

# ELMDENE

Protecting People & Property

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**13.8V DC / 27.6V DC : SELECTABLE**  
**SWITCH MODE POWER SUPPLIES (UNBOXED)**  
 WITH REMOTE FAULT SIGNALLING

**Models:**  
**G1224-xxNU**  
 Where 'xx' is max load currents

## FEATURES

A range of unboxed (power module only) high efficiency cost effective power supplies, typically for use in Access Control but also suitable for CCTV and General Purpose applications. Featuring a selectable regulated output of 13.8V dc or 27.6V dc, supplying continuous full rated current to load plus an additional 0.5A for charging one or two 12V 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 12V dc or 24V dc output
- Mains fail volt free fault output
- Independent ancillary relay
- Continuous full rated current to load
- Up to 0.5A to charge one or two 12V standby batteries
- Reverse battery connection protection
- Multi-fused output models available
- Modular construction for ease of maintenance
- Electronic short circuit and overload protection
- Universal mains input voltage 90-264V ac
- Installer safe design with all high voltage electronics fully shrouded
- Green Mains present LED
- Yellow Fault LED
- Also available in boxed format

## SPECIFICATION

### Input Specification

Voltage Rated: 100-240Vac (50-60Hz) Operating: 90-264Vac (50-60Hz)  
 Max Current See Model Specification Table  
 Mains Input Fuse See Model Specification Table  
 Max standby Power 1.5W (No load and no battery connected)

### Output Specification

	<i>12V Mode</i>	<i>24V Mode</i>
Voltage (under mains)	13.5 – 14.0V dc (13.8V nominal)	27.0 – 28.0V dc (27.6Vdc nominal)
Voltage (under battery)	10.5 – 12.4V dc	21.0 – 24.7V dc

Max load current	See Model Specification Table
Ripple	100 mV pk-pk max
Load output Fuse	See Model Specification Table below
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  
 Battery Charging Fuse protection 0.5A thermal fuse (self-resetting)

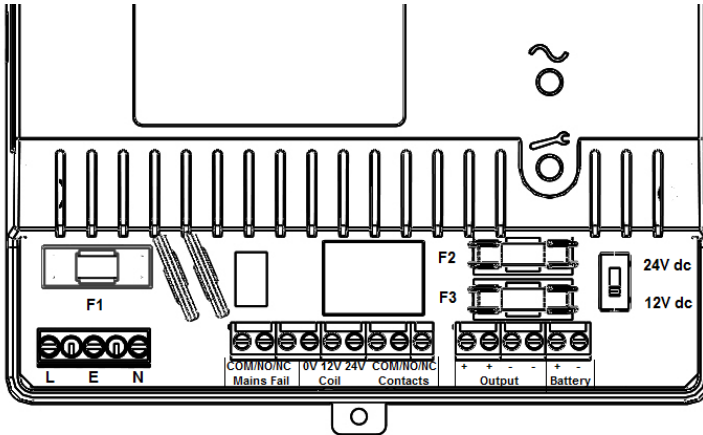
### Mechanical

Model	Module Dimensions (mm)	Weight (Kg)
G1224-42NU G1224-63NU G1224-84NU	157 (L) x 143 (W) x 55 (H)	650g

### Environmental

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

## CONNECTIONS



- |                             |   |
|-----------------------------|---|
| O/P +, +, -, -              | Dual (common) output connection to equipment to be powered<br><b>Note: Observe polarity</b>   |
| BATT +, -                   | Connection to standby battery. Use cables provided<br><b>Note: Observe polarity</b>   |
| Mains Fail COM, N/O, N/C    | Mains fail relay contacts. COM connects to N/O when mains on, COM connects to N/C when mains off. Contact rating is 30V, 0.5A                             |
| 0V, 12V, 24V, COM, N/O, N/C | Ancillary relay. Relay available for installer use. For 12V, coil fed through 0V and 12V. For 24V, coil fed through 0V and 24V. Contact rating is 30V, 5A |

## INSTALLATION INSTRUCTIONS

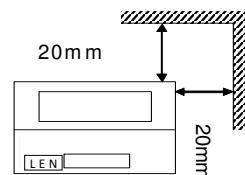
This unit is only suitable for installation as permanently connected equipment. This PSU is *NOT SUITABLE* for external installation. This unit must be fed from a mains power source having a separate (approved) disconnect device and fitted with a fuse or other over-current protection device rated at 3A maximum. Ensure that the disconnect device used has appropriate earth fault protection to the applicable standard. **EQUIPMENT MUST BE EARTHED.** Before installation, ensure that external disconnect device is *OFF*. The PSU should be installed according to all relevant safety regulations applicable to the application.

