

The LNL-400XA Power Supply Unit (PSU)

The LNL-400XA 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 regulated 13.8 VDC output, the LNL-400XA supplies continuous full rated current to load. Maximum battery life is assured using deep discharge protection to prevent premature battery failure when operating in standby mode for extended periods. Two sets of volt-free contacts are provided to signal (i) loss of mains and (ii) battery and loss of output faults.

The LNL-400XA can supply a continuous full-rated current to load plus an additional 0.5A for charging a 12V standby battery.

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.

- Continuous full-rated current-to-load
- Universal mains input voltage 90-264 VAC
- High-efficiency electronics for reduced running costs and lower operating temperatures
- Mains transient protection circuit
- Lid and removal from wall tamper detection
- Installer-safe design with all high-voltage electronics fully shrouded
- PCB supports and fixings supplied
- Houses a variety of Lenel controllers and modules
- PSU status and diagnostic LEDs (mains present and fault)
- Volt-free contact signaling mains failure (EPS)
- Volt-free contact signaling output and battery faults (GEN)
- Full electronic short circuit and overload protection on load output under mains operation
- Individual battery and output fuse protection
- 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.

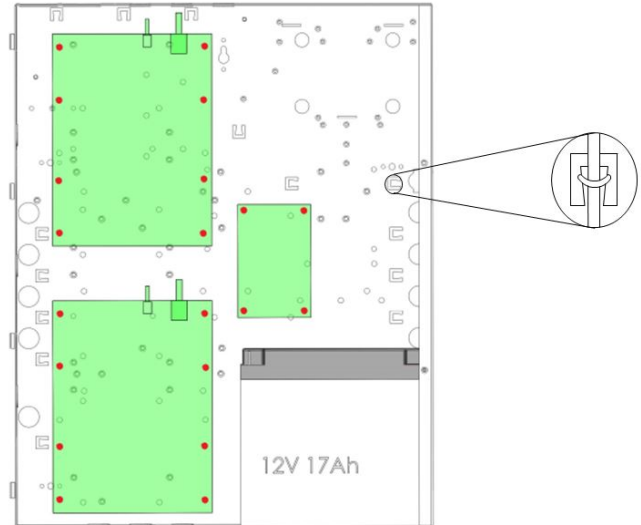
Before connecting the PSU to the mains power source, verify that the external disconnect device is OFF.

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

Mounting

1. Mount the PSU securely in correct orientation allowing minimum clearance. 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 0.5mm² [3A], 300/500 VAC) and fasten using cable ties.
2. Apply mains power. Check for 13.8 VDC on load outputs. Ensure that the green Mains LED is on.
3. Disconnect mains power.

Load Output

1. Attach the appropriately-rated load cable and fasten using cable ties. Note polarity.
2. Apply mains power. Check green Mains LED is on.

Note: The red LED on the PSU may be on to indicate that no battery has been connected. This is normal.

3. Verify load is operating correctly.
4. Disconnect mains power.

Standby Battery

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

Note: Ensure correct polarity of battery connections: +ve use **red** lead, -ve use **black** lead.

2. Apply mains power. Ensure that the green Mains LED is on.
3. Ensure that there is no fault indication on the red LED (see [Signaling Outputs](#)).
4. Disconnect mains power. Check that the batteries continue to supply voltage and current to the load. The Green LED should be off.

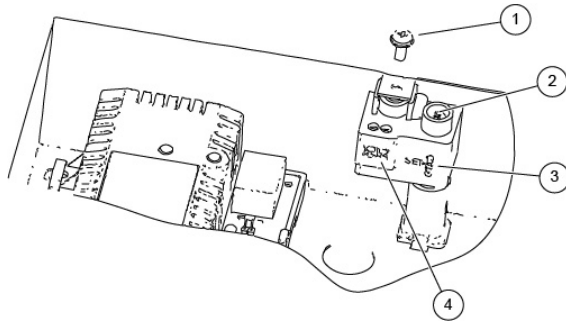
Note: Batteries must have sufficient charge to supply the load.

5. Reconnect mains power. The green LED should be on.

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.

Tamper Arrangement



| Callout | Description |
|---------|---------------------------|
| 1 | Retaining screw |
| 2 | Fine adjustment screw |
| 3 | Set position indicator |
| 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 red Fault LED flashes and the corresponding (EPS or GEN) fault signal contacts open.

Explanation of Symbols (not all may apply)

| | |
|--|------------------|
| | Fault Indication |
| | Mains Present |
| | Protective Earth |

Explanation of Symbols (not all may apply)

| | |
|--|---|
| | Shock Risk - Isolate before attempting access |
| | Certification Level |
| | Do not dispose of in unsorted waste |

Local Indicators

| | |
|-------------------|--|
| MAINS LED (Green) | Mains present |
| FAULT LED (Red) | Flashes (1s period) when: loss of mains, battery disconnected, output fuse fail, battery fuse fail, output short circuit or low output voltage |

Maintenance

Note: Dispose of used batteries according to the battery manufacturer's instructions and all local and national regulations.

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

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.

