Merlin GM100

CO/NO2 Gas Detector

Monitor: Carbon Monoxide / Nitrogen dioxide

INSTALLATION & OPERATION

Please read these instructions carefully before use and retain for future reference.

These instructions can also be downloaded in electronic form on the product website.

snsnorthern.com

CONTENTS

IMPORTANT INFORMATION

⚠

Take extra care where this symbol is used to understand the nature of any potential hazards and how to avoid them.

⚠ **Before any installation, use or maintenance, read this manual carefully.**

⚠ **This product is for Dry Environment Use only.**

⚠ **Avoid prolonged use in dusty environments.**

⚠ **The information contained within this manual should be referred to for typical installation and operation only.**

⚠ **For site specific requirements that may deviate from the information in this manual – contact your supplier.**

⚠ **If the equipment is used in a manner not specified by the manufacturer, the safety and protection provided by the equipment may be impaired.**

⚠ **Installation must be in accordance with recognised standards in the country concerned.**

⚠ **The PCB contains circuitry that can be damaged by static discharge.**

⚠ **When metal conduit is used provision shall be provided by the installer for bonding in accordance with the NFPA70.**

⚠ **Cables must be protected against mechanical damage.**

⚠ **A switch or circuit breaker must be fitted, it must be accessible and marked as the disconnecting device.**

Manufacturer's Warranty

The manufacturer warrants to the original consumer purchaser, that this product will be free of defects in material and workmanship for a period of 3 Years from the date of purchase.

The manufacturer's liability hereunder is limited to replacement of the product with repaired product at the discretion of the manufacturer. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material or workmanship. This warranty extends to the original consumer purchaser of the product only. Any implied warranties arising out of this sale, including but not limited to the implied warranties of description, merchantability and intended operational purpose, are limited in duration to the above warranty period. In no event shall the manufacturer be liable for loss of use of this product or for any indirect, special, incidental, or consequential damages, or costs, or expenses incurred by the consumer or any other user of this product, whether due to a breach of contract, negligence, strict liability in tort or otherwise. The manufacturer shall have no liability for any personal injury, property damage or any special, incidental, contingent, or consequential damage of any kind resulting from gas leakage, fire, or explosion. This warranty does not affect your statutory rights. During the above warranty period, your product will be replaced with a comparable product if the defective product is returned together with proof of purchase date. The replacement product will be in warranty for the remainder of the original warranty period or for six months – whichever is the greatest.

Disposing of Electrical & Electronic Equipment (WEEE)

When this product has reached the end of its life it must be treated as Waste Electrical & Electronics Equipment (WEEE). Any WEEE marked products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used. Please contact your supplier or local authority for details of recycling schemes in your area.

INSTALLATION

General Information:

The **GM100** has been designed for being directly connected to a BMS/BAS system. The equipment is to be installed in non-classified, non-hazardous, permanent locations and is intended to continuously monitor the ambient air for dangerous gas concentrations.

The monitor features two configurable alarm levels, audible alarm and current and voltage outputs with LCD & LED status indicating power, alarm status and fault/warning conditions. Plug-and-play modular assembly allows for replaceable smart gas sensor modules. On delivery, the equipment is calibrated at ambient, normal conditions and configured for the specified gas, measuring range and alarms. For any further information and technical support, contact your supplier.

Key Features

- Dual channel operation.
- Factory calibrated field replaceable sensor modules.
- Two analog output signals in the range of 2-10V or 4-20mA current loop principle.
- One dry-contact 1A max relay signal.
- Digital RS485 communication – Modbus RTU or BACnet MS/TP – field selectable.
- Strong anti-interference circuit boards and RoHS compliant.
- Standard corrosion resistant enclosure

The equipment can be used indoors or in covered outdoor locations. If used outdoors, choose a sheltered location which is protected from direct sunlight, rain, and other extreme conditions.

User Interface

- LCD Backlit Display
- RGB LED indication for fault, warning, and alarm level status.
- Silence alarm.

Applications

Private homes • Apartment buildings • Condominium buildings • Parking garages • Schools • Hospitals • Commercial buildings • Shopping malls • Service centers • Retail • Offices • Hotels • Warehouses • Data centers • Food processing plants • Textile plants • Vehicle and machinery facilities • Warehouses • Vehicle Emissions (CO, NO2) • Enclosed parking garages • Loading docks • Automotive maintenance facilities • Truck maintenance facilities • Fire stations • Ambulance bays • Boiler rooms • Warehouses • Food processing plants • Cold storage • Ice rinks • Landfills • Water and wastewater treatment plants • Recycle centers • Natural gas monitoring • Commercial kitchens • Laboratories • Warehouses • Lead acid battery charging stations • Swimming pool mechanical rooms • Medical labs • Hospitals • Welding facilities • Mechanical rooms • Compressor rooms

