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27.6VDC SWITCH MODE POWER SUPPLY MODULES WITH BATTERY MONITORING

Models:
G240xBMU
Where 'x' is max load current: 1A, 2A, 3A or 5A

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 and up to an additional 0.5A 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 while generating less heat. The modular construction simplifies maintenance.

- Universal mains input voltage 90-264Vac
- Additional 0.5A to charge 2 x 12V standby batteries
- High efficiency electronics for reduced running costs and lower operating temperatures
- Continuous full rated current to load
- Volt free contact signalling mains failure
- Volt free contact signalling battery and output faults
- Deep Discharge Protection
- Installer safe design with all high voltage electronics fully shrouded
- Reverse battery connection protection
- Full electronic short circuit and overload protection on load output
- Mains transient protection circuit
- Modular construction for ease of maintenance & installation
- Green Mains present LED
- Orange Battery Charging LED
- Yellow Fault LED

SPECIFICATION

Input Specification

Voltage (rated)	100-240Vac
Voltage (operating)	90-264Vac
Frequency	50-60Hz
Max Current	See Model Specification Table
Mains Input Fuse	See Model Specification Table
Max standby Power	0.8W (no load and no battery connected)

Output Specification

Voltage	27.0 – 28.0Vdc (27.6vdc nominal) on mains power 21.0 – 24.7Vdc on battery standby
Max load current	See Model Specification Table
Ripple	100 mV pk-pk max
Load output Fuse	See Model Specification Table below
Overload	Electronic shutdown until overload or short circuit removed (under mains power only)

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 under standby battery
OFF	OFF	OFF	FAULT - No Output, Mains and Battery Loss

Standby Batteries

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

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

Mechanical

Model	**G2401BMU / G2402BMU**	**G2403BMU / G2405BMU**
Module Dimensions w x h x d (mm / external)	152 x 106 x 52	157 x 143 x 55
Recommended Batteries	2 x 12V NP7 or NP17	
Weight (excluding batteries)	**G2401BMU / G2402BMU**	**G2403NU / G2405NU**
	280g	650g

Environmental

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

Connections

+O/P	+ve voltage O/P to load equipment
-O/P	-ve voltage O/P to load equipment
+BATT	Red lead to standby battery 1
-BATT	Black lead to standby battery 2
GEN FAULT	Volt-free contacts for general faults
EPS FAULT	Volt-free contacts for loss of mains indication

OPERATION

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 it will be extinguished.

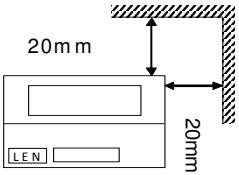
INSTALLATION AND SET-UP

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

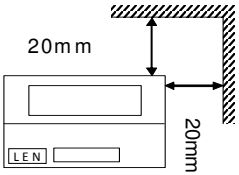
Module Enclosure & Mounting
This power supply module has high voltage present and is for use by Service Personnel only. This power supply module MUST be securely mounted within a robust enclosure having suitable means to prevent unintentional access to the module. Suitable notices must be affixed to 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 diagrams below.

2) The G2401BMU and G2402BMU modules have the option of either being DIN rail mounted (using the integrated DIN rail mount) or by using appropriate fixings using the four available mounting lugs. The G2403BMU and G2405BMU modules are fixed using the three available mounting points.



G2401BMU &G2402BMU



G2403BMU & G2405BMU

INSTALLATION AND SET-UP CONTINUED

Mains Power Up

3) Attach correctly rated mains cable (minimum 0.5mm^2 [3A], 300/500Vac) and secure in enclosure using cable ties.
4) Apply mains power. Check for 27.6Vdc on load outputs. Check Green Mains LED is on.
5) Disconnect mains power.

Load Output

6) Attach correctly rated load cable and secure in enclosure using cable ties. Note polarity.
7) Apply mains power. Check green Mains LED is on.
8) **NOTE:** Yellow Fault LED may flash to indicate no battery has been connected; this is normal.
9) Verify load is operating correctly.
10) Disconnect mains power.