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 250 VAC) |

Output Specifications

| | |
|----------------------|---|
| Voltage | 13.5 - 14.2 VDC (13.8 VDC nominal) on mains power; 10.0 - 12.3 VDC on battery standby |
| Maximum Load Current | 4 A (max) |
| Ripple | 150 mV pk-pk max |

Output Specifications

| | |
|------------------|--|
| Load Output Fuse | F4.0A |
| Overload | Electronic shutdown until overload or short circuit removed (under mains power only) |

Standby Battery

| | |
|----------------------------------|--------------------------------|
| Battery Type | 12 V Valve Regulated Lead Acid |
| Battery Capacity | 1 x BS131N 18Ah max |
| Battery Charging Fuse protection | F4.0A |

Mechanical

| | |
|----------------------------|--------------------------------------|
| Enclosure Dimensions | 400W x 500H x 80D (mm) |
| Weight (excluding battery) | 5.8 Kg |
| Enclosure Material | Steel - white powder coated RAL 9003 |
| IP and IK Ratings | IP30/IK08 |

Environmental

| | |
|-------------|--|
| Temperature | -10 to +40° C (operating) 95% RH non-condensing; -20 to +80° C (storage) |
|-------------|--|

Signaling Outputs

| | |
|---------------------|--|
| GEN Fault (general) | 0.1A @ 60 VDC N/O volt-free contact. Open when battery is disconnected, *output fuse fail, battery fuse fail or output short circuit. (*Applies only to O/P 1 of multiple fused units) |
| EPS Fault (mains) | 0.1A @ 60 VDC N/O volt free contact; open when loss of mains for more than 10 s |
| Lid Tamper | 3A @ 125 VAC N/O volt free contact. Note: Contact open in when lid opened by normal means or unit is removed from mounted surface (TAMPER ACTIVE condition). |

Connections

| | |
|---------------|--|
| +LOAD 1,2,3,4 | +ve voltage output to load equipment |
| -LOAD 1,2,3,4 | -ve voltage output to load equipment |
| EPS Fault | Volt-free contacts for loss of mains indication |
| GEN Fault | Volt-free contacts for general faults (see Signaling Outputs) |
| +BATT | +ve (red lead) connection to standby battery |
| -BATT | -ve (black lead) connection to standby 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

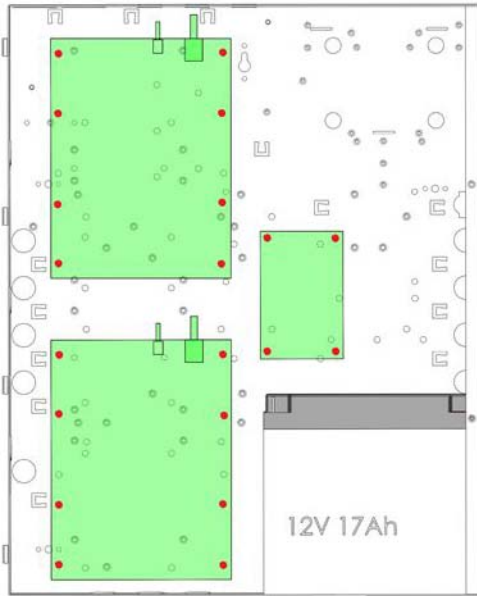
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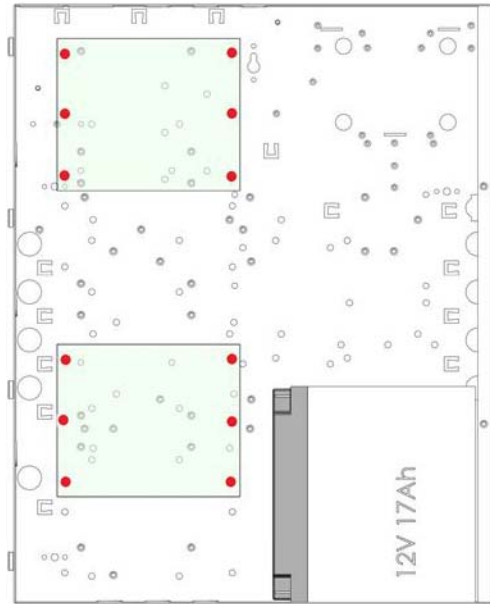


Controller and Module Layouts

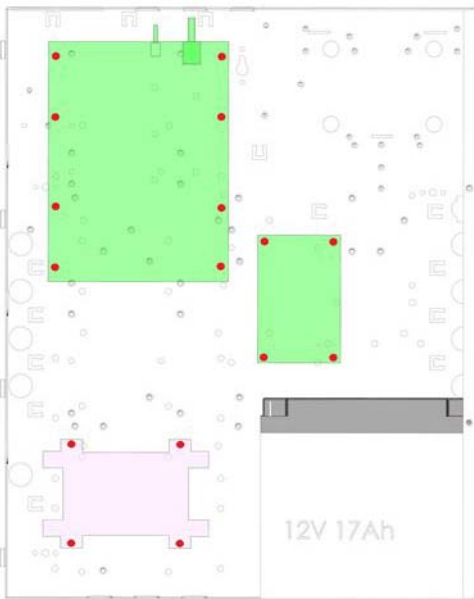
LNL-1000, 1100, 1200, 1300, 1300-U, 1320, 2000, 2220, 4420



LNL-500, 3300, 8000



LNL-1000, 1100, 1200, 1300, 1300e, 1300-U, 1320, 2000, 2210, 2220, 4420



LNL-1300e, 2210

