Gas Measurement Instruments Ltd

V!SA

(4-Gas Version)

User Handbook

Q 09760

Issue 6

07/08/2013

Part Number: 66094

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Instrument Service / Repair contact details are also provided inside the back cover of this handbook.

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LIABILITY

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MODIFICATION NOTICES

GMI aim to notify customers of relevant changes in the product operation and maintain this Handbook up to date. In view of the policy of continuous product improvement there may be operational differences between the latest product and this Handbook.

This Handbook is an important part of the **V!SA** product. Please note the following points:

- It should be kept with the instrument for the life of the product
- Amendments should be attached to this Handbook
- This Handbook should be passed on to any subsequent owner/user of the instrument
- Although every care is taken in the preparation of this Handbook it does not constitute a specification for the instrument.

SOFTWARE

Software supplied on EPROM or similar device for use in a particular product, may only be used in that product and may not be copied without the written permission of Gas Measurement Instruments Ltd. Reproduction or disassembly of such embodied programmes or algorithms is prohibited. Ownership of such software is not transferable and Gas Measurement Instruments Ltd. does not warrant that the operation of the software will be error free or that the software will meet the customer's requirements.

DISPOSAL ADVICE

When no longer in use, dispose of the instrument carefully and with respect for the environment. GMI will dispose of the instrument without charge if returned to the factory.

SAFETY

- The instrument must be regularly serviced and calibrated by fully trained personnel in a safe area.
- **Batteries:** Alkaline batteries or *Rechargeable battery pack must be exchanged (*and recharged) in a safe area and fitted correctly before use. Never use damaged batteries or expose to extreme heat. See Section 4 : OPERATOR MAINTENANCE.
- Only GMI replacement parts should be used.
- If the instrument detects gas, follow your own organisation's procedures and operational guidelines.
- Gas can be dangerous and care should always be taken in its use.
- This equipment is designed and manufactured to protect against other hazards as defined in paragraph 1.2.7 of Annex II of the ATEX Directive 94/9/EC

Any right of claim relating to product liability or consequential damage to any third party against GMI is removed if the above warnings are not observed.

AREAS OF USE

Exposure to certain chemicals can result in a loss of sensitivity of the flammable sensor. Where such environments are known or suspected it is recommended that more frequent response checks are carried out. The chemical compounds that can cause loss of sensitivity include Silicones, Lead, Halogens and Sulphur. Do not use instrument in potentially hazardous atmospheres containing greater than 21% Oxygen.

STORAGE, HANDLING AND TRANSIT

The batteries in the rechargeable pack contain considerable energy and care should be taken in their handling and disposal.

The instrument is designed to handle harsh environments. The instrument is sealed to IP65 and the sensing elements, sample inlet and charging socket sealed to IP54. If not subject to misuse or malicious damage, the instrument will provide many years of reliable service.

The instrument can contain electrochemical sensors. Under conditions of prolonged storage these sensors should be removed. The sensor contains potentially corrosive liquid and care should be taken when handling or disposing of the sensor, particularly when a leak is suspected.

There is no special precautions to be taken when the instrument is in transit.

WARRANTY

The GMI **V!SA** instrument has a warranty against faulty goods or workmanship of 5 years. Consumable and Mechanical parts are not included in this. These are covered under GMI standard warranty conditions. For details, please contact GMI Ltd (UK).

DECLARATION OF CONFORMITY

Certificate No 000003

VISA

This declaration confirms that the above product, manufactured by

Gas Measurement Instruments Ltd
Inchinnan Business Park
Renfrew
Scotland
PR4 9RG

Conforms to all the relevant Standards and Directives and is manufactured in accordance with Standards and Qu

The product is in compl

Low Voltage Directive
ATEX Directive
Marine Equipment Dire
EMC Directive

IATEX 2286
- MED 0250181

The product has been
Directives.

is as appropriate to the

EN50014:1997, EN50020:2002, EN60064:1999, EN50057:1999, EN50284:1999, EN50104:2002, EN50270:1999, EN60079-0:2004, EN60079-1:2004, EN61779:1998

The quality is manufactured under an ISO 9001 quality system, BS EN 13980 and has product quality assurance surveillance as per the relevant Directives by

BSI	BS EN ISO 9001:2008 - BSI Cert No Q0970
SIRA	Module D - SIRA 00 ATEX M077 - SIRA Notified Body 0518

Gas Measurement Instruments Ltd confirms that the product and its associated manufacturing processes are in compliance with the above Directives and Standards.

A. Conway

Andrew Conway
Quality Assurance

30th March 2010

Refer to current Declaration of Conformity document Part No. 66250 (supplied with product)

REVISION RECORD

Date	Issue	Description Of Change
06/06/2003	1	New User Handbook.
12/01/2004	2	Revised to include effect of CN 2435, CN 2443, CN 2459, CN 2493, CN 2494, CN 2496, CN 2544 and CN 4014.
12/06/2006	3	Revised to include translations update and effect of CN 4099, CN 4137, CN 4146, CN 4178, CN 4224 and CN 4226.
24/08/2010	4	Revised to include Declaration of Conformity and effect of CN 4271, CN 4302, CN 4479, CN 4573, CN 4788, CN 4789, CN 4836, CN 4851, CN 4857, CN 4906 and CN 4957.
28/05/2012	5	Revised to include Marine Equipment Directive (MED) and effect of CN 4926.

07/08/2013	6	Revised to include effect of CN 6280.

TABLE OF CONTENTS

1

INTRODUCTION

1.1 GENERAL DESCRIPTION

The GMI **V!SA** combines quality, ruggedness and advanced technology in a user friendly, portable gas detector. Small and lightweight, it is suitably certified to recognised International Standards.

Fig. 1.1 V!SA Instrument

The **V!SA** is used for confined space monitoring, for example, in sewers, underground piping or within tanks, and other personal monitoring applications. Its high intensity audible and bright visual alarms provide early warning of dangerous gas levels.

The instrument is operated via a single push button, providing the user with a simple to use gas detector.

From one (1) up to four (4) gases can be monitored from the following list:

Note: A five (5) gas version is also available. For details, contact GMI Ltd.

- 0 to 100% LEL Hydrocarbons
- 0 to 25% Oxygen (O_2)
- 0 to 100 ppm Hydrogen Sulphide (H_2S)
- 0 to 1000 ppm Carbon Monoxide (CO)
- 0 to 30 ppm Sulphur Dioxide (SO_2)
- 0 to 100 ppm Sulphur Dioxide (SO_2)
- 0 to 10 ppm Chlorine (Cl_2)
- 0 to 20 ppm Nitrogen Dioxide (NO_2)
- 0 to 100 ppm Ammonia (NH_3)
- 0 to 300 ppm Nitric Oxide (NO)
- 0 to 5% Carbon Dioxide (CO_2)

The instrument display identifies the gas(es) the instrument is monitoring. An example of a four gas instrument display is shown in Fig. 1.2:

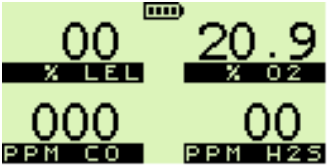


Fig. 1.2 (4-Gas) Display Example

The display details the current gas readings and operational / status information (as shown above) or the instrument can be set up to display a simple 'OK' message.

Note: This Handbook describes the operation of a four gas instrument configured in the most common format. On other models, operation is similar to the example shown. Operational differences are highlighted if and where they exist. Configurable options are available that allow the instrument to be set up to suit your particular requirements. These options are detailed in *italic text*, where applicable, and are also detailed in the 'CONFIGURATION HANDBOOK'.

1.2 FEATURES

The main features of the V!SA instrument are:

- Integral impact resistant housing.
- Single button user operation.
- From one (1), up to four (4) gases detected simultaneously. (A five gas version is also available).
- Alphanumeric display with screen light.
- High intensity audible and visual alarms.
- Confidence signal (green LED's and/or sounder).
- Built-in electric pump (optional).
- Automatic data logging (optional).
- Three types of battery pack: Long Duration, Fast Charge, and Alkaline. Each type of pack provides a different operational lifetime. These times can be found in Table 1.1 and display battery life in hours, allowing five (5) minutes of alarm per day.

- Instrument sealed to IP65 and sensing elements, sample inlet and charging socket sealed to IP54, making the instrument suitable for outdoor use
- A comprehensive range of accessories.

INSTRUMENT OPERATING MODE	BATTERY TYPE / LIFE	
	LONG DURATION / FAST CHARGE	ALKALINE
LEL	>16	>16
IR (INFRARED)	>16	>16
PUMP	>16	>16
LEL + IR	12	13
LEL + PUMP	12	13
IR + PUMP	15	>16
LEL + IR + PUMP	9	10
TOXIC SENSOR ONLY	>16	>16

Table 1.1 Battery Life

1.3 DATA LOGGING

Optional data logging allows gas values, summary logs and calibration details to be logged at regular intervals and later downloaded to a Personal Computer (PC).

Datalogging is available as an option when ordering. It cannot be retrofitted without returning the instrument to GMI.

Note: If the Data logging option is selected, refer to 'CONFIGURATION HANDBOOK' for further information on data logging and overwriting set up options.

1.3.1 Viewing Data Logged Readings

Data logged readings can be downloaded from the instrument into a PC using GMI software and communication adaptor. Contact our Sales Department at GMI for further details.

1.4 HYDROPHOBIC TYPE FILTER(S)

A hydrophobic filter would normally be fitted to the instrument but may be removed in certain applications, for example, when the instrument is used to detect Chlorine or other reactive gases.

The filter(s), if fitted, should be checked regularly and replaced if contaminated.

See 'FILTER REPLACEMENT' in Chapter 4, 'OPERATOR MAINTENANCE', for further information.

1.5 CONSTRUCTION

The instrument is housed in a tough, impact resistant moulded case. The instrument is sealed to IP65 and the sensing elements, sample inlet and charging socket sealed to IP54. The instrument withstands physical impact testing to EN 61779.

1.6 IDENTIFICATION LABEL

Each instrument has a unique serial number that appears on the label along with the instrument's certification details. This serial number also appears on the instrument display after switch on, during warm-up.

1.7 PHYSICAL PROPERTIES

Weight: 0.4 kg

Dimensions: 140 x 85 x 45 mm

1.7.1 Environment

Temperature Limits -20°C to + 50°C

Humidity: 0 to 95% R.H. non-condensing.

1.7.2 Typical Flow Rate Information

Pumped Instruments: Nominal pump flow rate is 0.5 to 0.7 litres per min. Max. 30 metres (97ft.) sample line.

Typical flow fail rate is 0.1 to 0.2 litres per min.

1.7.3 Warm-up / Stabilization Time

< 40 seconds.

1.7.4 Response Time (T_{90})

Typical Oxygen (O_2) response time: < 10 seconds.

1.8 CERTIFICATION

The **V!SA** instrument is certified as follows:
Note: Check instrument labels for actual certification.

ATEX  II 1 G EEx ia IIB T3

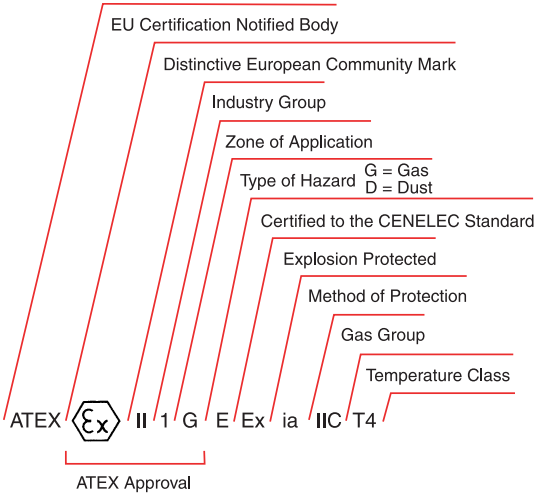
or

ATEX  II 2 G EEx ia d IIC T3

or

ATEX  II 2 G EEx ia d IIC T4

1.8.1 Identification of Symbols



Certification No. DEMKO03 ATEX 133803X
EEx ia IIB T3

Sira 05 ATEX 2295
EEx ia d IIC T3
or
EEx ia d IIC T4

0038/YY Marine Equipment Directive (Module B&E)

(European mark of Conformity)

1.8.2 Performance

This apparatus conforms to standard EN 50104.

Complies with:

EN 61779 (Flammable)

EN 45544 (Toxic)

Classified as to intrinsic safety only:

UL 913 Class I, Groups A, B, C and D

WARNING

The instrument is not for use in Oxygen enriched atmospheres.

WARNING

Rechargeable battery pack must be recharged and replaced in a non-hazardous area.

WARNING

To prevent ignition of flammable or combustible atmospheres, disconnect power (i.e. remove battery pack) before servicing.

WARNING

Replace battery pack only with GMI Part No. 66056 ; 66210 or 66335.

WARNING

To reduce the risk of explosion, do not mix new batteries with used batteries, or mix batteries from different manufacturers.