Appearance
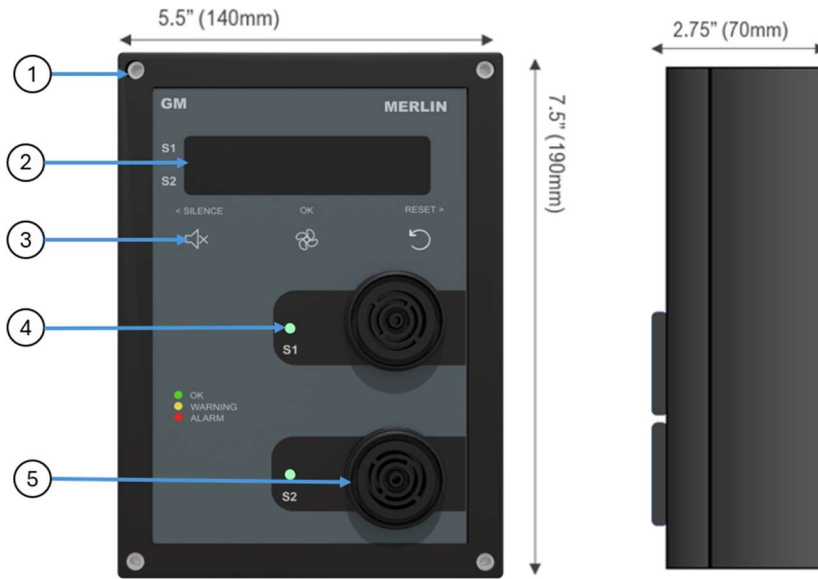
1	M4x15mm bolts	Secures front fascia decal.
2	LCD Display	Gas Type / Concentration / Unit / ID
3	User Buttons	Silence audible buzzer / Acknowledge alarm / Fan On / Navigate menu
4	LED Status Indication	Power-OK / Fault-Warning / Alarm / Calibration
5	Gas Sensor Opening	Allows diffusion monitoring of air and gas

Positioning

⚠ **Position at a location with minimum noise, vibration, and environmental variation.**

There are no specific standards governing gas detector locations (unlike fire detection systems); there are, however, general guidance documents. The most relevant being *IEC/UL/ANSI/EN 60079-29-2.* Much of what it covers is also relevant to toxic gas & oxygen monitoring equipment.

Recommended heights may vary based on air flow and other environmental conditions in addition to the proposed application, location, and target gas. The composition of the target gas and its density relative to air are used as the basis for the recommended height of sensors. Generally, the installation height of a sensor for a heavy gas (e.g., LPG) would be close to the lowest point in the area, and for a light gas (such as methane or hydrogen) would be close to the highest point in the area. These typical heights may vary based on application.

Target Gas	Typical Install Height
Carbon Monoxide (CO)	Breathing Zone – 4 - 6ft from ground level.
Nitrogen Dioxide (NO$_2$)	*Breathing Zone – 4 - 6ft from ground level or Low Level - 1ft from lowest point from ground level.

Depends on Application

Observe the following also.

- Ease of access to the equipment for functional testing and servicing.
- How gas may behave due to natural or forced air currents.
- Any regulation/standard/code that locations are bound by.

Mounting Instructions

1. Carefully remove the front cover from the unit by using an M3 hex key.
2. Using the rear base - mark mounting holes to the wall or align with a vertical 2-gang/pattress box.
3. Fixing straight to wall – drill 0.2" (5mm) hole, insert plugs and use the four screws (No.4 Pozi) provided.
4. There are 2* knockouts for cable entry on the rear of the base
5. For 12" conduit mounting use the 2* knockouts on the top and bottom
6. Two indents can be drilled out as necessary.
7. After executing the mounting/connections – secure the front cover with all M4 bolts and insert the security caps provided.
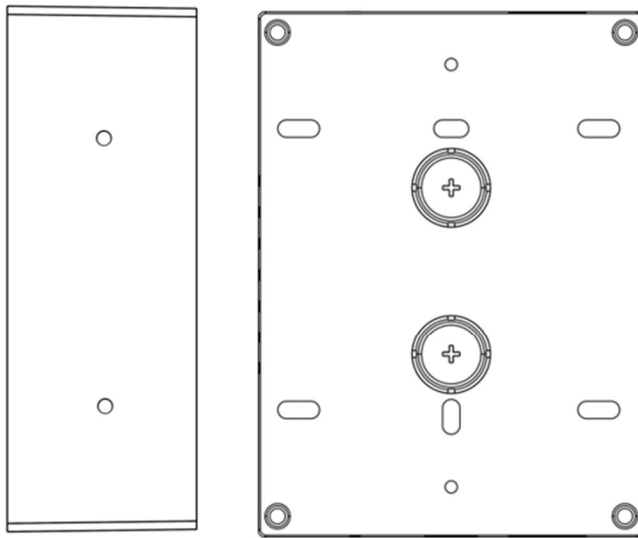
Knockouts 0.885" / 22.5mm
2* Rear for cable entry
2 * top and bottom drill indents for drilling bespoke hole sizes

Use Wall Plugs & Screws (x4) Provided.
Suitable for Hollow & Solid Walls

Fix to 2-gang/double pattress box

PCB Overview

RS485 CONFIGURATION
Protocol / Network Address / Baud Rate

S1 GAS SENSOR
Replaceable module

S2 GAS SENSOR
Replaceable module

SENS1

SENS2

LOW VOLTAGE POWER IN
12-32V AC/DC (Nominal 24V)

RS-485 DIGITAL OUTPUT
Modbus RTU or BACnet MS/TP

RELAYOUTPUT
1A, 60V

ANALOG OUTPUT
0-10v or 4-20mA selectable

ANALOG OUTPUT DIPSWITCH
Current or Voltage

RS-485 Wiring

NOTE: WARRANTY MAY BE VOID IF DAMAGE OCCURS TO CIRCUIT BOARD COMPONENTS FROM THE USE OF SOLID CORE WIRE ATTACHED DIRECTLY TO WIRING TERMINALS.