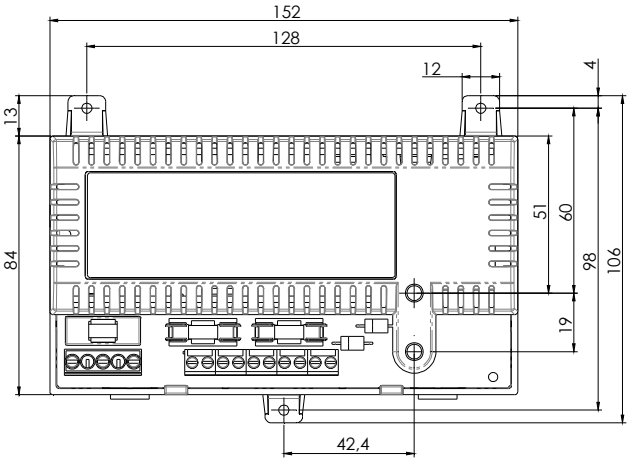
Signalling Outputs

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

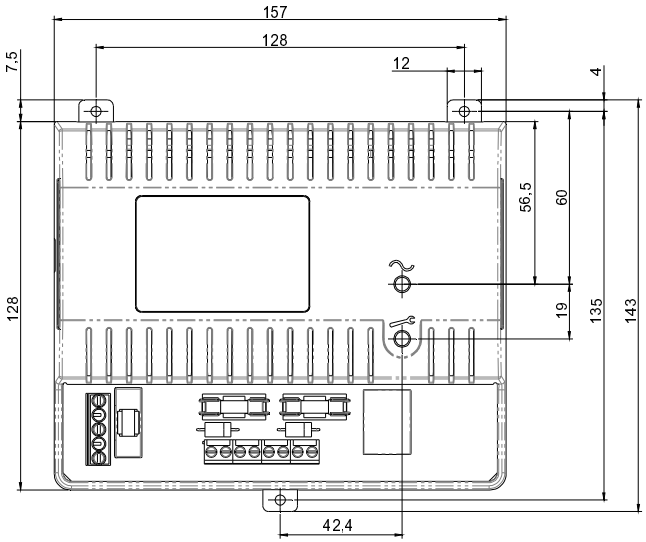
Standby Battery

12) Connect battery to terminal block using minimum 32/0.2 (1.0mm^2 CSA) stranded wire.
    NOTE: ensure correct polarity of battery connections. Maximum recommended total battery lead length = 500mm
13) Apply mains power. Check Green Mains LED is ON. Check Orange Charging LED is ON.
14) Check there is no fault indication on Yellow LED.
15) 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
16) Reconnect mains power. Green LED should be on.
17) Remove Load fuse. Check Yellow Fault LED is ON and control panel shows General PSU fault.
18) Replace Load fuse. Check Yellow Fault LED is OFF and General PSU fault has cleared at control panel.

Module Dimensions



G2401BMU & G2402BMU



G2403BMU & G2405BMU

Fixing Holes	Ø3.3mm
Recommended fixing screw	M3

Model Specification Table	*G2401BMU*	*G2402BMU*	*G2403BMU*	*G2405BMU*
Output Current	1A	2A	3A	5A
Max Mains Input Current (at 90Vac)	1.0A	1.3A	1.4A	2.0A
F1 - Mains Input Fuse (20mm HRC)	T2.0A	T2.0A	T3.15A	T3.15A
F2 - Output Fuse (20mm)	F1.0A	F2.0A	F3.15A	F5.0A
F3 - Battery Fuse (20mm)	F1.0A	F2.0A	F3.15A	F5.0A

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.

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COMPLIANCE

This product meets the essential requirements of the following EU Directives:

Low Voltage:	2014/35/EU
EMC:	2014/30/EU
RoHS2:	2011/65/EU
WEEE:	2012/19/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, the standby battery 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.

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

Caution: *Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the battery manufacturer's instructions and all local and national regulations.*

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.