These conditions apply to 

UL approved product use only

2

OPERATION

2.1 OPERATING PROCEDURE

Check the following:

- The instrument is clean and in good condition.
- The battery pack is in good condition, fully charged and fitted correctly.
- The hydrophobic filter, if fitted, is clean and in good condition.
- The sample line and any other accessories used are in good condition and leak-free.
- All gas ranges are operational and the instrument is zeroed.
- The instrument is within the calibration period you have decided is necessary for your application.

Each time you use the instrument carry out the following procedure:

Caution: The GMI V!SA can be supplied with a flammable gas sensor. This sensor is designed for use in concentrations of gas not exceeding the Lower Explosive Limit (LEL). Exposing the sensor to high concentrations of flammable gas above the LEL can cause damage to the sensor and inhibit its proper operation. The GMI V!SA has an inbuilt safety alarm feature to prevent this. Refer to ALARMS section of this handbook for details.

- Switch instrument on in fresh air and check that the battery pack is charged.
- Check there are no faults.
- Attach optional accessories, as required.
- If oxygen sensor is fitted, check oxygen readings to ensure correct operation. The oxygen sensor responds to the user breathing on the instrument front grille by displaying a decreased value, i.e. below 20.9%.
- Switch the instrument off, in fresh air, after use.

2.2 SWITCHING THE INSTRUMENT ON

Press and hold the green Right Hand (RH) button for one second to switch the instrument on.

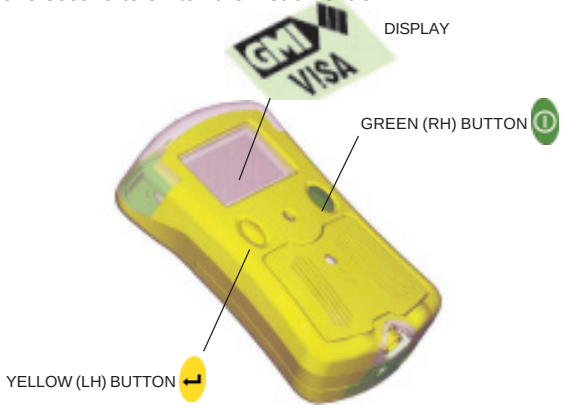


Fig. 2.1 V!SA Button Operation

The instrument begins its warm-up routine, which lasts 30 seconds. During the warm-up, a countdown timer appears in the top (RH) corner of the display.

Note: The display backlight illuminates and remains on during warm-up. When warm-up is completed, the screen light automatically switches off.

2.2.1 Instrument Identification

During warm-up, the instrument display identifies the model, serial number, software version, datalogging option and battery status information as shown in Fig. 2.2:

Fig. 2.2 Instrument Identification

Note: The instrument configuration may not include datalogging, if required, it can be retrofitted by GMI at a later date. Contact GMI Ltd. for details.

2.2.2 Battery Status

Provides the user with the Battery charge level, as shown in previous display. This will be indicated by a battery symbol with a bar graph showing FULL, 75%, 50% and 25%, which is shown for approximately five (5) seconds during warm up, then on the top of the display during normal operation.

2.2.3 Time and Date

The time and date from the instrument's built-in clock is displayed on the screen during warm-up, as shown in Fig. 2.3.

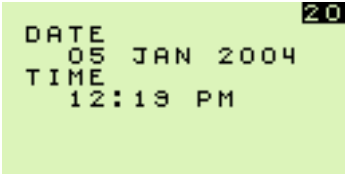


Fig. 2.3 Time and Date

If datalogging is being used, the time and date is set from this clock. This may be important when viewing the logged data.

2.2.4 Calibration Due Date

The calibration due date appears on the display, as shown in Fig. 2.4.

A configurable option is available not to display this screen.

Fig. 2.4 Calibration Due Date

If the Calibration Due Date has expired, the audible and visual alarm activates and the screen, as shown in Fig. 2.5, is displayed during warm-up:

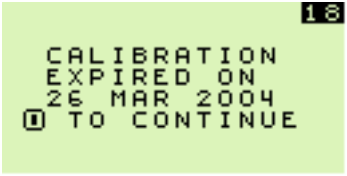


Fig. 2.5 Calibration Expired

Press and hold the green (RH) button ⏻ once, to acknowledge the calibration due date is overdue, cancel the audible / visual alarm, and continue to the next display.

A configurable option is available to force the user to switch off the instrument.

Note: Further details are available in 'CONFIGURATION HANDBOOK'.

2.2.5 Select Calibration Gas

This configurable option is available to allow the user to select a different flammable gas from that which was originally used to calibrate the instrument.

This action allows the instrument software to compensate and thus display more accurate readings when detecting the re-selected gas type.

When this option is displayed, as shown in Fig. 2.6, the gas that was originally used to calibrate the instrument is identified between two arrowheads.

Note: The instrument calibration certificate also identifies the original calibration gas type.

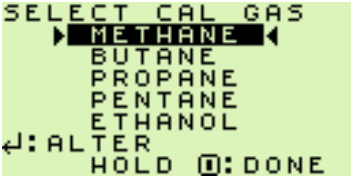


Fig. 2.6 Cal Gas Selection

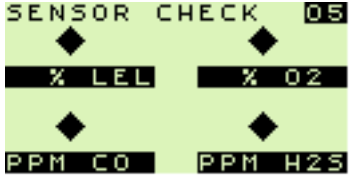
To select a different gas type, press the yellow Left Hand (LH) button ↵ to scroll through the available options from Methane, Butane, Propane, Pentane and Ethanol. When the required option is highlighted, press and hold the green (RH) button ⓘ to select.

Note: Accuracy for the re-selected gas type is ± 20%.

2.2.6 Sensor Confirmation Check

The symbol ◆ appears above each sensor type to confirm that the sensor has been recognised, is working correctly, and is being zeroed. When sensors are zeroed correctly, a symbol ✔ appears above each sensor.

Refer to Fig. 2.7 for example.



followed by

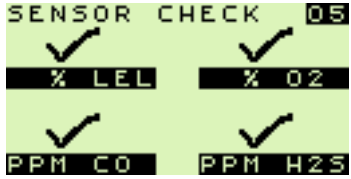


Fig. 2.7 Sensor Check Displays

If sensor(s) fail the zero check at the end of warm-up, the audible and visual alarm activates and the instrument display will show a spanner symbol and pause, as shown in Fig. 2.8:

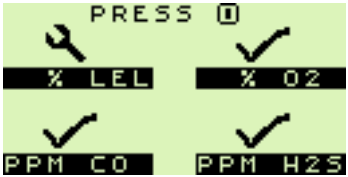
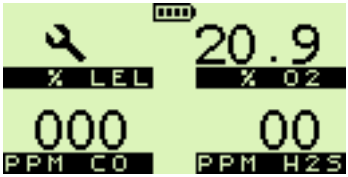


Fig. 2.8 Failed Sensor

To acknowledge the alarm, press the green (RH) button ① once. This will clear the audible / visual alarm and display a flashing spanner symbol, *alternating with the faulty sensor zero reading (*LEL sensor only). An example is shown in Fig 2.9:



alternating with

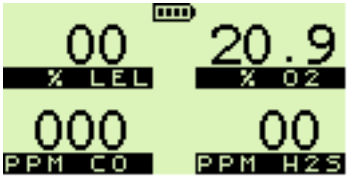


Fig. 2.9 Acknowledge Alarm

A configurable option is available to force the user to switch the instrument off if a zero fault is detected, as shown in Fig. 2.10:

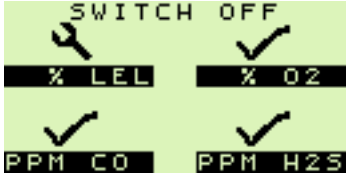


Fig. 2.10 Switch OFF

Note: If a sensor fault is detected during normal operation of the instrument, an audible / visual alarm is activated immediately and a spanner symbol is shown adjacent to the faulty sensor type in the display.

2.2.7 Normal Operating Display

When warm-up is completed successfully, the screen light switches off and the normal operating display is shown, as in example Fig. 2.11:

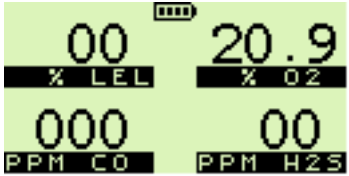


Fig. 2.11 Normal Operating Display

Each gas the instrument can measure is shown in the display. In the previous example, the instrument is a four gas model that can measure LEL, Oxygen (O_2), Hydrogen Sulphide (H_2S) and Carbon Monoxide (CO).

Note: The instrument display varies for each model as one, two, three or four gas. Versions measuring a range of different gases are available.

2.3 SWITCHING THE DISPLAY BACKLIGHT ON / OFF

The display screen light can be manually switched on when surveying in poor lighting conditions.

Press the green (RH) button  once to switch the screen light on. It remains on for 20 seconds and then automatically switches off.

2.4 VIEWING THE MAXIMUM AND MINIMUM RECORDED VALUES SINCE SWITCH ON

The instrument records the maximum and minimum gas values for each sensor, since switch-on.

To view max / min values, proceed as follows:

1) Start from the normal operating display, as shown in Fig. 2.12. Press the green (RH) button  once to switch the instrument screen light on.

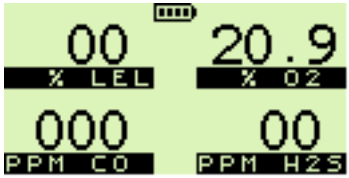


Fig. 2.12 Normal Operating Display

Press the green (RH) button again, while the screen light is on, to view the maximum gas values stored in the instrument.

The example shown in Fig. 2.13 illustrates the maximum gas values stored in a four gas instrument: LEL, Oxygen (O_2), Hydrogen Sulphide (H_2S) and Carbon Monoxide (CO).

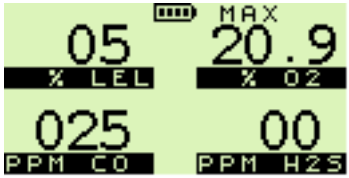


Fig. 2.13 Maximum Gas Values

2) Press the green (RH) button again to view the minimum gas values stored in the instrument.

Note: This screen is only displayed when an Oxygen sensor is fitted in the instrument.

The following example, Fig. 2.14, illustrates the minimum gas values stored in a four gas instrument: LEL, Oxygen (O_2), Hydrogen Sulphide (H_2S) and Carbon Monoxide (CO).

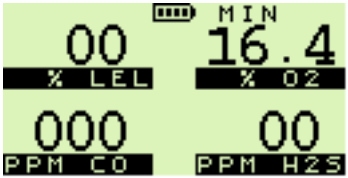


Fig. 2.14 Minimum Gas Values

3) After these readings have been noted, they can be removed from the memory by pressing and holding the green (RH) button for two (2) seconds if the instrument is clear of all alarms. This will return instrument to the normal operating screen. If a new set of readings are required, return to paragraph (1).

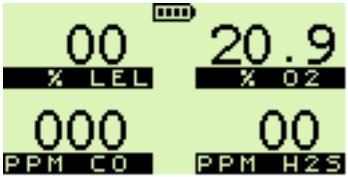


Fig. 2.15 Normal Operation

Note: The maximum and minimum values are cleared from the instrument's memory when you press and hold the green (RH) button  in non-alarm state. The display returns to the normal operating display if no button is pressed.

2.5 ALARMS RESET OR ACKNOWLEDGE

When the instrument detects an alarm set point has been reached, the audible and visual alarm will be activated to alert the user.

Caution: Never remove the battery to silence an alarm as this can damage the instrument.

The alarms are individually programmable to be either Latching, (i.e. alarm will stay on until the user resets by a press and hold of the green (RH) button  when the gas reading has returned within the preset alarm limits), or Non-Latching (i.e. the audible and visual alarm will reset automatically when the reading returns within the preset alarm limits).

Note: Default alarms are set in accordance with current international standards.

ALARM TYPE	LATCHING Y(es) or N(o)	MUTE Y(es) or N(o)	AUDIBLE INDICATION	VISUAL (RED LED) INDICATION
LEL 1 (Hi)	Disabled	Disabled	High Pitch Tone	All Slow Flashing
LEL 2 (Hi Hi)	Y	N	Continuous Warble	(2) Inner / Outer Siren Flash
O_2 1 (Hi Hi)	Y	N	Continuous Warble	(2) Inner / Outer Siren Flash
O_2 2 (Lo)	Disabled	Disabled	High Pitch Tone	All Slow Flashing
O_2 3 (Lo Lo)	Y	N	Continuous High Pitch Warble	(2) Inner / Outer Siren Flash
Toxic 1 (Hi)	Disabled	Disabled	High Pitch Tone	All Slow Flashing
Toxic 2 (Hi Hi)	Y	N	Continuous High Pitch Warble	(2) Inner / Outer Siren Flash
Toxic 3 (STEL)	Y	N	Continuous High Pitch Warble	(2) Inner / Outer Siren Flash
Toxic 4 (LTEL / TWA)	Y	N	Continuous High Pitch Warble	(2) Inner / Outer Siren Flash
Low Battery Fault	N / A	N / A	Low Pitch Tone	All Slow Flashing
Zero Fault	N / A	N / A	Low Pitch Tone	All Slow Flashing
Sensor Fault	N / A	N / A	Low Pitch Tone	All Slow Flashing
Sample Fault (Pumped Instr. Only)	N / A	N / A	Low Pitch Tone	All Slow Flashing
Low Flow (Pumped Instr. Only)	N / A	N / A	Low Pitch Tone	All Flashing
Calibration Required	N / A	N / A	Low Pitch Tone	All Slow Flashing
Calibration Expired	N / A	N / A	Low Pitch Tone	All Slow Flashing
Over Range (LEL)	Y	N / A	Continuous Wail	All Fast Flashing

N / A = Not Applicable

Table. 2.1 V!SA Alarms

A configurable option is available that disables user ability to mute the audible alarm only.