All wiring should be run within properly grounded (earth or safety) conduit. The cable shield should be connected to earth ground at the controller/power supply that is providing power to the equipment. Low voltage wiring must not be within the same conduit as any line/mains voltage wiring.

Cable specifications ultimately determine the distance the sensors can be mounted away from a controller or power supply. Consider voltage drops due to cable resistance and strip the cables as short as possible ensuring bare wires, e.g., wire shields, do not contact with the circuit board (risk of short-circuit).

Digital RS-485 Configuration Switches

Board Dipswitch Settings

Switch	Function	Label	Parameter	Default
1	RS485 Selection	COMMS	OFF: Modbus RTU / ON: BACnet MS/TP	OFF
2~8	Slave ID	MAC/ID ADDRESS	Achieved by adding binary switch values together. Example #4 ON + #16 ON = ID: 20. (Max. 127)	OFF
9~10	Baud Rate		9600 / 19200 / 38400 / 57600	OFF

For the Modbus RTU or BACnet MS/TP network, use a 3-core, 2 twisted pair + ground, shielded cable with 120 Ω characteristic impedance. Any cable with similar characteristics can be used to connect all the devices together.

Important: Daisy chain wires running to additional monitors – 127 sensors max per cable run. First and last device in bus requires a termination resistor. Use RS485 EOL switch to terminate by turning ON.
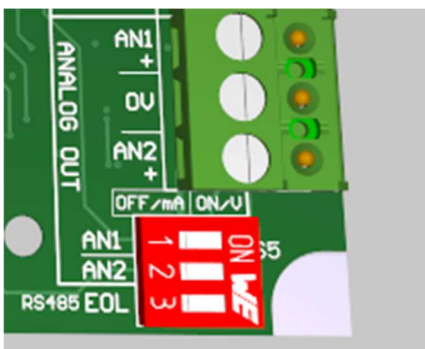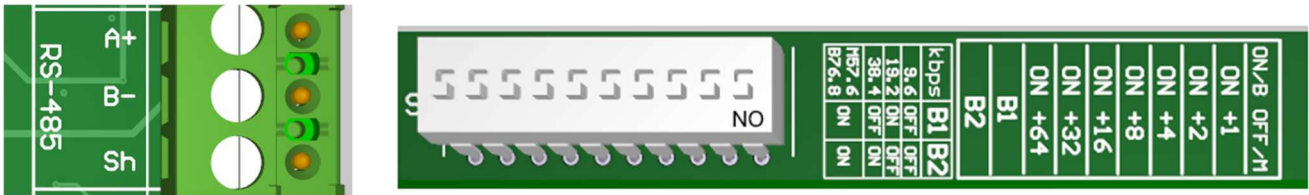
Default Communication Setting

Baud Rate	9600
Parity	None
Data Bits	8
Stop Bits	1

Adjustable RS-485 settings

Slave ID	1 - 127
Baud Rate	9600 / 19200 / 38400 / 57600 - Modbus or 76800 - BACnet
Parity	None / Even / Odd
Max Info Frames (BACnet)	1-16

NOTE: TO ENSURE OPTIMAL PERFORMANCE OF THE NETWORK ENSURE THE FOLLOWING IS OBSERVED

- Ensure the equipment is configured in a single bus topology, connecting multiple buses in parallel or branching multiple units from the main bus, may introduce impedance mismatches, reflections and/or signal distortions.
- Ensure equipment at each end of a bus has the 120 Ω terminating resistor switch enabled.
- Ensure A+/B- signal polarity is maintained throughout the network.
- Connect shield wires to earth/ground of the central control panel if no shield connection is present.
- Ensure cable shield integrity is maintained throughout the network.
- Do not use shield connection for signal ground. Use cable that provides dedicated ground conductor for signal ground. Connect signal ground to (0V/GND) terminal.

Analog Output Wiring

Two linear voltage or current output terminals are available and often used to regulate external fan speed controllers.

Turning ON the AN1 & AN2 dipswitch will change from 4-20mA to 0-10V.

The output is scaled to the Alarm H (high) setpoint, and the gas closest to the Alarm H will take priority and drive the speed (default).

Configure dipswitches to select m/A or V for each output (AN1 and AN2).

Output proportional to Alarm 2 concentration.	4-20mA	2-10V
0%	4mA	2V
50%	12mA	6V
100%	20mA	10V

OPERATION

Start Up:
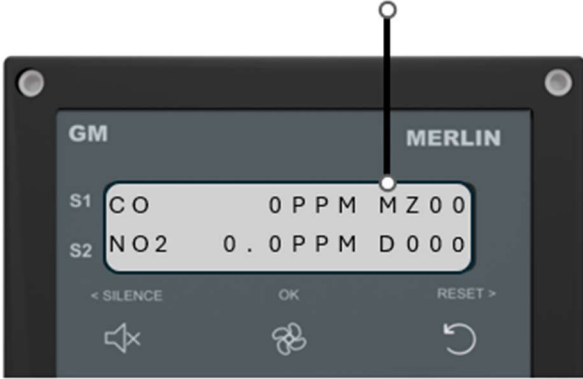
During initial powering, the instrument will go through a 60 sec start-up count-down sequence.

