



GfG Instrumentation

Worldwide Manufacturer of Gas Detection Solutions

Battery Back-Up

for fixed gas monitoring systems

Operation Manual

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For your Safety

As with any piece of complex equipment, the GfG battery backup system will do the job it is designed to do only if it is used and serviced in accordance with the manufacturer's instructions. Please protect yourself and your employees by following the instructions in this manual. All individuals who have or will have the responsibility for using and servicing this product must carefully read this manual. The warranties made by GfG with respect to the product are voided if functions or parameters are changed without the permission of GfG. They are also voided if the product is not used and serviced in accordance with the instructions in this manual. Failures or false alarms caused by interfering gases or electrical signals are not part of the warranty obligation. The above does not alter any statements by GfG regarding warranties, conditions of sale and/or delivery.

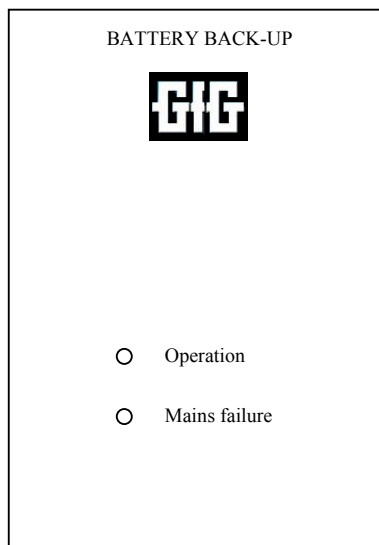
Introduction

It is essential that a gas warning system works reliably, even in the case of mains failure. The GfG battery back-up bridges the time of mains failure and supplies power for the entire fixed monitoring system. The GfG battery back-up provides several important advantages:

- Long operational time
- Deep discharge protection
- Maintenance-free batteries
- Automatic, uninterrupted changeover in case of mains failure
- Easy installation – even at a later stage

Operation

During normal operation the gas warning system is powered by mains voltage (110/230V AC). The GfG battery back-up is always on stand-by and takes over automatically in case of mains failure. This operation does not affect the monitoring process. During the mains failure, the GfG battery back-up powers all connected control modules and transmitters (except external devices, i.e. buzzers, valves, etc.) As soon as the mains supply returns, the GfG battery back-up turns off automatically. The batteries are recharged and will be ready for the next utilization.



The green LED "Operation" indicates the normal working status of the gas monitoring system:

- The gas warning system (controllers GMA 100 / GMA 300 and the connected transmitters) are powered by mains supply.
- The GfG battery back up is not used but on stand-by and ready for operations.

The yellow LED "Mains Failure" indicated the operation of the battery back-up system:

- The power supply by mains voltage has been interrupted.
- The gas warning system (controllers GMA 100 / GMA 300 and the connected transmitters) are powered by the GfG battery back-up
- All functions of the gas monitoring system are operational.

Operational time

The operational time of the GfG battery back-up bridging a mains failure depends on:

- the number of connected transmitters,
- the type of transmitters connected.

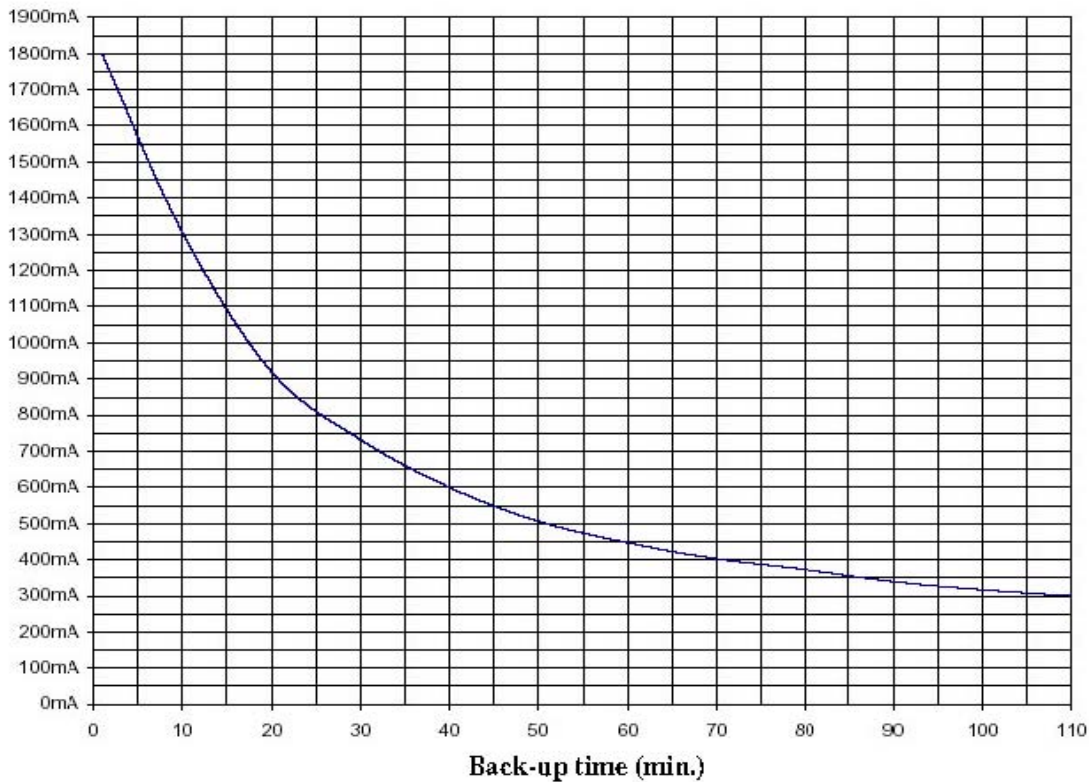
Table 1 below allows an easy calculation of the operational time. Please consider the calculated time as an approximate value which might vary due to different batteries.