2.5.1 Confidence Signal

During normal operation, the instrument sounds a confidence beep and illuminates the green LED's briefly every 15 seconds. This function is programmable in the instrument setup software. This function makes the user aware that the instrument is operating correctly:

Note: The confidence beep and/or LED's can be disabled. See the 'CONFIGURATION HANDBOOK' for further information.

2.6 SWITCHING THE INSTRUMENT OFF

Press and hold both the yellow Left Hand (LH) button ↵ and the green (RH) button ⏻ together to switch the instrument Off.

The instrument screen will now start a countdown from three (3) to OFF. Both buttons must be pressed together until the display goes blank.

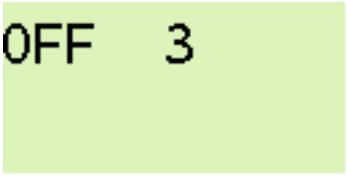


Fig. 2.16 Switch OFF

While both buttons are pressed, the audible alarm sounds every second to alert user that the instrument is switching OFF.

2.7 REMOTE SAMPLING (with pump option)

Warning (Hand Aspirator): The V!SA is primarily designed to be used with a built-in pump for remote sampling. The hand aspirator can be used for indicative sampling, but it must be noted that when using a hand aspirator, a reading error in the region of ± 20% is possible. In addition, whereas the pump can sample quickly and accurately with up to 30 metres of sample line, the hand aspirator must only be used with up to 10 metres of sample line and the sample time is extended. The sample line must be intact and the proper flow established.

Remote sensing is carried out with the inbuilt electric pump option, or by the hand aspirator for non-reactive gases, using the sample connector at the bottom of the instrument and sample tubing supplied with your instrument. On pumped models the pump is off after start-up.

2.7.1 Pump Option:

Press and hold the green (RH) button to start or stop the pump. The pump will run at normal speed for remote sampling.

When the pump is running at normal speed, a pump symbol rotates in the display as shown in Fig. 2.17.

Note: It is only possible to switch the pump ON / OFF when instrument alarms are inactive.

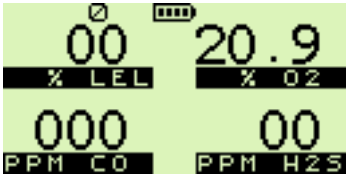


Fig. 2.17 Pump Symbol Displayed

2.7.2 Assisted Diffusion Option:

If assisted diffusion is the configured option, after instrument warm-up, the pump remains ON at low speed. This setting is used for reactive gases (*see note).

A press and hold of the green (RH) button re-sets the pump to run at normal speed. When the pump is running at normal speed, a pump symbol rotates in the display as illustrated in Fig. 2.17. Press and hold the green (RH) button again to switch the pump OFF. A further press and hold of the green (RH) button re-sets the pump to run at low speed.

* Note: GMI strongly recommend that pumped instruments, configured with reactive gases, use assisted diffusion mode in preference to diffusion mode.

Note: It is only possible to switch the pump ON / OFF when instrument alarms are inactive.

3

ALARMS

3.1 GAS ALARMS

Gas alarms are enabled when the instrument is switched on.

Note: Alarms are disabled during warm-up.

All gas ranges have alarm limits that trigger the alarm if the measured gas value exceeds the set level. If a preset alarm level is exceeded, the audible alarm sounds, the LED's flash RED and the gas range in alarm flashes on the display.

3.1.1 Flammable LEL Alarm Limit

Up to two (2) alarm levels are programmable, each with different pitch and tone. All alarms are user configurable to meet the specific needs of different companies.

3.1.2 Over-Range Flammable Gas Alarm Function

The flammable sensor is designed for use in the LEL range only. Exposure to high concentrations of flammable gas, such as lighter fuel, can damage the flammable sensor. If the flammable gas readings exceed 120% LEL, a safety alarm will be activated. The instrument must now be switched off and returned to clean air.

3.1.3 Oxygen (O_2) Alarm Limits

Up to one (1) upper and two (2) lower alarm limits are programmable, each with different pitch and tone. All alarms are user configurable to meet the specific needs of different companies.

3.1.4 Toxic Alarm Limits

When operating normally, the instrument records minimum and maximum readings for each gas and calculates the Short Term Exposure Limit (STEL) and Long Term Exposure Limit (LTEL), known as Time Weighted Average (TWA) readings , for each toxic gas range as appropriate. Up to two (2) instantaneous and two (2) TWA alarms are programmable for each toxic range fitted to the instrument.

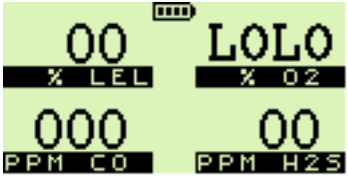
Note: A Time Weighted Average (TWA) value is the mean average gas level over a specific period. The STEL is 15 minutes and the LTEL is 8 hours. In accordance with UK legislation, this requires the time weighted averages to be averaged over a full 24 hour period whether the instrument is On or Off. Such averaging essentially makes the instrument single user applicable. *The option is available to restart the averaging after each instrument switch-off, thus allowing for multiple user application.*

All alarms are user configurable to meet the specific needs of different companies.

Note: The toxic gas alarm levels – instantaneous, STEL and LTEL are set at the time of instrument manufacture. It is important that the user ensures that the levels are in accordance with their company's alarm levels and with health and safety legislation. The alarm levels may be

changed, if required, via the instrument set up software, or as detailed in the 'CONFIGURATION HANDBOOK'.

In the following two examples, Fig. 3.1 shows a four-gas instrument signalling a 'Lo Lo' Oxygen alarm and Fig. 3.2 shows a four-gas instrument signalling a 'Hi Hi' LEL alarm. If more than one gas alarm level is exceeded, the gas value will flash for each gas type in alarm.



toggles to

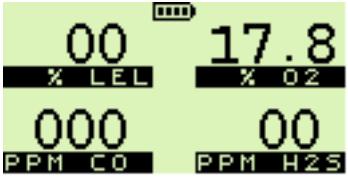
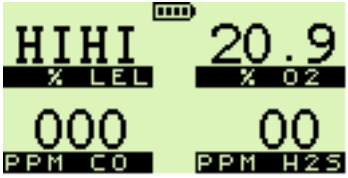


Fig. 3.1 'LoLo' Alarm



toggles to

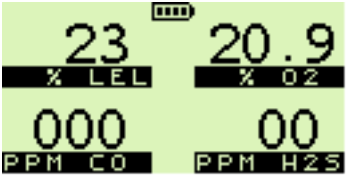


Fig. 3.2 'HiHi' Alarm

Each alarm can be latching or non-latching. Latching alarms must be cleared by the user when the gas level returns to within the preset alarm limits. Non-latching alarms clear automatically when the gas level returns to within the preset alarm limits.

Note: See the 'CONFIGURATION HANDBOOK' for further information.

3.2 ACKNOWLEDGE GAS ALARMS

Caution: Never remove the battery to silence / mute an alarm as this can damage the instrument.

Once in a safe gas free area, or the gas reading has returned within the preset limits, press and hold the green (RH) button  to silence / mute the alarm sounder and extinguish the gas LED's.

Mute 'enabled' silences alarm for 60 seconds.

Mute 'disabled' cannot silence the alarm until gas falls below alarm level.

If alarm configuration allows muting of audible alarm,

(Refer to table in paragraph 'ALARMS RESET OR ACKNOWLEDGE'), the following applies:

Non-latching: Once alarm has been muted, the audible alarm is cancelled for a period of 60 seconds, and if gas concentration during that time falls below alarm set point, the visual alarm clears automatically.

Latching: If audible alarm has been muted and if gas concentration during that time falls below alarm set point, visual alarm requires to be acknowledged to clear.

3.3 HIGH FLAMMABLE GAS OVER-RANGE ALARM

Caution: Exposing the LEL sensor to concentrations of flammable gas above 100% LEL can damage the sensor.

In order to protect the user from danger in the event of the flammable gas (LEL) sensor being over exposed to a high concentration of flammable gas, the instrument has an over-range alarm.

If the LEL sensor is exposed to a gas reading above 120% LEL, the displayed value will change to four (4) rising arrows, the tone of the audible alarm will change, and the visual alarm will flash quickly. The flashing message 'DANGER OVER RANGE' is displayed, as shown in Fig 3.3:

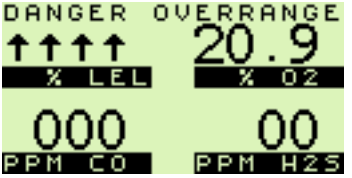


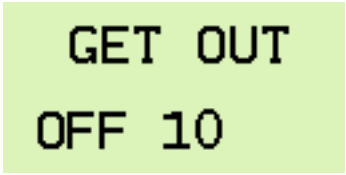
Fig. 3.3 Over Range Alarm

The instrument must be returned to a gas free area or sample clean air. The instrument must now be switched off.

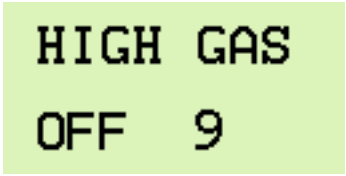
Note: To avoid accidental switch-off in the dangerous state, the off cycle is increased to 10 seconds.

Switch off by a press and hold of both buttons together.

A count timer, from 10 seconds to zero, will appear on the display together with the message ‘GET OUT’ alternating with ‘HIGH GAS’, as shown in Fig. 3.4:



then



and so on, alternating until zero is reached

Fig. 3.4 ‘High Gas’ / ‘Get Out’ Timer

After switching the instrument off, when the flammable sensor has been exposed to potentially damaging high flammable gas concentrations, it is important that the instrument is only switched on again in clean fresh air.

3.4 FAULT ALARMS

Refer to Alarms Table, on page 2-14 of this handbook, to identify the audible / visual indication for any of the following faults.

3.4.1 Low Battery

The "LOW BATTERY" flag is displayed, intermittently on the screen, when the instrument's battery power is low (i.e. approximately 30 minutes operating time remaining). The audible alarm sounds, once every two seconds, and the Red LED's flash. Recharge the battery or replace the alkaline batteries if using alkaline batteries.

The "BAT FAULT" flag shows constantly when approximately three (3) minutes operating time remains. The audible alarm sounds continuously and the Red LED's illuminate constantly. After three (3) minutes the instrument automatically switches off.

Note: Both audible and visual gas alarms continue to operate after the low battery warning message, "LOW BATTERY", appears.

3.4.2 Zero Fault

Note: For instruments with CO2 sensor fitted, refer to paragraph 3.4.3 for details.

A "ZERO FAULT" flag and a flashing spanner symbol appears after warm-up if the instrument is switched on in the presence of gas or the instrument has been unable to zero all sensors correctly.

The audible alarm sounds, once every two seconds, and the Red LED's flash.

It is strongly recommended the instrument is returned to a gas free area. Switch the instrument off and then switch on again in clean air. If the fault persists, return the instrument for service.

The instrument can however still be used to detect and alarm on the other sensor(s) fitted. Press the green (RH) button , as per the screen prompt, to continue.

The faulty sensor will cause the instrument to display a flashing spanner symbol to warn the user that this sensor is not working correctly, as shown in Fig. 3.5:

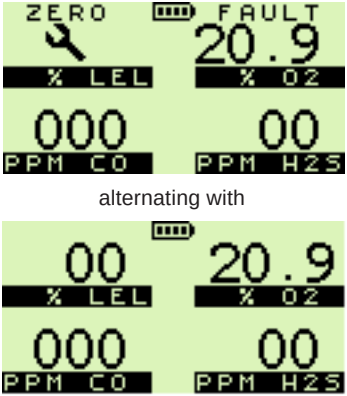


Fig. 3.5 Zero Fault

Note: The flashing spanner symbol will only alternate with the faulty sensor reading in the LEL range. If this occurs, the instructions in section 3.4.4 'Sensor Fault', paragraphs (2) and (3), should be followed .

3.4.3 Zero Fault - Only applicable to instruments with CO2 sensor fitted

If a CO2 range spanner symbol appears after warm-up, as illustrated in Fig. 3.6, together with the audible alarm sounding once every two seconds, and the Red LED's flashing, the instrument has been switched on in the presence of gas or the instrument has been unable to zero the CO2 sensor correctly.

It is strongly recommended the instrument is returned to a gas free area. Switch the instrument off and then switch on again in clean air. If this is not possible / convenient, the alarm can be acknowledged and the instrument can still be used to detect CO2 gas.