INITIALIZING 60

Once initialized the normal mode will be displayed as follows:
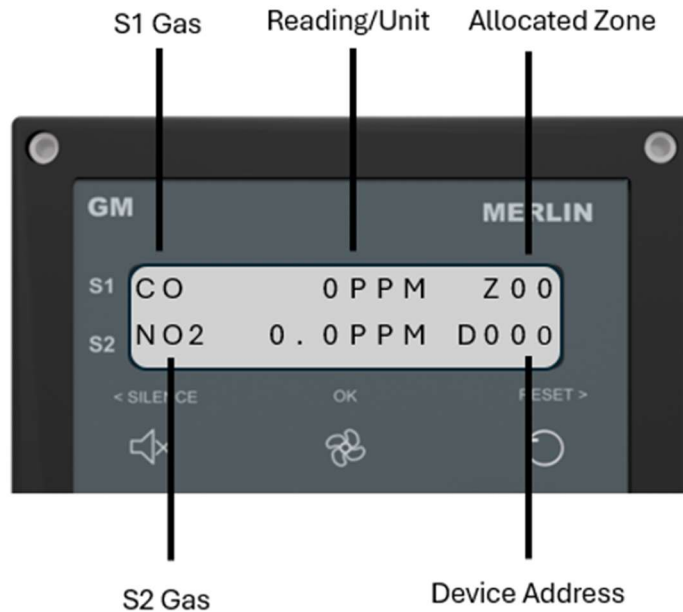
Button function in normal operation:

Button	Description
OK ⚙	Press for 5 sec to activate manual fan override, use the < > buttons to select the manual override time in min, this will output 10V on analog outputs AN1 and AN2 for the selected time and display a flashing M as shown.
SILENCE 🔇	Silence the audible alarm

Low Alarm: In low alarm the red LED will blink

High Alarm: In High alarm the red LED will be solid on and the display screen will turn Red.

LED Status Indication S1 & S2

Visual indication of the gas detector status is provided by a single RGB colour LED.
Detector condition and corresponding outputs are shown below (as **factory set condition**).

Condition	LED	Description	Buzzer	1A Relay
Warm-up		Green LED Blink	OFF	-
Normal		Green LED On	OFF	-
Alarm Low		Red LED Blink	BEEP	-
Alarm High		Red LED On	ON	ON
Warning		Green/Yellow LED Blink	BEEP	-
Fault		Yellow On	BEEP	-
Cal. Ready		Blue LED Blink	OFF	-
Cal. OK		Blue/Green Blink	BEEP	-
Cal. Fail		Blue/Yellow Blink	BEEP	-

Settings Menu

To enter the settings menu hold the **<SILENCE** & **RESET>** buttons for 5 sec.
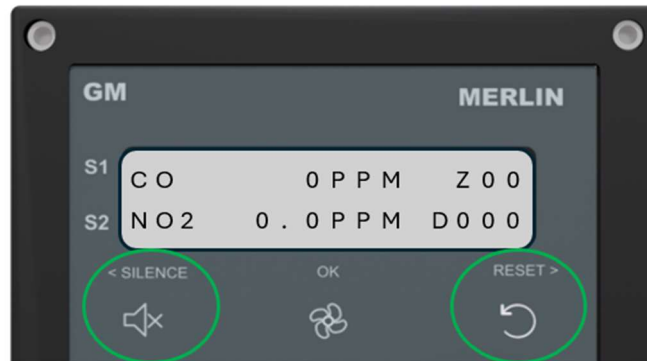
Now Use **<SILENCE OK RESET>** buttons to scroll through the numbers and **ENTER CODE 753**.
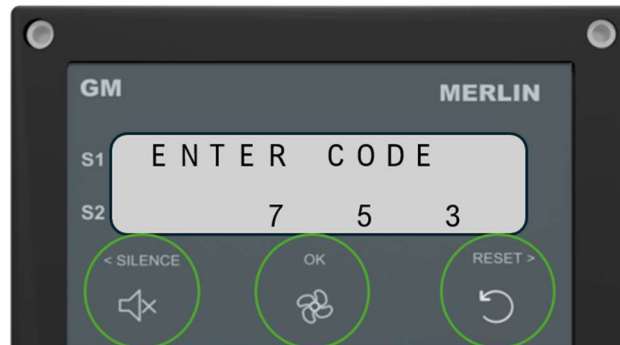
Hold the **OK** button for **3 sec** to accept the code and enter the menu mode.

Press **OK** again to enter the **MENU.** You can also use the **<** and **>** to scroll to **CALIBRATION** or **REPLACE** see the Calibration and Maintenance section for details.

From the menu use the <> and OK buttons to select and adjust the following settings.

