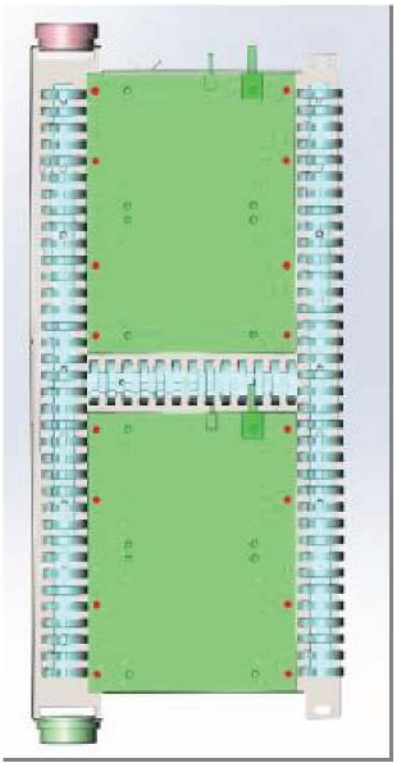
These products are intended for sale to, and installation by, an experienced security professional. UTC Fire & Security cannot provide any assurance that any person or entity buying its products, including any “authorized dealer,” is properly trained or experienced to correctly install security-related products.

For more information on product warnings, refer to https://www.utcfssecurityproducts.eu/productwarning/ or scan the following code:

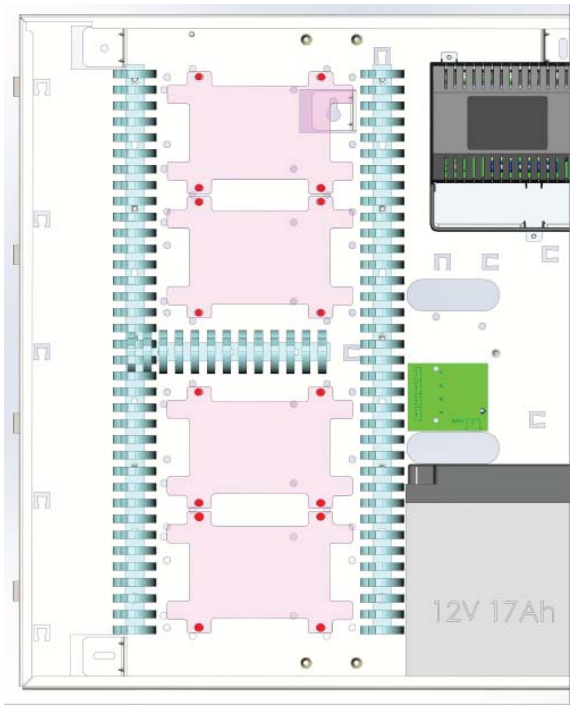
Controller and Module Layouts

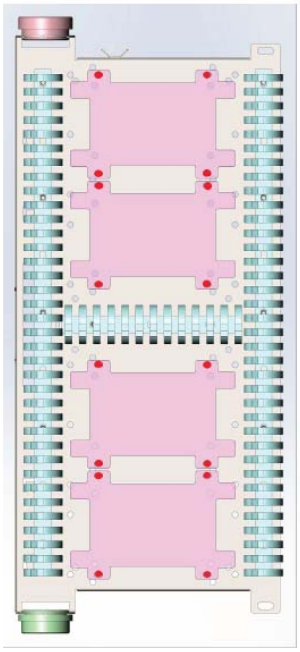
LNL-1000, 1100, 1200, 1320, 2000, 2220, 4420