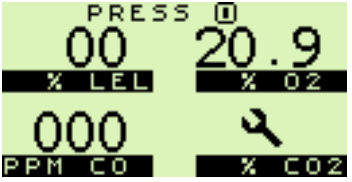
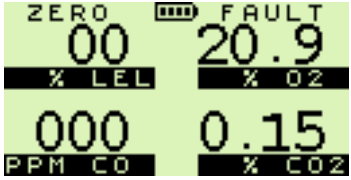


Fig. 3.6 CO2 Sensor - Zero Fault

Press the green (RH) button to acknowledge CO2 alarm and continue using instrument.

Note: If a “ZERO FAULT” flag is displayed together with a flashing spanner symbol on any of the other sensors, follow instructions detailed in paragraph 3.4.2.

The faulty CO2 sensor will cause the instrument to display a flashing ‘ZERO FAULT’ flag alternating with a gas value to warn the user that this sensor is not correctly zeroed, as shown in Fig. 3.7:



alternating with

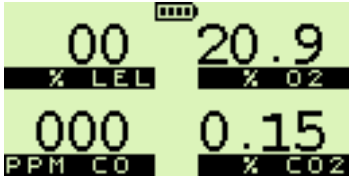


Fig. 3.7 CO2 Sensor - Zero Fault

3.4.4 Sensor Fault

There are three types of sensor fault as illustrated in the following displays:

1) If a “ZERO FAULT” flag and a spanner symbol appears above gas type, as shown in Fig. 3.8, then the sensor requires replacement or an electrical fault exists. Return instrument to an approved Service / Repair facility.

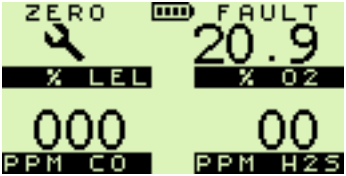
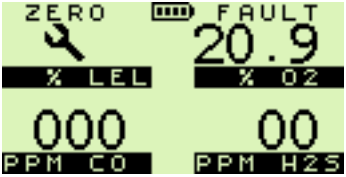


Fig. 3.8 Sensor Fault

2) If a “ZERO FAULT” flag and a flashing spanner symbol appear, alternating with a zero LEL reading as shown in Fig. 3.9, apply test gas for two minutes to allow the display to return to zero then switch instrument Off and On again. If fault remains, return instrument to an approved Service / Repair facility.



alternating with

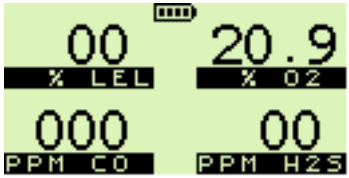
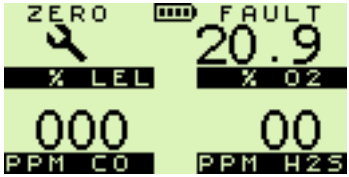


Fig. 3.9 Check Fault

3) If a “ZERO FAULT” flag and a flashing spanner symbol appear, alternating with an LEL gas value as shown in Fig. 3.10, leave instrument on for 30 to 60 minutes then switch instrument Off and On again. If fault remains, return instrument to an approved Service / Repair facility.



alternating with

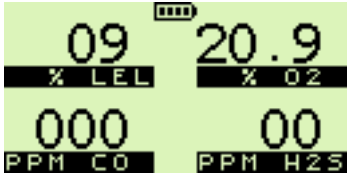


Fig. 3.10 Check Fault

3.4.5 Sample Fault (Pumped Instruments Only)

If the pump symbol changes to the symbol shown in Fig. 3.11, a “FLOW FAULT” flag is displayed and an audible alarm and Red LED’s are activated, then a sample fault or flow fail exists.

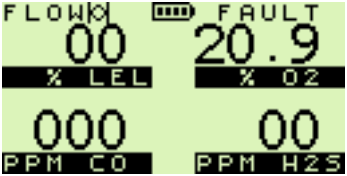


Fig. 3.11 Sample Fault

Check sample line, sample filter or probe for blockage, if applicable. Clear blockage then restart the pump by a press and hold of the green (RH) button.

3.4.6 Low Flow - Only applicable to pumped instruments supplied with this option.

Note: Feature is automatically disabled if air temperature is below 5°C (41°F)

If a “LOW FLOW” flag flashes in the display and an audible alarm and Red LED’s are activated, then a low flow exists. In this alarm condition, the pump symbol is not displayed. Refer to example Fig. 3.12.

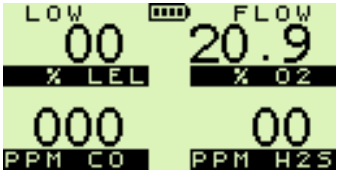


Fig. 3.12 Low Flow

Check maximum sample line length (30 metres) is not exceeded, check sample filter or probe for blockage, if applicable.

3.4.7 Calibration Expired

During normal operation of the instrument where the calibration date has expired, a “CAL EXPIRED” warning flag will flash on the display every 30 seconds to alert the user of the fact that the expiry date has been exceeded.

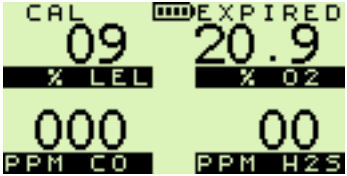


Fig. 3.13 Calibration Expired

3.4.8 Calibration Required

During warm-up, if the ‘CALIBRATION REQUIRED’ flag is displayed and an audible alarm and Red LED’s are activated, the instrument has detected a fault in the calibration memory during start-up and is unable to continue without re-calibration.

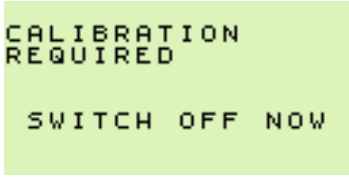


Fig. 3.14 Calibration Required

The instrument must be switched off immediately. Follow appropriate action required by your company for calibration.

4

OPERATOR MAINTENANCE

4.1 CLEANING

CAUTION: Do not use polishes containing silicon or solvent to clean the instrument as these may damage the flammable gas sensor (if fitted). Do not use abrasive materials or strong volatile chemical solutions as these could damage the impact resistant casing.

The outer, impact resistant, rubber casing of the **V!SA** instrument may be cleaned using a non-abrasive moist cloth. Rub the cloth over the outer casing to remove any dirt and grime.

In extreme cases, a mild soap solution may be used with a non-abrasive cloth to remove more stubborn marks.

4.2 FILTER REPLACEMENT

The instrument has two filters protecting the instrument sensors. The Sensor Grille (Hydrophobic) Filter is located behind sensor grille on front of the instrument and the Sample Inlet (Dust) Filter is located in the sample inlet connector at the bottom of the instrument. The filters should be inspected periodically for signs of damage.

To inspect / replace the filters, proceed as follows:

4.2.1 Sensor Grille Filter

1) Unscrew the cover screw, in a counter clockwise direction, using the Battery / Sensor Grille Key (Part No. 66166), then remove the cover by sliding it away from the instrument and up towards the display screen.

Fig. 4.1 Key in Cover Screw

Fig. 4.2 Filter and Cover Removed

2) Fit a new Sensor Grille Filter (Part No. 66083), if required.

   Note: The filter is keyed and therefore can only be fitted in one direction.

3) Replace the sensor cover assembly by first positioning the location feet, then pressing the cover down on to the filter.

4) Replace and secure the cover screw, in a clockwise direction, using the Battery / Sensor Grille Key (Part No. 66166).

   Note: Care must be taken not to overtighten the cover screw.

4.2.2 Sample Inlet Filter

1) Unscrew the two (2) retaining screws, in a counter clockwise direction, using the Inlet Filter Key (Part No. 66165), then remove the sample line connector.

Fig. 4.3 Key in Connector Retaining Screw

2) Push the sample inlet filter disc out by inserting the hexagonal key into the sample nozzle. Refer to image on next page.

3) Fit a new Sample Inlet Filter (Part No. 66084).

4) Replace the sample line connector. The sample line connector is moulded to fit in one direction only. Make sure that it is the correct way round to slip easily into the instrument.

5) Replace then tighten the two retaining screws, in a clockwise direction, using the Inlet Filter Key (Part No. 66165).

   Note: Care must be taken not to overtighten the screws.

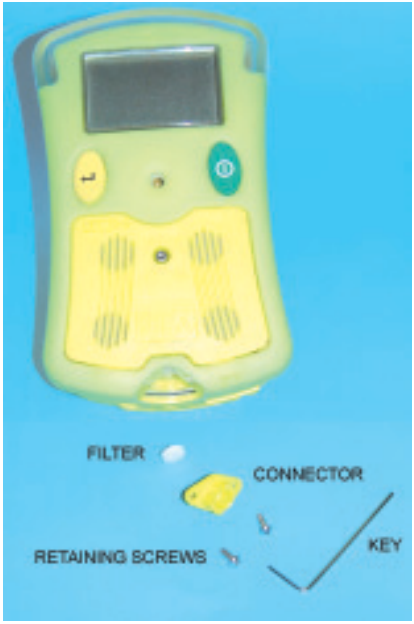


Fig. 4.4 Filter and Connector Removed

4.2.3 In-line Hydrophobic Filter (Accessory)

The in-line hydrophobic filter assembly consists of the filter and a luer fitting on one side of the filter and a slide-on connection on the other, and is available as an accessory (Part No. 66485). The filter assembly is used to protect the instrument from the ingress of water when sampling in moist conditions.

The filter is located between two lengths of 'Tygon' tubing (Part No. 66118) and attached to the instrument via a Sample Line Connector (Part No. 66045) as illustrated in Fig. 4.5.

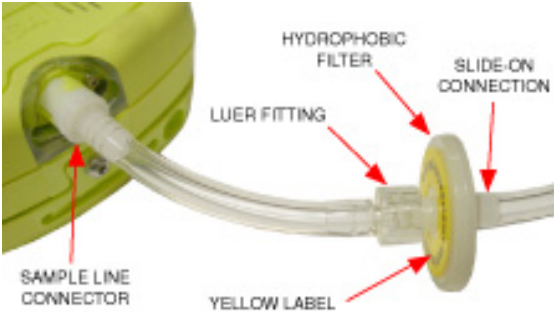


Fig. 4.5 In-line Hydrophobic Filter

To replace the filter, proceed as follows:

1) Unscrew the luer fitting from one side of the the filter in a counter clockwise direction, detach the tubing from the other side then remove the hydrophobic filter.

Note: If re-fitting the same filter, make sure that filter direction of flow orientation is maintained. This can be easily identified by position of yellow label on filter, i.e. facing instrument.

2) Fit a new In-line Hydrophobic Filter (Part No. 66484). Note that the filter should be fitted with the yellow label facing the instrument.

3) Attach the luer fitting, with sample line attached, to the mating side of the filter then tighten in a clockwise direction to secure. Do not overtighten the fitting.

4) Attach the sample line to the other side of the filter making sure that it is securely fitted.

4.3 BATTERY PACKS

Battery packs provide the instrument with the power it requires to operate.

Three types of battery pack are available:

Long Duration, Fast Charge, and Alkaline.

Each type of pack provides a different operational lifetime. These times can be found in Table 4.1 and display battery life in hours, allowing five (5) minutes of alarm per day.

INSTRUMENT OPERATING MODE	BATTERY TYPE / LIFE	
	LONG DURATION / FAST CHARGE	ALKALINE
LEL	>16	>16
IR (INFRARED)	>16	>16
PUMP	>16	>16
LEL + IR	12	13
LEL + PUMP	12	13
IR + PUMP	15	>16
LEL + IR + PUMP	9	10
TOXIC SENSOR ONLY	>16	>16

Table 4.1 Battery Life

The battery pack should be recharged (rechargeable battery pack), or the batteries replaced (alkaline battery pack), in the following situations:

- The 'Low Battery' flag  appears on the display
- The instrument will not switch On

When the 'Low Battery' flag appears on the display, there is approximately 30 minutes operation left at normal temperatures. The instrument will then switch Off automatically.

The **'Long Duration'** battery pack can be charged using the following GMI chargers:

Standard Charger: The battery pack can be removed from the instrument then connected to the standard charger or, it can be charged while fitted to the instrument.

5-Way / 10-Way Standard Charger: The battery pack(s) can be removed from the instrument(s) then connected to the standard charger lead(s) or, it / they can be charged while fitted to the instrument(s).

12V / 24V Vehicle Charger: The battery pack can be removed from the instrument then connected to the vehicle charger or, it can be charged while fitted to the instrument.

Fast Charger: The battery pack must be removed from the instrument then 'docked' the fast charger.

10-Way Fast Charger with (up to 9) Slave Unit(s): The battery pack(s) must be removed from the instrument(s) then 'docked' the fast charger / slave unit(s).

The **'Fast Charge'** battery pack can be charged using the following GMI chargers:

Fast Charger: The instrument can be docked in the fast charger with the battery pack fitted or, the battery pack can be removed from the instrument then 'docked' in the fast charger.

10-Way Fast Charger with (up to 9) Slave Unit(s): The instrument(s) can be docked in the fast charger / slave unit(s) with the battery pack(s) fitted or, the battery pack(s) can be removed from the instrument then 'docked' in the fast charger / slave unit(s).