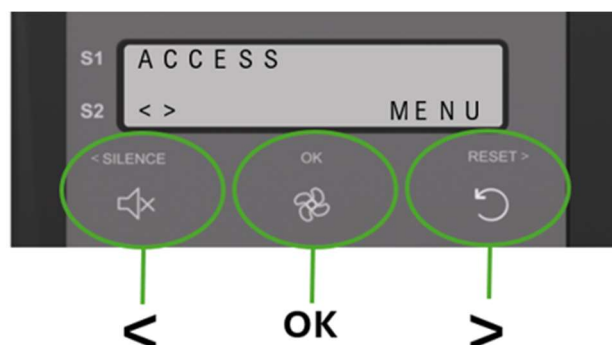| Menu	Display Message	Parameter	Default	Description
01	S1: CO ALARM L	25 PPM	25 PPM	S1: CO low alarm setpoint Measuring range 10-High alarm PPM
02	S1: CO ALARM H	100 PPM	100 PPM	S1: CO high alarm setpoint Measuring range low alarm ~ 250 PPM
03	S2: NO2 ALARM L	0.5 PPM	0.5 PPM	S2: NO2 low alarm setpoint 0.5-High alarm PPM
04	S2: NO2 ALARM H	2 PPM	2 PPM	S2: NO2 high alarm setpoint Low alarm ~10PPM
05	AL H DELAY	0-30 PPM	02 PPM	Set acknowledgement time sec for the high alarm to avoid false readings
06	ZONE NUMBER	0-10	00	Set Zone number (if required)
07	SIG RLY AL	L – H	H	Adjust the signal alarm relay to [L] or [H] alarm, it will be activated by both S1 or S2 alarms.
08	SIG RLY POL	NO-NC	NC	Set the relay pol - normally open (NO) or normally closed (NC)
09	TEMP UNIT	°C / °F	°F	Select °C / °F
10	TEMP ADJ	-9c / +9°	0°	Offset temperature value by maximum ± 9°
11	TEMP AL HIGH	ON/OFF	OFF	Turn ON/OFF the temperature high alarm
12	TEMP AL H SET	77-104° F (25-40°C)	104° F	Set the temperature high alarm setpoint 77-104° F (25-40°C) Enabled only if TEMP AL HIGH (Menu 11) is ON.
13	TEMP AL LOW	ON-OFF	OFF	Turn ON/OFF the temperature low alarm
14	TEMP AL LOW SET	32-59° F (0-15°C)	32° F	Set the temperature low alarm setpoint 32-59° F (0-15°C) Enabled only if TEMP AL LOW (Menu 13) is ON.
15	DEADBAND	ON-OFF	ON	Set ON/OFF ON: Gas readings <3ppm / 0.3ppm are displayed as 0ppm
16	BUZZER	ON-OFF	ON	Audible buzzer upon AL H condition.
17	SERVICE MSG	OFF or 6-12-18 Months	OFF	Calibration/Service Reminder.
00	SAVE/EXIT/R	BACK TO MENU EXIT W/O SAVE SAVE &EXIT RESET & EXIT		Return to the menu Exit without saving Save settings and exit Exit and reset to default settings

CALIBRATION & MAINTENANCE

System Bump Test: What is a Bump Test?

Gas response checks are often referred to as a 'bump test'. Bump tests are important to make sure a device can detect a release of gas as early as possible. The aim of the bump test is to make sure a detector is working at its optimum by briefly exposing the unit to a known concentration of the target gas that usually exceeds the highest alarm point. If the detector goes into alarm and all signals/outputs activate, then the system is working safely.

If the system fails to operate as intended in an alarm state, the gas detector must not be used until a full inspection and service has been conducted. NFPA requires all gas detectors to be tested annually and that the test results be recorded on site and available to inspectors.

Why is it important?

A detector may visually appear in good working order, but its sensitivity and accuracy can be inhibited by external factors. Dust, humidity, temperature fluctuations, cleaning products, contaminants, exposure to its target gas or sensor drift (ageing) can cause a decline in sensitivity, accuracy, and eventual failure.

How often?

Regular bump tests are important to make sure the detector can detect a release of gas as early as possible and usually takes seconds (gas type dependant i.e., CO sensors will take over a minute) and is often completed alongside a scheduled fire alarm test, however the frequency should be determined following an appropriate risk assessment by the end user.

We recommend testing detectors every 12-18 months along with the regular fire test procedures and coincide with the annual service message prompted on the detection system after each year of service/operation.

Bump Test Procedure

⚠ **Gas mixtures must be prepared using equipment traceable to N.P.L / ISO standards.**
⚠ **Take normal precautions when using cylinders, they should always be stored in the vertical position and secured to prevent them from falling over.**
⚠ **Ensure valve/regulators are screwed and secured tight before use and ensure valves are closed after use.**
⚠ **Ensure all test gas is within the expiration date.**

The bump test must be carried out following the specified conditions and using equipment as detailed below.

Target Gas	Formula	Concentration	Balance/Mix	Flow Rate	°F/°C	Application Time
Carbon Monoxide	CO	150 ppm	Nitrogen / Air	0.5L Per/Min	59-86°F 15-30°C	120s
Nitrogen Dioxide	NO2	5ppm				120s

Open the gas valve and apply gas for 120sec, during this time you should observe the gas level rising and stabilising.

Check the monitor goes into alarm and displays the applied gas correctly.

If the monitor is displaying an incorrect gas level follow the Calibration Procedure section.

