

The LNL-300XA 13.8 VDC 4 A Battery Monitoring Switched Mode PSU

The LNL-300XA is a high-efficiency and cost-effective power supply designed for use within a Lenel access control system.

Featuring a regulated 13.8 VDC output, the LNL-300XA supplies continuous full rated current to load, and a universal mains voltage input. 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.

Other features of the LNL-300XA include:

- Continuous full-rated current-to-load
- Universal mains input voltage 90 to 264 VAC
- High-efficiency electronics for reduced running costs and lower operating temperatures
- Mains transient protection circuit
- Lid and removal from wall tamper detection
- Green mains present LED
- Red fault diagnostic LED
- Volt-free contact signaling mains failure (EPS)
- Volt-free contact signaling output and batter faults (GEN)
- Full electronic short circuit and overload protection on load output under mains operation
- Individual battery and output fuse protection

Installation Instructions

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

This unit must be fed from a mains power source that has a separate (approved) disconnect device and is fitted with a fuse or other over-current protection device rated at 3 A maximum. Ensure that the disconnect device used has appropriate earth fault protection to the applicable standard.

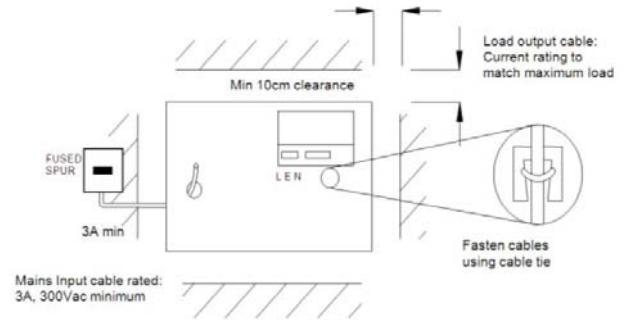
Before connecting the PSU to the mains power source, verify that the external disconnect device is OFF.

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.

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 flash to indicate that no battery has been connected. This is normal.

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

Signaling

1. Connect EPS and GEN fault outputs to appropriate inputs of control and indicating equipment (CIE).

Standby Battery

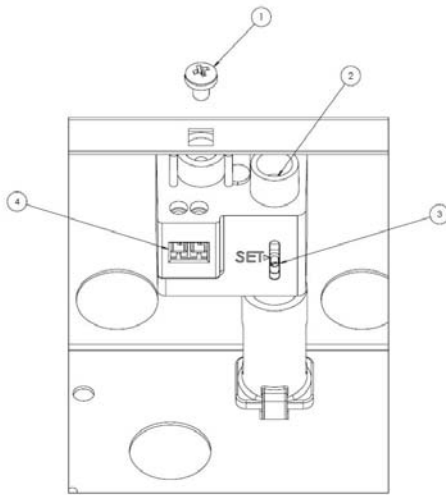
1. Attach supplied battery cables to terminal block and batteries.

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

Tamper

1. Close the lid/cover and fasten with the supplied lid fixing screw (#1, sets tamper switch).
2. With the unit mounted on the wall, check that the rear tamper is not in a position that will affect its operation (for example, over a mortar course, recess or raised area on the wall).
3. Check that the tamper switch is:
 - CLOSED when the lid/cover is closed and the retaining screws are fitted. Adjust the tamper by using the fine adjustment screw (#2) and the set position indicator (#3).
 - OPEN when the retaining screws are removed and the lid/cover is open. Adjust the tamper by using the fine adjustment screw (#2) and the set position indicator (#3).
4. Close the lid/cover and fasten the screws.

Tamper Arrangement



5. Confirm that the tamper circuit (#4) is closed at the control panel.

Operating Instructions

In the event of loss of mains, a battery fault, or a GEN fault, the corresponding fault signal contacts will open (see Fault Diagnostic Table for LED indicator status).

If the output of the PSU fails (for example, short circuit load, connection to a deeply discharged battery), investigate the cause of the failure Rectify the fault before restoring power to the PSU. If any of the fuses must be replaced, ensure the correct fuse rating and type is used.