4.3.1 Removing and Replacing a Battery Pack

CAUTION
1) Always switch the instrument off before removing the battery pack.
2) Always replace the protective cap in the Long Duration battery pack charging socket before use

WARNING
1) Rechargeable battery pack must be recharged and replaced in a non-hazardous area.
2) Replace alkaline / rechargeable battery pack only with genuine GMI Parts

1) Unscrew the captive screw, in a counter clockwise direction, using the Battery / Sensor Grille Key (Part No. 66166) as shown in Fig. 4.6.

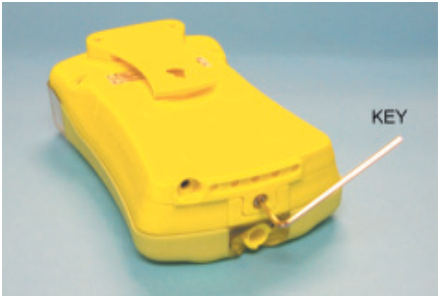


Fig. 4.6 Key in Battery Pack Captive Screw

Note: Long Duration battery pack is fitted with a captive screw and protective cap.

2) Pull the battery pack down from the instrument to disconnect, as shown in Fig. 4.7.

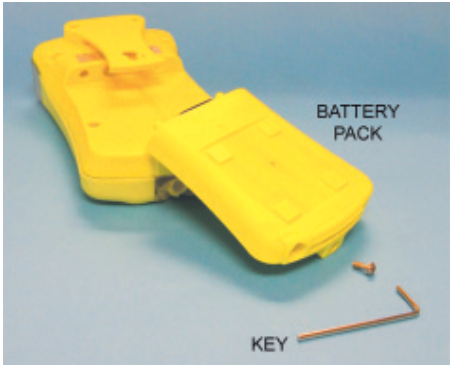


Fig. 4.7 Battery Pack Removed

3a) RECHARGEABLE:

Replace with a fully charged battery pack.

Refer to 'Charging (Rechargeable) Battery Pack', in section 4.3.2.

3b) ALKALINE:

Replace alkaline batteries.

Refer to 'Replacing Alkaline Batteries', in section 4.3.3.

4) Replace battery pack in instrument. Make sure it is correctly aligned then push connector together.

5) Tighten the captive screw, in a clockwise direction, using the Battery / Sensor Grille Key (Part No. 66166).

Note: Care must be taken not to overtighten the captive screw.

6) Fit the protective cap in the Long Duration battery pack charging socket before use.

4.3.2 Charging (Rechargeable) Battery Packs

There are two (2) types of rechargeable battery pack, as follows:

A 'Long Duration' nickel metal hydride (NiMH) battery pack (Part No. 66056).
or
A 'Fast Charge' nickel metal hydride (NiMH) battery pack (Part No. 66335).

Make sure that rechargeable battery packs are recharged using only GMI chargers.

CAUTION 1: Never attempt to recharge an alkaline battery pack.

CAUTION 2: Switch the instrument off when charging a battery pack fitted to an instrument.

Standard Charger

The 'Long Duration' battery pack should be left overnight connected to the standard charger to recharge a discharged battery pack. This period may vary depending upon operational conditions such as temperature and the condition of the battery pack in terms of capacity. The battery pack can be removed from the instrument and connected to the charger on its own or it can be charged

while fitted to the instrument, as shown in Fig. 4.8.

It is important that the instrument is switched off when charging a battery pack fitted to the instrument.

If the battery pack is fitted to the instrument during charging, the outer two red instrument LED's illuminate for a period of 14 hours, after which time are replaced by the green LED's

Note: This is a timer function only, and does not indicate charged condition of battery pack.

Fig. 4.8 Instrument Connected to Standard Charger

5-Way / 10-Way Standard Charger

This option provides the charging up to five (5) or ten (10) 'Long Duration' rechargeable battery packs simultaneously using standard charger connections and re-charging from one power outlet socket.

The ‘Long Duration’ rechargeable battery pack can be removed from the instrument or alternatively, can be charged while fitted to the instrument and connected to the 5-Way or 10-Way Standard Charger. (5-Way adaptor option illustrated in Fig. 4-9).

It is important that the instrument is switched off when charging a battery pack fitted to the instrument.

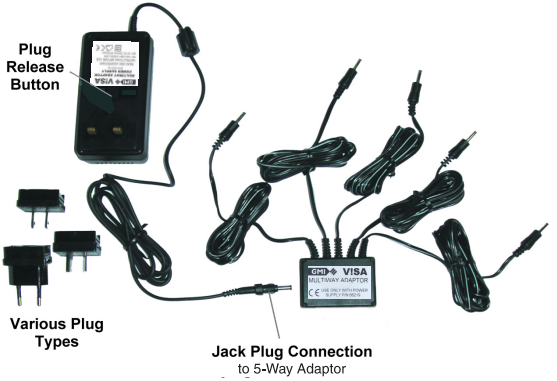


Fig. 4.9 5-Way Charging Adaptor Option

The rechargeable battery packs should be left overnight connected to the Standard Charger to recharge discharged battery packs. This period may vary depending upon operational conditions such as temperature and the condition of the battery packs in terms of capacity.

If the battery pack is fitted to the instrument during charging, a small battery symbol on the **V!SA** screen will display charging operation as a flashing bar graph, also, the outer two red instrument LED’s illuminate for a period

of 14 hours, after which time are replaced by the green LED's

Note: This is a timer function only, and does not indicate charged condition of battery pack.

Fast Charger

The 'Fast Charge' or 'Long Duration' battery pack can be removed from the instrument and located in the Fast Charger as illustrated below. The 'Fast Charge' battery pack can also be charged while fitted to the instrument by 'docking' the instrument in the Fast Charger as illustrated below. It is important that the instrument is switched off when charging a battery pack fitted to the instrument.

Fig. 4.10 Battery Pack / Instrument 'Docked' in Fast Charger

A battery pack will take approximately $3^{1}/_{2}$ hours to charge from an exhausted condition. Note that the period of charging may vary depending upon operational conditions such as temperature and the condition of the battery pack in terms of capacity.

A green LED on the front of the charger indicates 'charging in progress'. This LED is extinguished when charging is complete.

10-Way Fast Charger with (up to 9) Slave Unit(s)

The 'Fast Charge' or 'Long Duration' battery pack can be removed from the instrument and located in the Fast Charger master or slave unit. The 'Fast Charge' battery pack can also be charged while fitted to the instrument by 'docking' the instrument in the Fast Charger master or slave unit. It is important that the instrument is switched off when charging a battery pack fitted to the instrument. A battery pack will take approximately $3^{1}/_{2}$ hours to charge from an exhausted condition. Note that the period of charging may vary depending upon operational conditions such as temperature and the condition of the battery pack in terms of capacity.

A green LED on the front of the charger master or slave indicates 'charging in progress'. Each LED is extinguished when charging is complete.

Fig. 4.11 Battery Pack / Instrument 'Docked' in Fast Charger / Slave Unit(s)

4.3.3 Replacing Alkaline Batteries

CAUTION: To be in compliance with the certification regulations of this product, use only alkaline batteries from the following manufacturers:
- Energizer / Energizer Industrial
- Panasonic
- Sony.

WARNING: When replacing batteries in the alkaline battery pack, make sure that you are in a safe area and the instrument is switched Off. Do not open an alkaline battery compartment cover or replace the batteries in a hazardous area. Never attempt to charge an alkaline battery pack and never use rechargeable batteries in an alkaline battery pack. To reduce the risk of explosion, do not mix new batteries with used batteries, or mix batteries from different manufacturers.

The alkaline battery pack (Part No. 66210) allows the instrument to be powered using three LR6 (AA) size batteries.

Always switch the instrument Off before changing the battery pack.

- Release the cover plate retaining screw, securing the battery pack cover, by turning it in a counter clockwise direction. Use the Battery / Sensor Grille Key (Part No. 66166).

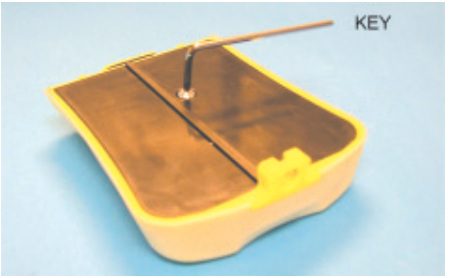


Fig. 4.12 Key in Cover Plate Retaining Screw

- Replace the three LR6 (AA) size batteries, as shown in Fig. 4.13.

Fig. 4.13 Alkaline Batteries Removed

Note: Always use three new LR6 (AA) size batteries. Do not mix old and new batteries.

- Make sure that the batteries are replaced using correct polarity for + and -
- Replace the battery cover plate then tighten the retaining screw in a clockwise direction using the Battery / Sensor Grille Key (Part No.66166).

Note: Care must be taken not to overtighten the retaining screw.

5

CALIBRATION

5.1 GENERAL DESCRIPTION

The instrument has been calibrated for particular gases. Where any doubt exists the product should be returned to GMI or an authorised distributor for calibration.

WARNING: The instrument must be calibrated and configured by authorised personnel only.

Four methods of calibration are possible:

- Field Calibration. See 'CONFIGURATION HANDBOOK' for further details.
- The GMI Manual Calibration software allows the instrument to be linked to a PC running Calibration software and applying gas manually.
- The GMI Automatic Calibration System provides controlled delivery of gases allowing you to calibrate in a controlled manner and maintain a record of calibration results on a PC.
- The GMI Instrument Management System (IMS) provides all the facilities of the Automatic Calibration System with the added feature of instrument database management.

Note: The detailed calibration methods, consisting of both hardware and software, are manufactured by GMI. For more detail contact GMI or an authorised distributor.

5.2 CALIBRATION VALIDITY

Calibration validity is the responsibility of the user. Under normal operating conditions a 12 month period can be expected. This is no guarantee, however, as the precise application of the product is unknown to GMI. Individual codes of practice may dictate shorter periods.

Regular checking establishes a pattern of reliability and enables the calibration check period to be modified in line with operational experience. The higher the risk, the more frequently calibration should be checked.

6

ACCESSORIES

Accessories available for **V!SA** instrument

Std. Accessories Part Number	Description
66123	Hand Aspirator (can be used for non-reactive gases only)
66478	Hand Aspirator (c/w 3.0 metres Tygon Tubing)
66118	Sample Line (per metre)
66112	Sample Line Extender (to connect sample lines together)
66136	3.0 metres Tygon Tubing (c/w sample connector)
66930	3.0 metres Reactive Gas (e.g. Cl2 ; NH3) Tubing Kit (c/w sample connector)
66485	In-line Hydrophobic Filter Assy.
66484	Hydrophobic Filter (use with 66485)
66546	Neck & Chest Harness with Clip
66017	Probe Assembly
66545	Ball Float
66349	Carry Case
66165	Inlet Nozzle Filter Key (1.5mm. A/F)

Part Number	Description
66166	Battery / Sensor Grille Key (2mm. A/F)
66167	Instrument Key
66083	Sensor Hydrophobic Filter
66084	Sample Inlet Filter
66210	Alkaline (Drycell) Battery Pack
66056	Long Duration Rechargeable (NiMH) Battery Pack
66335	Fast Charge Rechargeable (NiMH) Battery Pack
66094	User Handbook
66203	Configuration and Field Calibration Instruction Manual CD-ROM

Standard Chargers

Part Number	Description
66140	Std. Charger c/w Universal Plug
66200	5-way Std. Charger c/w Universal Plug
66207	10-way Std. Charger c/w Universal Plug
66206	12v / 24v Vehicle Charger Lead

Fast Chargers

Part Number	Description
66513	Fast Charger c/w Universal Plug
66516	10-way Fast Charger (Master Unit) c/w Universal Plug
66514	10-way Fast Charger (Slave Unit). Maximum 9 units per set-up

66510	Fast Charger c/w Data Download Communications Pack
66511	Fast Charger c/w Set-up Communications Pack

Communication Options

Part Number	**Description**
66208	Data Downloading Package c/w CD-ROM, Communications Adaptor & User Instructions
66300	Data Downloading Package c/w Charger (Universal Plug)
66445	V!SACAL (Calibration) Package c/w CD-ROM, Communications Adaptor & User Instructions
66448	V!SACAL (Calibration) Package c/w Charger (Universal Plug)
66500	Data Downloading & V!SACAL Dual Package c/w 2 x CD-ROM, Communications Adaptor & User Instructions
66501	Data Downloading & V!SACAL Dual Package c/w Charger (Universal Plug)
66209	USB Adaptor - can be used for above items.

Note: The Interface Adaptor replaces the battery pack while calibrating or downloading data from the instrument, therefore, a standard charger is required to power the instrument. If a charger is required, order as appropriate from list.

7

ADDITIONAL INFORMATION

7.1 TRAINING

Training courses are available on all GMI products. Contact GMI Marketing Department for further details:

Tel: +44 (0) 141 812 3211

Fax: +44 (0) 141 812 7820

e-mail: sales@gmiuk.com

7.2 WORLD WIDE WEB

Visit GMI web site at www.gmiuk.com

A

OPERATING INSTRUCTIONS

The following multi-language instructions provide the user with a quick operation guide for the . .

V!SA (4-Gas) instrument.