Apply Gas to the inlet nipple of S1 & S2 using a hose
6mm (0.236") ID, 8mm (0.31") OD
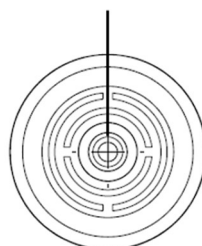
Additional Information: Sensor Principle - Electrochemical

Electrochemical sensors measure the partial pressure of gases under atmospheric conditions. The monitored ambient air diffuses through a membrane into the liquid electrolyte in the sensor. The electrolyte contains a measuring electrode, a counter-electrode, and a reference electrode. An electronic "potentiated" circuit ensures a constant electrical voltage between measuring electrode and reference electrode. Voltage, electrolyte, and electrode material are selected to suit the gas being monitored so that it is transformed electrochemically on the measuring electrode and a current flow through the sensor. This current is proportional to the gas concentration. At the same time, oxygen from the ambient air reacts at the counter electrode electrochemically. The current flowing through the sensor is amplified electronically, digitized, and corrected for several parameters (e.g., the ambient temperature).
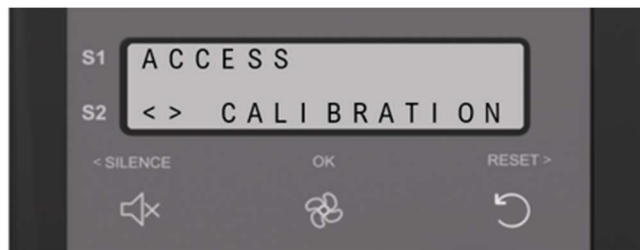
Calibration:

⚠ **Gas mixtures must be prepared using equipment traceable to N.P.L / ISO standards.**
⚠ **Take normal precautions when using cylinders, they should always be stored in the vertical position and secured to prevent them from falling over.**
⚠ **Ensure valve/regulators are screwed and secured tight before use and ensure valves are closed after use.**
⚠ **Ensure all test gas is within the expiration date.**

Calibration is recommended to be performed as per local code requirements, test must be carried out following the specified conditions and using equipment as detailed below.

| Target Gas	Formula	Concentration	Balance/Mix	Flow Rate	°F/°C	Application Time
Carbon Monoxide	CO	50~150ppm	Nitrogen / Air	0.5L Per/Min	59-86°F 15-30°C	120s
Nitrogen Dioxide	NO2	2~5ppm				120s

Follow the procedure detailed in the Setting Menu section to enter the code 753. Once the code is accepted use the < and > buttons to access Calibration and press Ok.
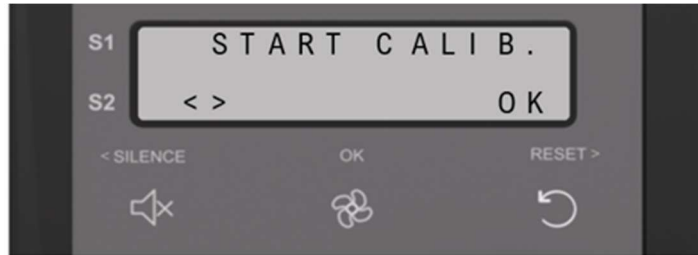

Use the < and > buttons to select the module to be calibrated S1 or S2 and press OK.

Press OK to confirm the gas type.
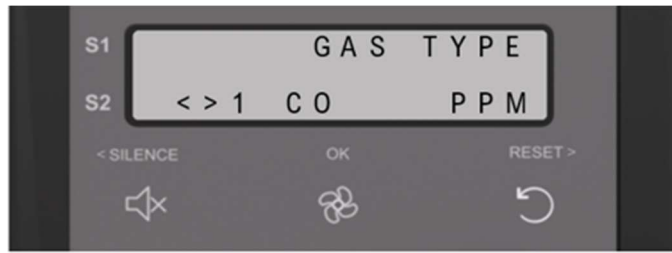
Press Ok to start the calibration.

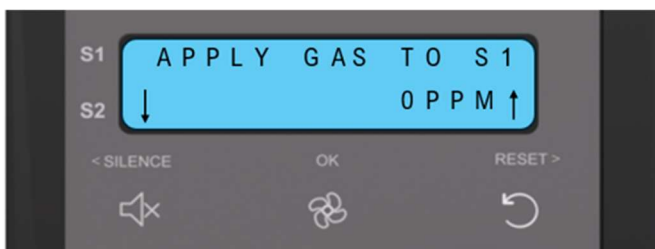When the calibration has started the screen will change to blue.

Important: Do not apply gas during the CO ZERO, wait until a beep is heard.

When instructed apply an appropriate test gas within the range specified in the table at the start of the calibration procedure, applying the gas to inlet as detailed below.

Apply Gas to the inlet nipple of S1 & S2 using a hose 6mm (0.236") ID, 8mm (0.31") OD
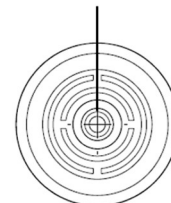
After approximately 120 sec check the gas value is stable and no longer rising, now use the ↑↓ to adjust the value to exactly match the test gas bottle value, the example below is a reading using a 120ppm calibration gas.

Press OK to complete the calibration and the display will turn green with OK message as shown below.

If the calibration fails the display will turn yellow and display NOK, the calibration should be re-peated and checking parameters as specified at the start of the procedure.

Successful Calibration **OK**
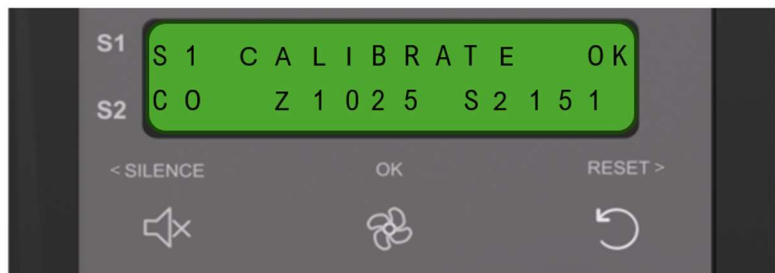
Failed Calibration **NOK**

Now press OK and then **<** to press **OK** to select **BACK**, wait 10 sec for a time out to return to normal operation or Press OK to return to the Menu.