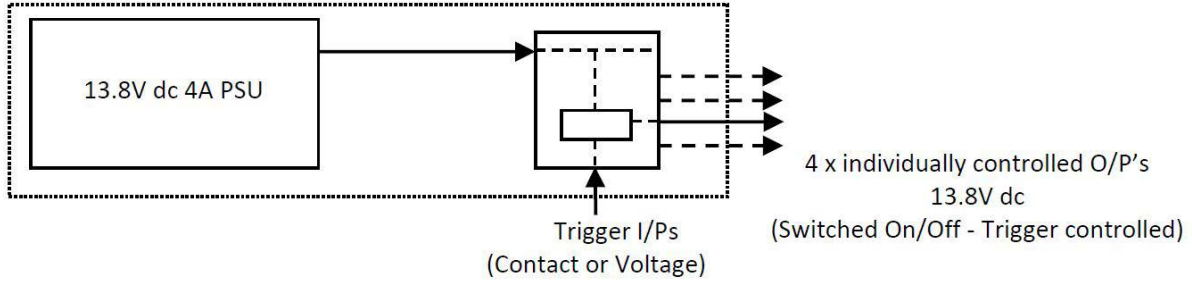
Fault Diagnostic Table

Red LED (Fault)	Green LED (Mains)	PSU Status
OFF	ON	Normal. Battery fully charged.
One short flash every second	ON	Normal. Battery charging but not fully charged.
Flashing: one second ON one second OFF	ON	Fault. Output fuse or battery fuse blown, or battery missing.
	OFF	Fault. No mains, output fuse blown.
One short flash every 3 seconds	OFF	Fault. No mains, battery supplying load.
OFF	OFF	Fault. No mains, no output, batteries disconnected or completely discharged.

FireFOM Operation

The FireFOM functionality provided on the daughter card of the power module provides the installer with individual control of the four fused outputs on the 4 A PSU by the means of either a volt-free contact (N/O or N/C), or a low-voltage signal (12 VDC/24 VDC), as shown in the following block diagram.

A typical application for the FireFOM is to keep the ACU powered in the event of a fire alarm activation that requires the removal of power from certain parts of the system (for example, door lock power removed).



FireFOM Connections and Jumpers

- **TRIG +:** Trigger I/P from control device (+VE or Contact)
- **TRIG -:** Trigger I/P from control device (0V or Contact)

This device has three modes of trigger operation that are configured by the onboard jumpers.

- **Contact Mode (Normally Open):** Jumper across Pins 2 and 3.



- **Contact Mode (Normally Closed):** Jumpers across Pins 1 and 2, and Pins 3 and 4.



- **Voltage Mode:** Jumper across Pins 3 and 4.



Each channel can then be configured using the jumpers next to the relevant fuse.

Channel Always ON (+V)



Channel Isolated on TRIGGER (Relay)



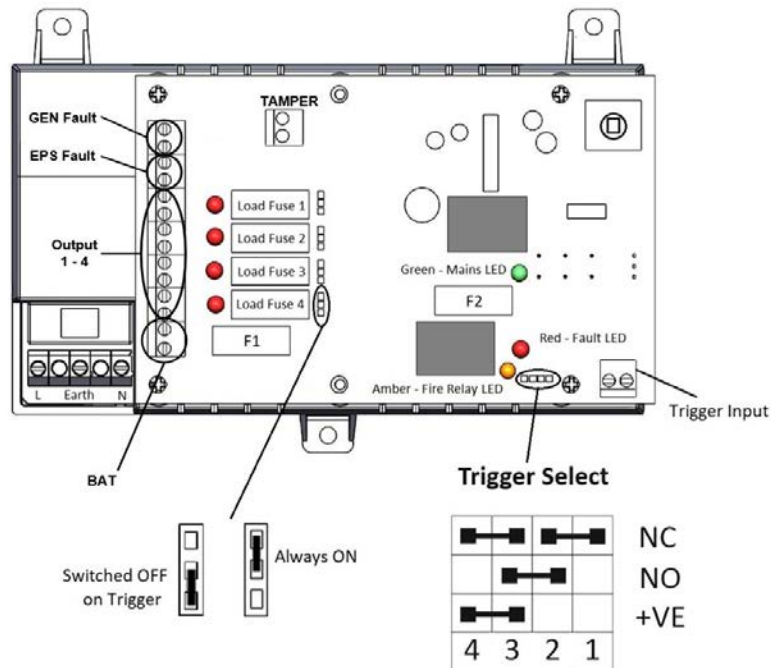
Note: To disable the channel (no output), remove the jumper.

The following table defines the output state of the NO and NC contacts with respect to the selected mode and trigger inputs.

Mode	Trigger Select	Jumpers	Trigger + & -	Output	Amber LED
Contact Mode N/O	NO	2 and 3	Open	No output	OFF
			Closed	12 VDC	ON
Contact Mode N/C	NC	1 and 2	Open	12 VDC	ON
		3 and 4	Closed	No output	OFF
Voltage Mode	+VE	3 and 4	+V applied	12 VDC	ON
			Removed	No output	OFF

Note: Trigger input terminals + and - are only polarity conscious when used in Voltage mode.

