

ELMDENE

Protecting People & Property

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27.6Vdc SWITCH MODE POWER SUPPLIES

WITH REMOTE FAULT SIGNALLING AND BATTERY MONITORING

Models:

G240xBM-y

Where 'x' is max load current and 'y' is Enclosure type

FEATURES

High efficiency cost effective power supply ideal for use in Fire, Access Control and General Security applications. Featuring a regulated 27.6Vdc output supplying continuous full rated current to load plus additional current for charging 2 x 12V standby batteries. 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 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, generates less heat and with a small physical size increases the room available for additional PCBs or cables. The modular construction simplifies maintenance.

- Continuous full rated current to load
- Additional current to charge 2 x 12V standby batteries
- Battery Deep Discharge Protection
- Universal mains input voltage 90-264Vac
- Volt free contact signalling mains failure
- Volt free contact signalling output and battery faults
- High efficiency electronics for reduced running costs and lower operating temperatures
- Installer safe design with all high voltage electronics fully shrouded
- Reverse battery connection protection
- Modular construction for ease of maintenance and installation
- G2403 & G2405 - Full electronic short circuit and overload protection on load output (under mains power only)
- G2401 & G2402 - Fuse protection
- Mains transient protection circuit
- Green Mains present LED
- Yellow Fault LED
- Orange Battery Charging LED (visible on PCB only)

SPECIFICATION

Input Specification

Voltage (rated) / (operating)
Max Current / Input Fuse
Max standby Power

100-240Vac / 90-264Vac (Both at 50 – 60Hz)
See Model Specification Table
0.8W (No load and no battery connected)

Output Specification

Voltage

Max load current / load fuse
Ripple
Overload

27.0 – 28.0Vdc (27.6Vdc nominal) on mains power
21.0 – 24.7Vdc on battery standby
See Model Specification Table
100 mV pk-pk max
Electronic shutdown until overload or short circuit removed (under mains power only) (G2403BM & G2405BM)
Fuse Protection (G2401BM & G2402BM)

Standby Battery

Battery Type	2 x 12V Valve Regulated Lead Acid
Battery Capacity	See below under enclosure size.
Battery Charging Fuse protection	See Model Specification Table
Battery Re-Charge Time	<24hrs (to 80% of 8Ah capacity)

Mechanical

Model	Enclosure Dimensions w x h x d [external] (mm)	Max Battery Capacity	Weight (kg) [excluding battery]	
G240xBM-C	330 x 275 x 80	2 x NP7 (7Ah)	G2401BM	3.16
			G2402BM	3.22
			G2403BM, G2405BM	3.30
G240xBM-R	390 x 410 x 80	2 x NP17 (17Ah)	G2401BM	6.03
			G2402BM	6.09
			G2403BM, G2405BM	6.17
G240xBM-H	420 x 420 x 180	2 x NP38 (38Ah)	G2403BM, G2405BM	8.53

Environmental

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

GEN Fault (general)	0.1 A @ 60 VDC N/O volt-free contact. Open when battery disconnected, output fuse fail, battery fuse fail, output short circuit or low output voltage.
EPS Fault (mains)	0.1 A @ 60 VDC N/O volt-free contact. Open when loss of mains for more than 8s.

CONNECTIONS

O/P +, -	Connection to equipment to be powered (Observe polarity)
BATT +, -	Connection to standby battery. Use cables provided (Observe polarity)
GEN Fault	Volt-free contacts for general faults
EPS Fault	Volt-free contacts for loss of mains indication

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.

Mounting

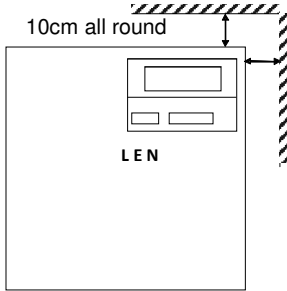
- 1) Mount securely in correct orientation allowing minimum clearance – see diagram.
- 2) Route mains and low voltage output cables via different knockouts and/or cable entry holes.
- 3) Use bushes and cable glands rated to UL94 HB minimum.

Mains Power Up

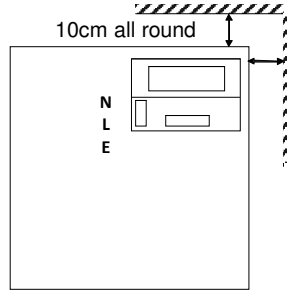
- 4) Attach correctly rated mains cable (minimum 0.5mm² [3A], 300/500Vac). Fasten with cable ties.
- 5) Apply mains power. Check for 27.6Vdc on load outputs. Check Green Mains LED is ON.
- 6) Disconnect mains power.

Load Output

- 7) Attach correctly rated load cable and fasten using cable ties. Note polarity.
- 8) Apply mains power. Check Green Mains LED is ON.
- 9) NOTE: Yellow Fault LED may flash to indicate no battery has been connected. This is normal.
- 10) Verify load is operating correctly.
- 11) Disconnect mains power.



G2401BM, G2402BM



G2403BM, G2405BM

Signalling Outputs

- 12) Connect EPS and GEN fault outputs to appropriate inputs of control equipment.

Standby Battery

- 13) Attach supplied battery cables to terminal block and batteries. NOTE: ensure correct polarity!
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
- 14) Apply mains power. Check Green Mains LED is ON and Orange Charging LED is ON
- 15) Check there is no fault indication on Yellow Fault LED.
- 16) Disconnect mains power. Check that the batteries continue to supply voltage and current to the load. Check Green Mains LED is OFF and the control panel displays a Loss of Mains (EPS) fault.
NOTE: Batteries must have sufficient charge to supply the load
- 17) Reconnect mains power. Check Green Mains LED is ON.
- 18) Remove Load fuse and check Yellow Fault LED is ON and control panel shows a General PSU fault.
- 19) Replace Load fuse. Check Yellow Fault LED is OFF and General PSU fault has cleared at the control panel

MODEL SPECIFICATION TABLE

	G2401BM	G2402BM	G2403BM	G2405BM
Output Current	1A	2A	3A	5A
Max Mains Input Current (at 90Vac)	1.0A	1.3A	1.4A	2.0A
Mains Input Fuse (20mm HRC)	T2.0A	T2.0A	T3.15A	T3.15A
Output Fuse (20mm)	F1.0A	F2.0A	F3.15A	F5.0A
Battery Fuse (20mm)	F1.0A	F2.0A	F3.15A	F5.0A

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.

The Orange Battery Charging LED will be illuminated when the battery is not fully charged and is charging normally. When the battery is fully charged, this LED will be extinguished.

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 fuses may need to be replaced. Ensure the correct fuse rating and type is used.

LOCAL INDICATORS

MAINS LED (GREEN)	FAULT LED (YELLOW)	CHARGE LED (ORANGE)	STATUS
ON	OFF	OFF	NORMAL - battery fully charged
ON	OFF	ON	NORMAL - battery charging
ON	1s ON, 1s OFF	ON or OFF	FAULT - see Signalling Outputs
OFF	0.1s ON, 3s OFF	OFF	FAULT - Mains Loss PSU operating on battery standby
OFF	OFF	OFF	FAULT - No Output Mains and Battery loss

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

Explanation of symbols: (Not all may apply)



Fault Indication



Shock Risk - isolate before attempting access



Certification Level



Mains Present



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.*