If the sensor is faulty and cannot be calibrated, the sensor module can be replaced following the procedure in the Maintenance section

As a final calibration check a bump test must be carried out as detailed in the bump test section.

REPLACE / DISABLE S1 or S2

If only a single gas type is required S1 or S2 can be disabled.

Follow the procedure in the Setting Menu section to enter the code 753. Once the code is accepted use the < and > buttons to access **REPLACE** and press Ok.
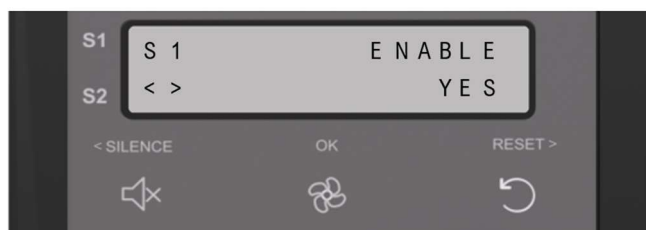

Select the module S1 or S2 using the < > buttons, press OK to confirm.
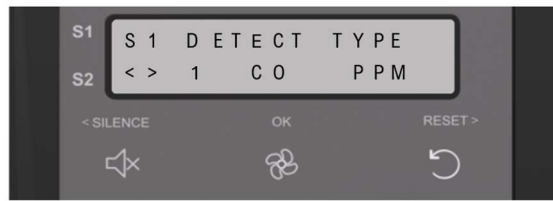

Select Enable or Disable using the < > buttons, press OK to confirm

Select Yes or No using the < > buttons, press OK to confirm.

Select the detected gas type CO or NO2, press OK to confirm.

Now press Ok and then < press OK to select BACK and wait 10 sec for timeout or press Ok to return to normal operation.

Commissioning & Maintenance

We recommend all gas detection equipment be commissioned by competent/trained engineers.

Gas detectors are factory calibrated when shipped under ambient conditions, however, we recommend the detectors response and alarm signals are tested and validated once installed and subsequently every 6-18 months thereafter to retain optimum safety.

During Commissioning
- ✓ Check installation, mounting, cable entry, position.
- ✓ Check the power supply voltage and indication.
- ✓ Check/perform calibration.
- ✓ Check indications for proper operation.
- ✓ Check buzzer and relay operation.
- ✓ Check signal transmission to the BMS/central controller, where appropriate.

Regular maintenance and calibration of the sensors by trained technicians is strongly recommended. Inspections and services should be documented and executed at regular intervals with records in place.

The frequency must be determined and observed by the person responsible for the gas warning system according to all regulatory, code and legal requirements. The inspection interval is normally 6 to 18 months to retain optimum safety. The date for the next maintenance should be affixed to the equipment sensor.

Our equipment is designed to operate in a wide range of harsh environments and conditions. However, it is important that exposure to high concentrations of solvent vapours is avoided, both during storage and operation.

Regular maintenance and calibration of the sensors by trained technicians is strongly recommended. Inspections and services should be documented and executed at regular intervals with records in place.

The frequency must be determined and observed by the person responsible for the gas warning system according to all regulatory, code and legal requirements. The inspection interval is normally 6 to 18 months and a service reminder can be set following the procedure in the Menu section.

The date for the next maintenance should be affixed to the equipment sensor and

Interval	Description
During commissioning	Check installation, orientation, mounting, cable entry & wiring. Check/perform calibration. Check indications for proper operation. Check buzzer and relay operation. Check signal transmission to the BMS/central controller, where appropriate.
**Every 6-18 months	Inspection by trained service personnel. Calibrate, bump, or change the sensor with a factory calibrated one.
As required	Replace sensor modules.

** This can vary by sensor type, application, environment and national or local regulation/code.

Sensor Module Replacement

Replacement sensor modules can be ordered from S&S Northern using the following part numbers.

Sensor Module Part Number	Gas Type
GDM-C0	CO: Carbon Monoxide
GDM-NO2	NO2: Carbon Dioxide

Modules should always be changed by a trained technician as follows:

With the monitor powered off, unplug the module by hand.

Plug the new module ensuring the white arrows on the module align with the white arrows on the main PCB board.

Take special care to ensure the 2 * 10 pin header pins are correctly aligned before plugging.