Each language and pages reference is as follows:

CHECKLIST

1. Check the instrument has no obvious faults.
2. Check accessories.
3. Read and understand handbook before use.
4. Switch ON
5. Check battery levels.
6. Check “ZERO” in fresh air.

SAFETY

- The instrument must be regularly serviced and calibrated by fully trained personnel in a safe area.
- The rechargeable battery pack must only be recharged in a safe area.
- Never use a damaged battery pack.
- Make sure that the battery pack is fitted correctly before use.
- Never expose the battery pack or instrument to extreme heat.
- Only GMI replacement parts should be used.
- If the instrument detects gas, follow your own organisation’s procedures and operational guidelines.
- Gas can be dangerous and care should always be taken in its use.
- The V!SA instrument is certified as follows:

ATEX Ex II 1 G EEx ia IIB T3;	Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3
ATEX Ex II 2 G EEx ia d IIC T3;	Sira 05 ATEX 2295
ATEX Ex II 2 G EEx ia d IIC T4.	EEx ia d IIC T3 or T4

CLASSIFIED UL 913 Class I, Groups A, B, C and D

0038/YY Marine Equipment Directive (Module B&E)

Any right of claim relating to product liability or consequential damage to any third party against GMI is removed if the warnings are not observed.

AREAS OF USE

Exposure to certain chemicals can result in a loss of sensitivity of the flammable sensor. Where such environments are known or suspected it is recommended that more frequent response checks are carried out. The chemical compounds that can cause loss of sensitivity include Silicones, Lead, Halogens and Sulphur. Do not use instrument in potentially hazardous atmospheres containing greater than 21% Oxygen.

FAULT ALARMS

'LOW BATTERY' Displayed intermittently when approximately 30 minutes operating time remains. The audible alarm sounds, once every two seconds, and the Red LED's flash.

Note: Both audible and visual gas alarms continue to operate after the low battery warning message appears.

'BAT FAULT' Displayed constantly when approximately three minutes operating time remains. The audible alarm sounds continuously and the Red LED's illuminate constantly. After three minutes the instrument automatically switches off.

'CAL REQUIRED' This warning flag will be displayed during warm-up if the instrument has detected a fault in the calibration memory during start-up and is unable to continue without re-calibration. The audible alarm and the Red LED's are also activated. Switch off immediately then follow appropriate action required by your company for calibration.

'CAL EXPIRED' This warning flag will flash on the display every 30 seconds if calibration expiry date has been exceeded. The audible alarm and Red LED's are also activated, during start-up only.

'ZERO FAULT' and flashing symbol Appears after warm-up if the instrument is switched on in the presence of gas or the instrument has been unable to zero all sensors correctly. The audible alarm sounds, once every two seconds, and the Red LED's flash, at start-up only. The instrument can however still be used to detect and alarm on the other sensor(s) fitted.

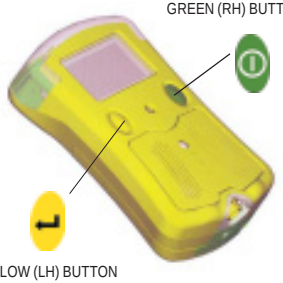
1) If a spanner symbol appears above gas type, then the sensor requires replacement or an electrical fault exists. Return instrument to an approved Service / Repair facility.

2) If a flashing spanner symbol appears alternating with a zero reading, apply test gas for two minutes to allow the display to return to zero then switch instrument Off and On again. If fault remains, return instrument to an approved Service / Repair facility.

3) If a flashing spanner symbol appears alternating with a gas value, leave instrument on for 30 to 60 minutes then switch instrument Off and On again. If fault remains, return instrument to an approved Service / Repair facility.

'FLOW FAULT' (Pumped Instruments) If the rotating pump symbol changes to , an audible alarm and the Red LED's are activated, indicating a sample fault or flow fail. Check sample line, sample filter or probe for blockage, if applicable. Clear blockage then restart the pump by a press and hold of the green (RH) button .

OPERATION



Switch ON

Press and Hold green (RH) button to switch instrument ON and initiate warm-up cycle.

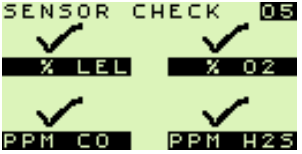
During warm-up, the instrument display identifies model, serial number, software version and battery status information:

Battery status bargraph indicates Full (shown), 75%, 50% and 25%

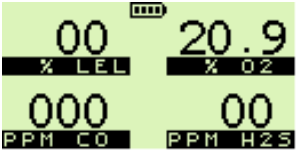
This display is followed by Calibration Due date. If expired, press and Hold green (RH) button , to acknowledge.

This action cancels audible / visual alarm and continues with sensor check display sequence.

If sensors are working OK and have been zeroed correctly, the 'Sensor Check' screen is displayed.



Followed by the normal operating screen, as shown:



Note: If a sensor fails zero check, the audible / visual alarm activates and a spanner symbol is displayed above faulty sensor gas type. To acknowledge this alarm, press green (RH) button .

Display Backlight On / Off

Press green (RH) button once to switch screen backlight on. It remains on for 20 seconds then automatically switches off.

Alarms Reset / Acknowledge

Once in a safe gas free area, or the gas reading has returned within preset limits, press and hold green (RH) button to silence / mute the alarm sounder and extinguish gas LED's.

View Max / Min Recorded Values Since Switch On

While normal operating screen is displayed, press green (RH) button once to switch screen backlight on. While screen backlight is on, press green (RH) button again to view max values. Press green (RH) button again to view min values.

To remove readings from memory, press and hold green (RH) button for two (2) seconds if the instrument is clear of all alarms. This will return instrument to normal operating display.

Remote Sampling (pumped instruments)

Press and hold green (RH) button to start pump at low speed (assisted diffusion for reactive gases). Press and hold green (RH) button again and the pump will run at normal speed (for remote sampling).

When the pump is running, a pump symbol  rotates in the display.

Switch OFF

Press and hold both yellow Left Hand (LH) button and green (RH) button, for 3 seconds, to switch instrument Off.

Vérifications

1. Vérifier que l'appareil n'a pas de défauts évidents
2. Vérifier les accessoires
3. Lire et assimiler le mode d'emploi
4. Démarrer l'appareil
5. Vérifier le niveau des piles ou accus
6. Vérifier les zéro « hors gaz »

Sécurité

- L'appareil doit être régulièrement entretenu et étalonné par du personnel compétent et dans une zone « hors gaz »
- Alimentation: Les piles alcalines ou les packs rechargeables* doivent être échangées (*ou rechargés) dans une zone saine et installés correctement. Ne jamais utiliser de batteries endommagées ou les exposer à une chaleur extrême.
- Seules les pièces d'origine GMI doivent être utilisées.
- Si l'appareil détecte du gaz, suivez les procédures propres à votre entreprise.
- Le gaz peut être dangereux, des précautions doivent être prises lors de son utilisation.
- Le VISA est certifié:

ATEX ⟨Ex⟩ II 1 G EEx ia IIB T3;	Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3
ATEX ⟨Ex⟩ II 2 G EEx ia d IIC T3;	Sira 05 ATEX 2295
ATEX ⟨Ex⟩ II 2 G EEx ia d IIC T4.	EEx ia d IIC T3 or T4

CLASSIFIED UL 913 Class I, Groups A, B, C and D

0038/YY Marine Equipment Directive (Module B&E)

Aucun droit de réclamation relatif à la fiabilité du produit ou aux conséquences pour une 3ème partie ne peut être retenu si ces avertissements n'ont pas été respectés.

Zone d'utilisation

L'exposition à certains produits chimiques peut occasionner une perte de sensibilité du capteur inflammable. Quand ce type d'environnement est connu ou suspecté, il est recommandé que des vérifications de sensibilité soit faites plus souvent. Les constituants chimiques qui peuvent causer une perte de sensibilité incluent les silicones, plombs, Halogènes et sulfures. Ne pas utiliser l'appareil dans des atmosphères contenant plus de 21% d'oxygène.

Alarmes de défaut

'LOW BATTERY' S'affiche de manière intermittente quand il reste environ 30 minutes de fonctionnement. L'alarme sonore s'active toutes les 2 secondes et les LED rouges s'illuminent.

Note: L'alarme sonore et visuelle continue de fonctionner après l'apparition du message de niveau bas des batteries.

'BAT FAULT' S'affiche de façon permanente quand il reste environ 3 minutes de fonctionnement. L'alarme sonore s'active en permanence et les LED rouges s'illuminent en permanence. Après 3 minutes, l'appareil s'arrête automatiquement.

'CAL REQUIRED' Ce message d'alerte sera affiché pendant le démarrage, si l'appareil a détecté une erreur dans la mémoire d'étalonnage et qu'il est impossible de continuer sans ré-étalonnage. L'alarme sonore et les LED rouges sont aussi activées. Arrêtez l'appareil immédiatement et suivez la procédure d'étalonnage de votre entreprise pour l'étalonnage.

'CAL EXPIRED' Ce message d'alerte apparaîtra sur l'écran toutes les 30 secondes, si l'échéance de la date d'étalonnage a été atteinte ou dépassée. L'alarme sonore et les LED rouges sont aussi activées, pendant le démarrage uniquement.

'ZERO FAULT' et le symbole apparaissent après le démarrage si l'appareil est démarré en présence de gaz ou si l'appareil est incapable de mettre à zéro les capteurs. L'alarme sonore s'active toutes les 2 secondes et les LED rouges sont aussi activées, pendant le démarrage uniquement. L'appareil peut cependant être utilisé pour détecter une alarme sur les autres gaz fonctionnels.

1) Si un symbole apparaît associé à un gaz particulier, alors le capteur doit être remplacé ou une panne électrique existe. Retourner immédiatement l'appareil à un service de maintenance autorisé.

2) Si un symbole apparaît en alternance avec une lecture à zéro, appliquer le gaz de test pendant 2 minutes pour permettre à l'appareil de retourner au zéro et redémarrer l'appareil. Si le défaut persiste, retourner l'appareil à un service de maintenance autorisé.

3) Si un symbole apparaît avec en alternance avec une valeur de gaz, laissez l'appareil en marche pendant 30 à 60 minutes, puis redémarrer l'appareil. Si le défaut persiste, retourner l'appareil à un service de maintenance autorisé.

'FLOW FAULT' (appareils à pompe) Si le symbole de rotation change pour une alarme sonore et les LED rouges s'activent indiquant un défaut de débit. Vérifier les accessoires et les filtres puis pressez et maintenez le bouton vert pour annuler le défaut.

Fonctionnement

Mise en marche

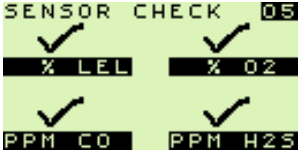
Pressez et maintenir le bouton vert Pour lancer le cycle de démarrage.

Pendant le démarrage, l'affichage indique le modèle, le numéro de série, la version logiciel et l'état de la batterie.

Le barregraphe de batterie indique 100%, 75%, 50% et 25%.

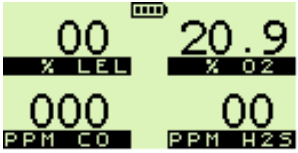
L'affichage est suivi par la date du prochain étalonnage. Si la date est dépassée, pressez et maintenir le bouton vert pour valider.

Cette action annule l'alarme visuelle et sonore et le cycle continue avec la séquence de vérification des capteurs.



Si les capteurs sont OK et qu'ils ont été mis à zéro correctement, l'affichage « Sensor Check » apparaît.

Suivi de l'affichage standard, ci-contre.



Note: Si un capteur présente une anomalie de zéro, l'alarme visuelle et sonore s'active et un symbole est associé au capteur en défaut.

Pour valider cette alarme, pressez le bouton vert .

Eclairage de l'affichage ON/OFF

Pressez le bouton vert, une fois pour activer l'éclairage de l'écran. Il reste actif 20 secondes puis, s'arrête automatiquement.

Acquittement des alarmes

Dés que l'appareil est de nouveau en zone saine, ou que la mesure de gaz est descendue en dessous du seuil d'alarme, pressez et maintenez le bouton vert pour rendre silencieux le signal sonore et éteindre les LED.

Consulter les MAX/MIN des valeurs enregistrées depuis la mise en marche

En fonctionnement normal, pressez lele bouton vert pour activer l'éclairage. Quand l'affichage est éclairé, pressez de nouveau le bouton vert pour afficher le maximum. Pressez de nouveau le bouton vert pour afficher le minimum.

Pour effacer les valeurs de la mémoire, pressez et maintenez le le bouton vert pendant 2 secondes, si il n'y a pas d'alarmes. L'appareil retourne dans son mode de fonctionnement standard.

Prélèvement à distance

Pressez et maintenez le le bouton vert pour démarrer la pompe à basse vitesse (diffusion assistée pour les gaz réactifs). Pressez et maintenez le le bouton vert à nouveau pour passer la pompe en vitesse normale (Prélèvement à distance). Quand la pompe est en marche, le symbole suivant tourne sur l'écran

Arrêt

Pressez et maintenez ensemble, le bouton jaune et le bouton vert, pendant 3 secondes pour arrêter l'appareil.