LNL-1300e, 2210



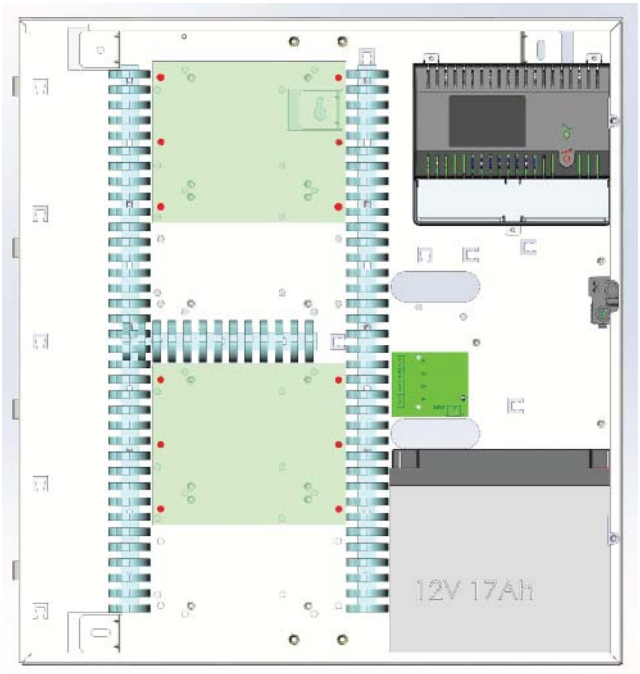


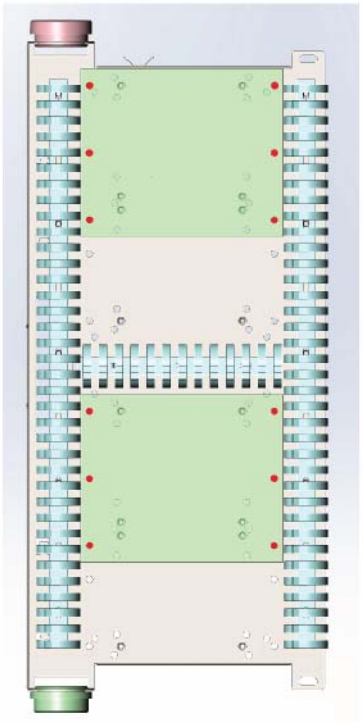
Notes: When the LNL-1300e and/or the LNL-2210 are used on the backplate of the LNL-600XA (bottom position), the first hinged plate (middle position) cannot be used and must be left out to create room for the Ethernet connection.

When the LNL-1300e and/or the LNL-2210 are used on the first hinged plate (middle position), the second hinged plate (top position) cannot be used and must be left out to create room for the Ethernet connection.

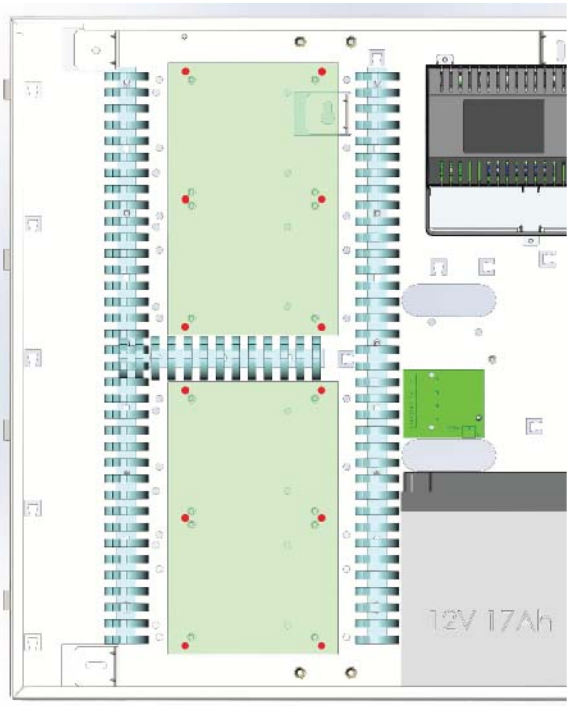
The second hinged plate (top position) cannot support the LNL-1300e and/or the LNL-2210.

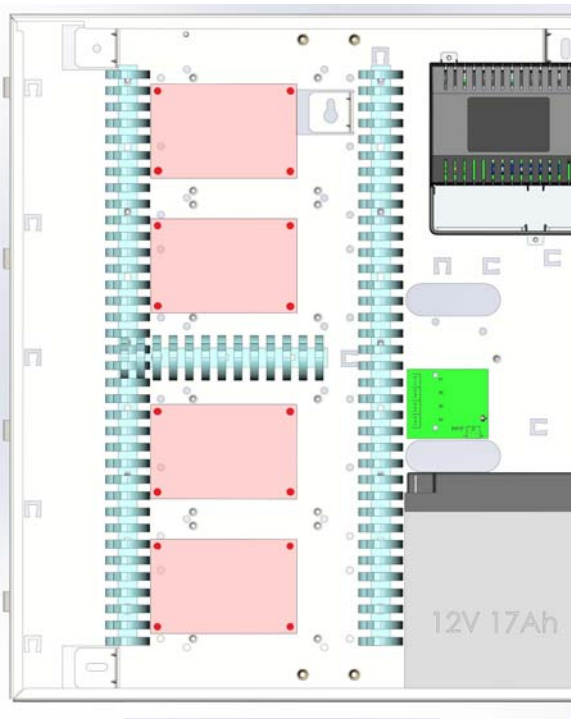
LNL-500, 3300, 8000





LNL-1100-U, 1200-U, 1320-U




12V 17Ah