S1 GAS SENSOR
Replaceable module

S2 GAS SENSOR
Replaceable module
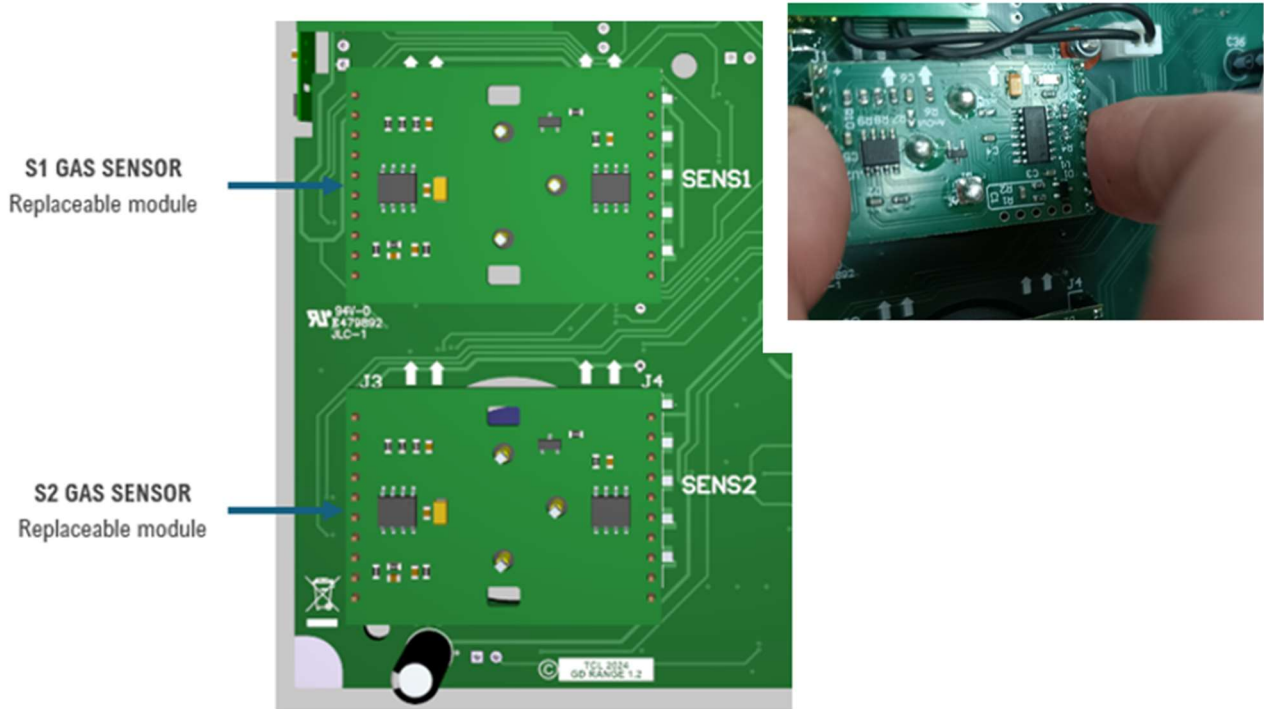
Splash Guard Installation

For any application requiring protection from water, a splash guard accessory pack can be ordered including 2* splash guard covers and a rear sealing gasket.

Splash guard kit: part number **MG-SPL**

Clip the 2 * splash guards over the gas vents.


Gas Vent   Splash Guard

It is recommended to carry out regular maintenance, the side gas vent holes should be brush-cleaned to avoid them being clogged, the frequency will depend on the environmental conditions.

To avoid water entering the rear of the monitor the sealing gasket should be adhered to the rear of the monitor using the self-adhesive tape, positioning squarely to the rear of the enclosure and firmly press into position. Fixing screws can we screwed through the gasket to secure the monitor to a wall.
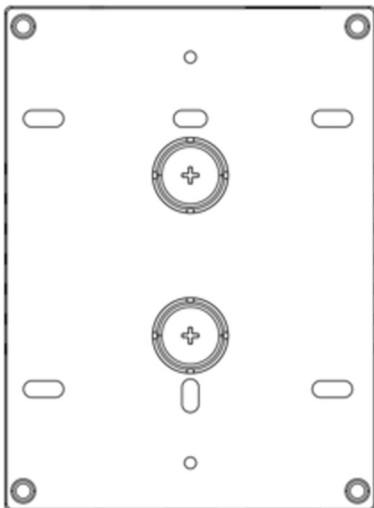
Apply the Solid Neoprene adhesive rubber sheet to seal the rear fixing holes

TECHNICAL SPECIFICATION

Mechanical	Mounting	Wall mounted fixings
	Entry	2 * knockouts 22.5mm
	Size (W x H x D)	4.37" (111.2mm)* 5.95" (151.2mm) * 1.97" (50mm)
	Weight (Max)	350g / 12.5 oz
	Enclosure	ABS Flame Retardant UL94 V0
Electrical	24V AC/DC	Nominal 24V AC/DC (12-32V)
	Power Consumption	1.5 W
Environmental	Operating & Storage Temperature	-4° to 122°F (-20° to 50°C)
	Room Humidity	15 to 90% RH (continuous) 0-99% (intermittent) non-condensing.
	Altitude	2000m
	Installation Cat (24V Voltage)	III @ 24V~
I/Os	Digital Communications	Modbus RTU and BACnet MS/TP (field selectable) Signal Relay Dry Contact 1A, 60 VDC
User Interface	Language	English
	Display	LCD Display
Conformance	Safety	UL/CSA/IEC/EN/BS 61010-1
	Electromagnetic Compatibility	Directive 2014/30/EU / Regulation 2016 / 50270 / FCC part 15
Sensors	Carbon Dioxide	Gas Performance UL 2075
	Carbon Dioxide	Gas Performance UL 2075 NO2

Please pass this manual to the system owner/user.

Date of Installation:	
Installation Location:	
Organisation:	
Stamp/Signature of the installer:	

We recommend all S&S equipment be commissioned by competent/trained engineers to ensure correct installation and operation. We strongly recommend the response and alarm signals are tested and validated once installed. This will ensure the equipment performs as intended and is free from any unforeseen damage caused by transit/installation.

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