Consumer	Current consumption
GMA 100	150 mA
GMA 300	150 mA
MWG CC 0238 / 0238 EX	120 mA
MWG CC 24 EX	120 mA
MWG EC 24	30 mA
MWG EC 25	30 mA
MWG CS 21	90 mA
MWG CS 24 EX	120 mA
MWG IR 24	200 mA
MWG ZD 21	200 mA

Table 1

Graph 1 shows the back-up time depending on the total current consumption:

GfG NAV Battery Back-Up



Graph 1

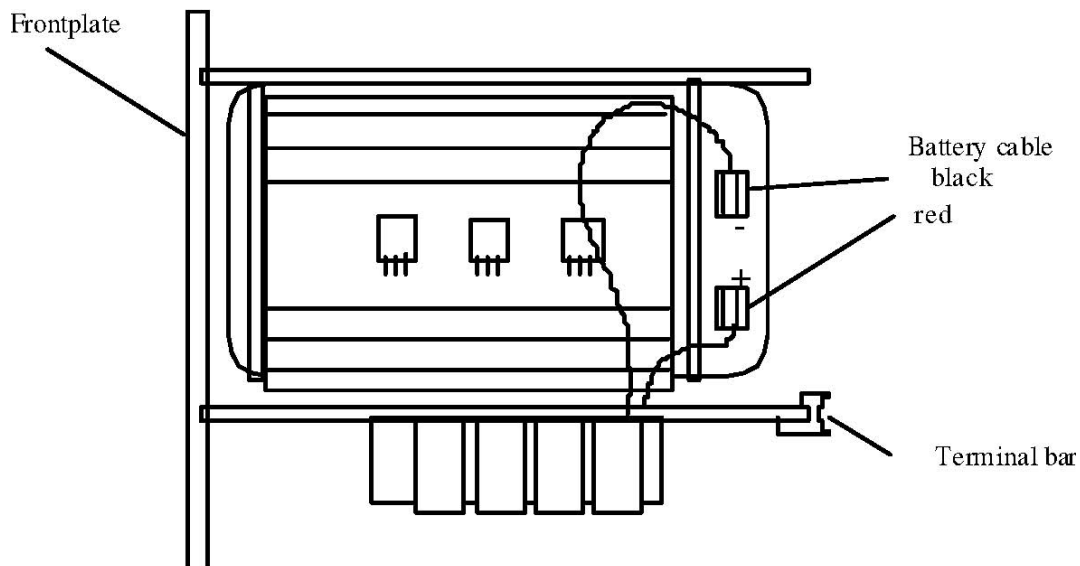
Installation

The battery back-up requires the available space of three plug-in control modules (3HU/21DU). It is simply slid into the rack:

1. Ensure the battery cables are connected to the battery contacts:
 - red cable “+”
 - black cable “-“
2. The GfG battery back-up is easily slid into the 19” rack and locked by screws. Please make sure the boards fit into the four guiding rails.
3. The back-up unit is activated when connection to the mains power even for a short time. This switches a relay which protects the back-up unit from being discharged during storage. Then the green LED “Operation” lights up.

Note: The battery back-up is designed for powering the gas monitoring system including the connected transmitters. External devices like alarm annunciator or recorders have to be powered separately.

GfG – Battery back-up (top view)



Storage and Transport

For long term storage and transport of the GfG battery back-up, the red cable should be disconnected from its contact. This switches the relay which protects the unit from being discharged. The yellow LED “Mains Failure” will no longer be lit.

Trouble Shooting

Failure	Cause	Solution
Both LEDs do not light up	Battery is discharged and mains voltage is not available	Provide power supply via mains voltage
	Battery cable is not connected	Check cable connection: black battery cable “-” red battery cable “+”
	Back-up unit is not correctly positioned/connected in the rack	Check slide-in position. The unit must fit into all four guiding rails

Technical Data

GfG battery back-up

Type: Slide-in module for 19” racks
 Dimensions: 3 HU/ 21 DE. PCB, 160 x 100 mm
 Operating voltage: 230 V AC 50 Hz
 Power consumption: max. 14 W
 Power Output: max. 80 W
 Connections: Terminal bar on BUS board
 Suitable for gas monitoring systems that use
 GMA 100 and GMA 300 controllers
 Back-up voltage: 24 V DC

Battery

Type: Maintenance-free lead accumulator 12V / 3 Ah, deep discharge protection
 Charging time: < 14 hours



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