Typical Setup for LNL-300XA



Notes: In the example above, when the trigger select jumper is set across Pins 3 and 4 (Voltage mode), power to the locks configured to the relay switched outputs is removed when the 24 VDC signal from the fire alarm panel is disconnected. Tamper on the printed circuit board of the power supply unit is not used. Use the enclosure tamper.

Specifications

Input Specifications

Voltage (rated)	100 to 240 VAC
Voltage (operating)	90 to 264 VAC
Frequency	50 to 60 Hz
Maximum Current	< 2.0A at Full load
Mains Input Fuse	T3.15 A (20 mm 250 VAC HBC)

Output Specifications

Voltage	12.8 to 14.2 VDC (13.8 VDC nominal) on mains power; 9.8 to 13.0 VDC on battery standby
Maximum Load Current	4 A F4.0A (20 mm glass)
Ripple	150 mV-p max
Load Output Fuses	4 # F1.0A (20 mm glass)
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	17/18 Ah (max)
Battery Charging Fuse protection	F4.0A (20 mm glass)

Mechanical

Enclosure Dimensions	437 H x 245 W x 110 D (mm)
Weight (excluding battery)	4.6 kg
Enclosure Material	Steel - white powder coated
Battery Capacity (max)	17 /18 Ah

Environmental

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

Rating	0.1 A at 60 VDC 16 Ohm solid state relay contacts, volt-free
GEN Fault (general)	Open if battery terminal voltage is < 11.5 VDC (when operating in standby with no mains present), battery not present or output and/or battery fuse blown.
EPS Fault (mains)	Open if Loss of mains for > 8s
Tamper	0.5A at 30 VDC volt-free contact. Open when lid is open or enclosure removed from surface.

Connections

O/P +, -	Power connection to equipment (observe polarity).
EPS Fault	Relay output for mains fail. Open if loss of mains.
GEN Fault	Relay output for General Fault. Open in fault condition.
BATT +, -	Connection to standby battery. Use cables provided (observe polarity).

Maintenance

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 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.

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

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.







Product Warnings and Disclaimers

THESE PRODUCTS ARE INTENDED FOR SALE TO AND INSTALLATION BY QUALIFIED PROFESSIONALS. UTC FIRE & SECURITY CANNOT PROVIDE ANY ASSURANCE THAT ANY PERSON OR ENTITY BUYING ITS PRODUCTS, INCLUDING ANY "AUTHORIZED DEALER" OR "AUTHORIZED RESELLER", IS PROPERLY TRAINED OR EXPERIENCED TO CORRECTLY INSTALL FIRE AND SECURITY RELATED PRODUCTS.

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



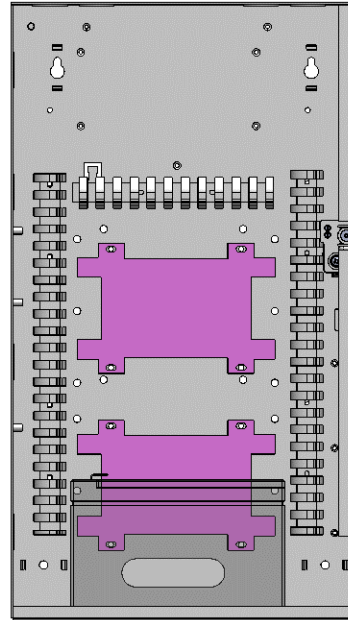
Explanation of Symbols (not all may apply)

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

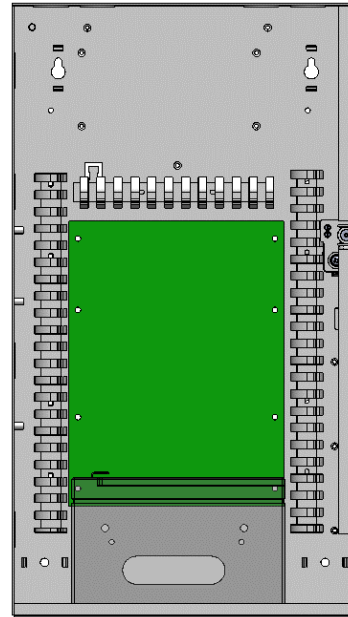
Controller and Module Layouts

The LNL-300XA includes fixing positions for a range of OnGuard[®] controllers and modules.

LNL-1300e, LNL-X2210



LNL-1000, LNL-1100 Series 3, LNL-1200 Series 3, LNL-1320 Series 3, LNL-2000, LNL-X2220, LNL-X4420



LNL-500, LNL-X3300, LNL-8000, LNL-1300 Series 3, LNL-1300-U