PRIMA DELL'USO

1. Verificare che lo strumento non abbia dei guasti.
2. Verificare gli accessori.
3. Leggere il manuale d'uso.
4. Accendere lo strumento.
5. Verifica della carica della batteria.
6. Verificare lo "ZERO" in aria pulita.

SICUREZZA

- Lo strumento deve essere regolarmente calibrato in area sicura da personale istruito.
- Ricaricare il pacco batteria solo con il ricaricatore GMI in una area sicura.
- Non utilizzare mai batterie danneggiate.
- Assicurarsi che il pacco batteria sia ben fissato allo strumento.
- Non esporre il pacco batteria o lo strumento ad alta temperatura.
- Utilizzare solamente i ricambi GMI.
- Se lo strumento rivelasse del gas, seguire le procedure organizzative e le indicazioni operative del caso.
- Il gas può essere pericoloso, si dovrebbe sempre averne cura nell'uso.
- Il V!SA è uno strumento certificato con:

ATEX Ex II 1 G EEx ia IIB T3;	Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3
ATEX Ex II 2 G EEx ia d IIC T3;	Sira 05 ATEX 2295
ATEX Ex II 2 G EEx ia d IIC T4.	EEx ia d IIC T3 or T4

CLASSIFIED UL 913 Class I, Groups A, B, C and D

0038/YY Marine Equipment Directive (Module B&E)

Ogni diritto di reclamo, relativo alla responsabilità del prodotto o a danni verso terzi, contro GMI non è da considerarsi valido se non vengono osservate le norme di sicurezza.

AREE D'USO

L'esposizione dello strumento ad agenti chimici condiziona la sensibilità del sensore del gas. Quando tali ambienti sono conosciuti o sospettati è raccomandabile una verifica più frequente della misura. I componenti che possono causare la perdita di sensibilità sono a base di silicone, piombo, alogeno e solfuri. Lo strumento non deve essere usato in una area potenzialmente pericolosa contenente più del 21% di Ossigeno.

ALLARMI DI GUASTO

'LOW BATTERY' E' visualizzato ad intermittenza quando rimangono circa 30 minuti di autonomia della batteria. L'allarme sonoro suona, una ogni due secondi, e il LED rosso lampeggia. Nota: Entrambi gli allarmi del gas, sonoro e visibile, rimangono operativi dopo che il messaggio di carica insufficiente della batteria compare.

'BAT FAULT' E' visualizzato costantemente quando rimangono 3 minuti di autonomia della batteria. L'allarme sonoro e il LED rosso rimangono costantemente attivi. Dopo tre minuti lo strumento si spegne in automatico.

'CAL REQUIRED' Questo messaggio viene visualizzato durante la fase di riscaldamento, lo strumento rileva un guasto nella memoria della calibrazione durante lo start-up e non è abilitato a continuare senza la calibrazione. L'allarme sonoro e luminoso LED rosso rimangono attivi. Spegnere lo strumento e inviarlo al Servizio Assistenza per la calibrazione.

'CAL EXPIRED' Questo messaggio è visualizzato ad intermittenza ogni 30 secondi se la scadenza della calibrazione è stata superata. L'allarme sonoro e luminoso LED rosso sono attivati solamente nella fase di accensione.

'ZERO FAULT' e il simbolo lampaggiante Appare dopo la fase di riscaldamento se lo strumento si trova in presenza di gas oppure gli zeri di tutti i sensori non sono corretti. L'allarme sonoro si attiva, ogni due secondi, e il LED rosso lampeggia, durante l'accensione. Lo strumento tuttavia può ancora essere utilizzato per rilevare del gas in quanto gli allarmi sugli altri sensori rimangono attivi.

1) Se il simbolo della chiave inglese appare sopra un sensore, il sensore richiede la sostituzione o esiste un guasto elettrico. Inviare lo strumento al Servizio Assistenza.

2) Se appare il simbolo della chiave inglese lampeggiante con la lettura dello zero, applicare un gas di test "aria zero" per due minuti per permettere di visualizzare lo zero poi spegnere lo strumento e riaccenderlo. Se il guasto permane, inviare lo strumento al Servizio Assistenza.

3) Se appare il simbolo della chiave inglese lampeggiante alternato con un valore di gas, lasciare lo strumento attivo per 30-60 minuti poi spegnerlo e riaccenderlo. Se il guasto permane, inviare lo strumento al Servizio Assistenza.

'FLOW FAULT' (per strumenti con pompa) Se il simbolo rotante cambia in e l'allarme sonoro e luminoso LED rosso sono attivi, indica un guasto nella linea di campionamento o un guasto sul flusso. Verificare se la linea di campionamento, i filtri o la sonda sono bloccati. Ripulire l'ostruzione e cancellare il guasto tenendo premuto il tasto verde (RH) .

OPERAZIONI

Accensione

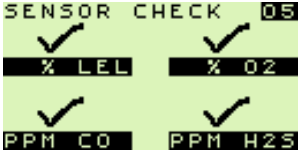
Tenere premuto il pulsante verde (RH) per accendere lo strumento dando inizio al il ciclo di riscaldamento.

Durante la fase di riscaldamento, viene visualizzato il modello, serial number, versione del software e lo stato di carica della batteria:

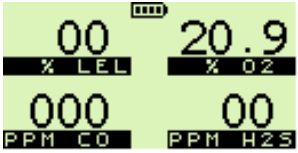
Il bargraph della batteria può indicare: piena carica (vedi figura), 75%, 50% e 25%.

Segue la data della Prossima Calibrazione. Se superata, tenere premuto il pulsante verde (RH) , per acquisire l'informazione. Questo operazione cancella l'allarme sonoro e luminoso,poi lo strumento continua con la sequenza di verifica sensori.

Se i sensori rispondono e hanno lo zero corretto, la verifica dei sensori viene visualizzata sullo schermo come "CHECK SENSOR".



Segue con la normale visualizzazione operativa dello schermo, come in figura:



Nota: Se un sensore fallisce la verifica dello zero, l'allarme sonoro e visivo si abilita e il simbolo della chiave inglese compare sul sensore fallito. Per acqusire questo allarme, premere il pulsante verde (RH) .

Retro Illuminazione del Display On / Off

Premendo una volta il tasto verde (RH)  la retro illuminazione del display si attiva. Rimane illuminato per 20 secondi poi in automatico si disattiva.

Acquisizione e Reset degli Allarmi

Una volta in area sicura, oppure la lettura del gas è rientrata nei limiti, premendo a lungo il pulsante verde (RH)  viene silenziato l'allarme sonoro e spenti i Led luminosi.

Registazione del Valore Massimo/Minimo dopo l'Accensione

In condizioni operative normali, premere il pulsante verde (RH)  una volta per attivare la retro illuminazione. Mentre questa è attiva, premendo ancora il pulsante verde (RH)  viene visualizzato il valore massino di lettura. Premendo ancora il pulsante verde (RH)  viene visualizzato il valore minimo.

Per cancellare la lettura dalla memoria, premere a lungo il pulsante verde(RH)  per due (2) secondi se lo strumento non presenta allarmi attivi. Questo riporterà lo strumento nelle condizioni normali di operatività.

Campionamento a Distanza (strumenti con pompa)

Premendo il pulsante verde (RH)  la pompa si aziona in modalita di bassa aspirazione(aiutando la diffuzione del gas). Premere ancora a lungo il tasto verde (RH)  si aziona la pompa in normale aspirazione (per il campionamento a distanza).

Quando la pompa è attiva , il simbolo  ruoterà sullo schermo.

Spegnimento dello Strumento

Premere insieme il pulsante giallo (LH)  e il pulsante verde (RH)  , tre (3) secondi, per spegnere lo strumento.

Lista de comprobaciones

1. Compruebe que el instrumento no tenga fallos obvios.
2. Compruebe accesorios.
3. Lea y entienda el manual antes de usar.
4. Encienda el equipo.
5. Compruebe el nivel de batería.
6. Compruebe el “Cero” en aire limpio.

Seguridad

- Es necesario un servicio de mantenimiento y de calibración regular por personal competente en una área segura.
- Sólo se deben cargar las baterías en una zona segura.
- Nunca use baterías dañadas.
- Asegúrese que las baterías estén colocadas correctamente antes del uso del equipo.
- Nunca exponga las baterías o el instrumento a temperaturas muy altas.
- Sólo se deben usar recambios de GMI.
- Si el instrumento detecta gas, siga los procedimientos de su organización y las instrucciones de uso del manual.
- El Gas puede ser peligroso y se debe tener cuidado en su uso.
- El instrumento V!SA está certificado:

ATEX Ex II 1 G EEx ia IIB T3;
ATEX Ex II 2 G EEx ia d IIC T3;
ATEX Ex II 2 G EEx ia d IIC T4.

Certification No. DEMKO03
ATEX 133803X EEx ia IIB T3
Sira 05 ATEX 2295
EEx ia d IIC T3 or T4

CLASSIFIED UL 913 Class I, Groups A, B, C y D

0038/YY Marine Equipment Directive (Module B&E)

Cualquier derecho de reclamación referente a la responsabilidad por la fabricación de un producto o del daño consecuente con terceros contra GMI será revocado si el usuario no hace caso a las precauciones de seguridad.

Áreas de uso

La exposición a ciertos productos químicos puede dar lugar a una pérdida de sensibilidad del sensor inflamable. Donde se sepa o se sospeche de tales ambientes, se recomienda que se compruebe más a menudo.
Los compuestos químicos que pueden causar la pérdida de sensibilidad incluyen Siliconas, Plomo, Halógenos y Sulfuros. No utilice el instrumento en atmósferas potencialmente peligrosas que contengan oxígeno con una concentración mayor del 21%.

Alarmas de error

'LOW  BATTERY' (Baja batería) Se muestra de forma intermitente cuando quedan aproximadamente 30 minutos de funcionamiento. La alarma acústica suena, cada dos segundos, y el LED rojo parpadea.

Nota: Ambas alarmas (acústica y visual) siguen operando después de que la señal de aviso de baja batería aparezca en el display.

'BAT  FAULT' (Error de batería) Se muestra en el display cuando quedan aproximadamente tres minutos de funcionamiento. La alarma acústica suena continuamente y el LED rojo se ilumina constantemente. Después de tres minutos el instrumento se apaga automáticamente.

'CAL REQUIRED' (Calibración necesaria) Este aviso se muestra durante el inicio si el instrumento ha detectado un error en la memoria de calibración y no puede continuar sin recalibracion. La alarma acústica y los LED´s rojos se activarán también. El equipo se apaga de inmediato y deberán seguir las instrucciones de su empresa para su calibración.

'CAL EXPIRED' (Calibración caducada) Este aviso parpadea en la pantalla cada 30 segundos si la fecha de calibración ha pasado. La alarma acústica y los LED´s rojos están activados también sólo durante el inicio.

'ZERO FAULT' (Error cero) **y símbolo  parpadeando** Aparece tras el inicio cuando se enciende el equipo en la presencia de un gas o si el instrumento ha sido incapaz de hacer el cero de todos los sensores correctamente. La alarma acústica suena cada dos segundos y los LED´s rojos parpadean, al inicio solamente. Se puede usar, sin embargo, el instrumento para la detección y alarmas con los otros sensores

1. Si aparece un símbolo de la llave de tuercas encima de un tipo de gas, hay que cambiar el sensor o puede que haya un error electrónico. Devuelva el equipo para el servicio de reparación.

2. Si aparece un símbolo de la llave de tuercas intermitente con una lectura de cero, aplique gas durante dos minutos para que la lectura baje a cero y apague y encienda el instrumento de nuevo. Si el error se mantiene, devuelva el equipo para su reparación.

3. Si aparece un símbolo de la llave de tuercas intermitente con una lectura de un valor del gas, deje el instrumento entre 30 y 60 minutos y apague y enciéndalo de nuevo. Si el error se mantiene, devuelva el equipo para su reparación.

'FLOW  FAULT' (Error de caudal) **instrumentos con bomba** Si el símbolo giratorio  de la bomba cambia a  , una alarma acústica suena y los LED´s rojos se activan, indicando un fallo del caudal. Compruebe el tubo de muestra, el filtro o la sonda (si hay) debido a posibles bloqueos. Quite el bloqueo e inicie la bomba de nuevo manteniendo apretado el botón verde  .

Operación

Encendido

Mantenga pulsado el botón (RH) verde para encender el instrumento e iniciar el ciclo de "warm-up".

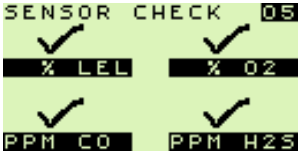
Durante el "warm-up", la pantalla del instrumento muestra el modelo, número de serie, versión de software y estado de la batería:

El gráfico del estado de la batería indica: Llena (indicando), 75%, 50% y 25%

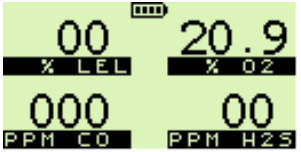
La siguiente pantalla indica la fecha de calibración. Si está caducada, mantenga pulsado el botón verde para confirmar. Esta acción cancela las alarmas acústicas / visuales.

Continúe con la comprobación de los sensores.