### Module Enclosure & Mounting

This power supply module has high voltage present and is for use by Service Personnel only. This power supply module **MUST** be securely mounted within a robust enclosure having suitable means to prevent unintentional access to the module. Suitable notices must be affixed to the outside of the enclosure to warn of high voltages present internally.

### Mounting

- 1) Mount securely in correct orientation allowing minimum clearance of 20mm all round – see diagram below.
- 2) The module can be mounted by using appropriate screw fixings on the three available mounting points.



### Mains Power Up

- 1) Attach correctly rated mains cable (minimum 0.5mm<sup>2</sup> [3A], 300/500Vac). Fasten with cable ties.
- 2) Select required output voltage using PCB switch:  
13.8V dc (12V battery) or 27.6V dc (2 x 12V batteries)

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

- 3) Apply mains power. Check for 13.8V or 27.6V dc on load outputs. Check Green Mains LED is ON.
- 4) Disconnect mains power.

**Load Output**

- 5) Attach correctly rated load cable and fasten using cable ties. Note polarity. Ensure rated load voltage is the same as supply is set to.
- 6) Apply mains power. Check Green Mains LED is ON and output is healthy before connecting load.
- 7) Connect and verify load is operating correctly.
- 8) Disconnect mains power.

**Standby Battery**

- 9) Ensure a single 12V battery is used for 12V operation, and two 12V batteries in series for 24V.
- 10) Attach supplied battery cables to terminal block and batteries.  
**NOTE:** If in 24V mode, ensure correct polarity of battery connections: **Red** lead to **+ve** of **battery 1**, **Black** lead to **-ve** of **battery 2**. Connect **-ve** of **battery 1** to **+ve** of **battery 2** using short link lead
- 11) Position batteries to avoid lid fixing screw.
- 12) Apply mains power. Check Green Mains LED is ON.
- 13) Check there is no fault indication on Yellow Fault LED.
- 14) 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
- 15) Reconnect mains power. Check Green Mains LED is ON and Mains Fail relay showing healthy.
- 16) Remove Output fuse (F3) and check Yellow Fault LED is ON.
- 17) Replace Output fuse, and remove PSU protection fuse (F2). Check Yellow Fault LED is ON.
- 18) Replace PSU protection fuse (F2). Check Yellow Fault LED is OFF.
- 19) Test operation of Ancillary relay as required.

**MODEL SPECIFICATION TABLE**

	<b>G1224-42N</b>	<b>G1224-63N</b>	<b>G1224-84N</b>
<b>Output Current (13.8V dc)</b>	4A	6A	8A
<b>Output Current (27.6V dc)</b>	2A	3A	4A
<b>Battery Charge Current</b>	0.5A	0.5A	0.5A
<b>Mains LED (Green)</b>	√	√	√
<b>Fault LED (Yellow)</b>	√	√	√
<b>Max Mains Input Current (at 90V ac)</b>	1.5A	2.0A	2.0A
<b>Mains Input Fuse (20mm HRC)</b>	T2.0A	T3.15A	T3.15A
<b>F3 - Output Fuse (20mm)</b>	F4.0A	F6.3A	F8.0A
<b>F2 - PSU Protection Fuse (20mm)</b>	F2.0A	F3.15A	F4.0A
<b>Battery Fuse</b>	PTC (self-resetting) fuse – Internal to unit		

**OPERATING INSTRUCTIONS**

This unit is intended for use by Service Personnel only - There are NO USER SERVICEABLE parts inside. The Green Mains LED will be illuminated whilst the mains supply is present. In the event of a fault condition, the Yellow Fault LED will be illuminated.

**MAINTENANCE**

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.**

If the output of the PSU fails the cause of the failure should be investigated e.g. short circuit load. The fault should be rectified before restoring power to the PSU. The Output (F3) or PSU Protection (F2) fuses may need to be replaced. Ensure the correct fuse rating and type is used.

**LOCAL INDICATORS**

- |                    |   |
|--------------------|---|
| MAINS LED (Green)  | Mains present   |
| FAULT LED (Yellow) | Fault present: Output fuse fail or Supply fuse fail (requires load and battery to be connected); battery shorted, reversed, or low voltage. |

## 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.

**Caution: 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 wheeled bin symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg).

For more information see: [www.recyclethis.info](http://www.recyclethis.info)

### Explanation of symbols: (Not all may apply)



Fault Indication



Shock Risk - isolate before attempting access



Mains Present



Certification Level



Protective Earth



Do not dispose of in unsorted waste

Specifications subject to change without notice

*The packaging supplied with this product may be recycled.*

*Please dispose of packaging accordingly.*