Si los sensores están funcionando OK, y el cero ha sido correcto, sale la pantalla "Sensor check".



A continuación del estado normal de operación, se mostrará la pantalla como indica la figura:



Nota: Si un sensor falla en la comprobación del cero, la alarma acústica / visual se activa y aparecerá el símbolo de la llave de tuercas encima del sensor del gas que falle. Para confirmar esta alarma, pulse el botón verde .

Luz de fondo On / Off

Pulse el botón verde  una vez para encender la luz de pantalla. Se enciende por 20 segundos y se apaga automáticamente.

Cancelar /confirmar alarmas

Una vez en una área segura sin gas, o que la lectura del gas haya vuelto dentro de los limites, mantenga pulsado el botón verde  para quitar / silenciar la alarma acústica y extinguir los LED´s.

Ver valores Max/Min desde el inicio

Cuando en la pantalla se muestra la operación normal del equipo, pulse el botón verde  una vez para encender la luz de pantalla. Con la luz encendida, pulse el botón verde  otra vez para ver los valores Max. Pulse el botón verde  otra vez para ver los valores Min. Para borrar las lecturas de la memoria, mantenga pulsado el botón verde  durante dos segundos cuando el instrumento está libre de todas las alarmas. Este devolverá el equipo a la pantalla de funcionamiento normal.

Toma de muestras a distancia (instrumentos con bomba)

Mantenga pulsado el botón verde  para arrancar la bomba a velocidad baja (difusión asistida para gases reactivos). Mantenga pulsado el botón verde  otra vez para tener la bomba a velocidad normal (tomar muestras de distancia). Cuando la bomba está en marcha, aparece un símbolo  rotando en la pantalla.

Apagar

Mantenga pulsado tres segundos el botón amarillo  y el botón verde  para apagar el instrumento.

CHECKLISTA

1. Kontrollera att instrumentet ej har några synliga fel.
2. Kontrollera samtliga tillbehör.
3. Läs och förstå instruktionsboken innan Du använder instrumentet
4. Slå på instrumentet
5. Kontrollera batteriets kapacitet.
6. Kontrollera “Nollan” I frisk luft.

SÄKERHET

- Instrumentet skall regelbundet kontrolleras och kalibreras av kunnig personal I härför avsedd miljö.
- **Batterier:** Laddningsbara batteripaket eller Alkalinebatterier (tillval) måste laddas eller bytas utanför Ex-klassat område och monteras på rätt sätt.

  Använd aldrig skadat batteri. Det får ej heller utsättas för höga temperaturer.
- Endast GMI´s originaldelar får användas.
- Om instrumentet reagerar för gas skall Ert företags normala rutiner följas.
- Gas kan vara farlig och skall alltid hanteras med försiktighet.
- V!SA-instrumentet är klassat enligt

ATEX ⟨Ex⟩ II 1 G EEx ia IIB T3;	Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3
ATEX ⟨Ex⟩ II 2 G EEx ia d IIC T3;	Sira 05 ATEX 2295 EEx ia d IIC T3 or T4
ATEX ⟨Ex⟩ II 2 G EEx ia d IIC T4.	

CLASSIFIED UL 913 Class I, Groups A, B, C and D

0038/YY Marine Equipment Directive (Module B&E)

All rätt till skadestånd med hänvisning till produktansvar eller skada hos tredje man gentemot GMI upphör om denna varning ej beaktas.

ANVÄNDNINGSOMRÅDE

Exponering för vissa kemikalier kan resultera I att sensorn för brännbara gaser skadas. I sådan atmosfär rekommenderas att ofta kontrollera instrumentets känslighet. De kemiska substanser som kan orsaka försämrad reaktion är bl.a. Silikoner, Bly, Halogener and Sulfider. Använd inte instrumentet där oxygenhalten kan överskrida 21vol%. Instrumenthuset är tillverkat av polypropylen och får ej utsättas för eller komma I kontakt med vissa kemikalier. En ytterligare skyddsväska kan vara nödvändigt då instrumentet används i speciella miljöer.

MEDDELANDEN / TECKEN I DISPLAYEN

Olika besked visas I displayen för att indikera instrumentets status.

'LOW  **BATTERY'** blinkar när ca. 30 minuter återstår. Ljud- och ljuslarmet aktiveras varannan sekund.

OBS: Instrumentet mäter och larmar även då denna symbol visas.

'BAT  **FAULT'** visas när ca. 3 minuter drifttid återstår. Ljud- och ljuslarmet är konstant aktiverat. Efter tre minuter stängs instrumentet av automatiskt.

'CAL REQUIRED' Denna ”varningsflagga” syns under uppstart om instrumentet har ett fel i kalibreringsminnet och omöjliggör att instrumentet används innan en ny kalibrering utförts. Ljud- och ljuslarmet är aktiverat. Stäng omedelbart av instrumentet och utför kalibrering enligt Era interna rutiner eller sänd instrumentet för service.

'CAL EXPIRED' Denna ”varningsflagga” blinkar i displayen var 30´e sekund om ”nästa” kalibreringsdatum överskridits. Även larmsignalerna aktiveras dock endast under uppstarten.

'ZERO FAULT' tillsammans med blinkande ”skiftnyckel”  **symbol** för respektive sensor betyder att antingen är gas närvarande eller “nollan” ligger utanför sin gräns för denna sensor eller sensorer. Ljudlarmet aktiveras varannan sekund liksom ljuslarmet vilket dock aktiveras endast under uppstarten. Instrumentet mäter och larmar normalt för övriga sensorer.

1) Om ”skiftnyckeln” visas ovanför gastypen måste denna sensor bytas eller så är det ett fel i elektroniken. Skick instrumentet för service.

2) Om ”skiftnyckeln” visas växlande med ett ”noll-värde” skall ”nolltgas” för denna sensor tillföras instrumentet under 2 minuter för att låta instrumentet stabilisera nollvärdet. Stäng därefter av instrumentet och slå på det igen. Kvarstår felet skall instrumentet skickas för service till auktoriserad serviceverkstad.

3) Om ”skiftnyckeln” visas växlande med ett ”mät-värde”, Låt instrumentet vara på 30-60 minuter varefter det stängs av och sätts på igen. Kvarstår felet skall instrumentet skickas för service till auktoriserad serviceverkstad.

'FLOW  **FAULT' (gäller instrument med inbyggd pump)** Om den roterande pumpsymbolen  försvinner och  det audiovisuella larmet aktiveras suger inte pumpen längre. Kontrollera sondslangen, filtren och sondstången så att de inte är täta. Rengör i förekommande fall och återstarta pumpen genom att trycka och hålla nere den gröna knappen  .

Svensk

BRUKSANVISNING

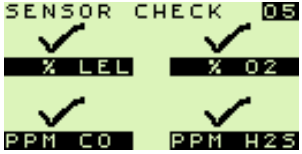
Slå på

Tryck och håll nere ”grön” knapp för att sätta på instrumentet. Detta startar även en automatisk kontroll och uppvärmning av instrumentet.

Under denna period visas alla tecken i displayen och åtföljs av Instrumentets beteckning, mjukvaruversion och batteristatus (Fullt, 75%, 50% och 25%).

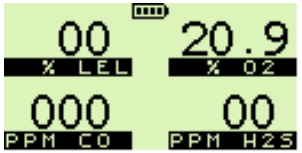
Dessa meddelande följs av datum för nästa kalibrering. Har detta datum överskridits kan detta kvitteras genom att trycka in och hålla den gröna knappen.

Detta kvitterar larmet och därefter följer en kontroll av sensorerna. När sensorerna fungerar som de skall och justeringen mot frisk luft gjorts utan anmärkning visas ”Sensor check”.



Därefter visas aktuella mätvärden enligt bild.

Anm. Om en sensor ej klarar ”noll-justeringen” aktiveras ljud- och ljuslarmet och en ”skiftnyckel” visas för den aktuella sensorn. För att kvittera detta larm – tryck och håll nere den gröna knappen.



Skalbelysning AV / PÅ

Tryck en gång på den gröna knappen  för att tända skalbelysningen.

Skalan blir nu belyst i 20 sek. varefter den automatiskt släcks.

Kvittering av larm

I en gasfri atmosfär eller då gaskoncentrationen understiger inställda larmnivåer återställs larmet med ett tryck och håll på den gröna knappen  .

Avläsa Max.- / Min.-värden

För att avläsa det högsta respektive det lägsta mätvärdet under den tid instrumentet varit påslaget gör man enligt följande. Slå på skalbelysningen genom ett tryck på den gröna knappen  . Tryck ännu en gång på den gröna knappen  för att avläsa det högsta värdet och med ytterligare ett tryck på den gröna knappen  kan man avläsa det lägsta värdet.

För att radera dessa värden ur minnet trycker man ner den gröna knappen  och håller den nere under 2 sek. (instrumentet får ej larma). Härefter återgår instrumentet till normal mätning igen.

Provtagning med sondslang (gäller instrument med pump)

Tryck och håll nere den gröna knappen  för att starta pumpen med låg fart (hjälper instrumentet vid mätning av reaktiva gaser). Tryck och håll nere den gröna knappen  ytterligare en gång för att höja pumphastigheten för normal mätning med sondslang. När pumpen går visas en roterande ”pumpsymbol”  i displayen.

Stäng av

Tryck ner och håll både den gröna  och den gula knappen  i tre sekunder (displayen räknar ner).

Tjek liste

1. Tjek at instrumentet ikke har nogle åbenlyse fejl.
2. Tjek tilbehør.
3. Læs og forstå burger manualen før brug.
4. Tænd instrumentet
5. Tjek batteriet level.
6. Tænd altid og nulstil i frisk luft.

Sikkerhed

- Instrumentet skal regelmæssigt serviceres og kalibreres af autoriseret personale.
- Opladning af batterier skal ske i et sikkert rum.
- Brug aldrig skadet batterier.
- Tjek batteriet sidder rigtigt fast på instrumentet før brug.
- Udsæt aldrig batteri eller instrumentet for ekstrem varme.
- Brug kun GMI reserve dele til instrumentet.
- Hvis instrumentet konstatere gas, følg da de procedure som din organisation har foreskrevet.
- Gas kan være farlig og man bør altid behandle det med forsigtighed. Ethvert krav i forbindelse med produkt ansvar eller følge skade på tredje part imod GMI, er fjernet hvis de ovenstående forskrivelser ikke håndhæves.
- Dette Visa instrument er certificeret ifølge:

ATEX Ex II 1 G EEx ia llB T3;
ATEX Ex II 2 G EEx ia d llC T3;
ATEX Ex II 2 G EEx ia d llC T4.

Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3
Sira 05 ATEX 2295
EEx ia d IIC T3 or T4

CLASSIFIED UL UL 913 Class I, Groups A, B, C and D

0038/YY Marine Equipment Directive (Module B&E)

Bruger områder

Afdækning af bestemte kemikalier kan resultere i tab af følsomheden i LEL sensoren. Hvor disse omgivelser er kendte eller mistænkt, anbefales det at foretage målinger oftere. Den kemiske sammensætning som kan resultere i tab af følsomhed, inkludere silikoner, bly, halogen og svovl. Brug ikke instrumentet ved potentiel farlig atmosfære, der indeholder mere end 21 % ilt.

Alarm pga. fejl

'LOW BATTERY' Vises på displayet når der er ca. 30 minutter bruger tid tilbage. Den hørlige alarm lyder hver andet sekund, og de røde LED pære blinker. Note: Instrumentet virker også under "low battery"

'BAT FAULT' Vises konstant på displayet, når der er ca. 3 minutter bruger tid tilbage. Den hørlige alarm lyder nu konstant, og de røde LED pære lyser også nu konstant. Efter 3 minutter slukkes instrumentet automatisk.

'CAL REQUIRED' Denne advarsel vises på displayet under opvarmning, hvis den finder en fejl i kalibrering, og ikke er i stand til at foresætte uden en ny kalibrering. Den hørlige og synlige alarm er her aktiv. Sluk straks for instrumentet, og følge de retningslinjer jeres firma har vedr. kalibrering.

'CAL EXPIRED' Denne advarsel vises på displayet , og vil blinke hver 30 sekund, hvis kalibrerings datoen er overskredet. Under opstart vil både den hørlige og synlige være aktiv.

'ZERO fejl' og blinkende symboler Fremkommer efter opvarmning hvis instrumentet bliver tænd i nærheden af gas, eller hvis instrumentet ikke kunne nul stille sensorerne. Den hørlige alarm lyder hver anden sekund, og de røde LED pære blinker under opstart. Instrumentet vil stadig fungere på de resterende sensorer.

1) Hvis et skruenøgle symbol fremkommer over gas typen, så skal sensoren enten udskiftes eller der er en elektrisk fejl. Send instrumentet til service.

2) Hvis et skruenøgle symbol blinker, skiftende med nul læsning, anvende test gas i 2 minutter, så målingen vender tilbage til nul. Sluk så instrumentet, og tænd igen. Hvis fejlen gentager sig, send instrumentet til service.

3) Hvis et skruenøgle symbol blinker, skiftende ved gas værdi, lad instrumentet være tændt i 30 til 60 minutter, og sluk og tænd igen instrumentet. Hvis fejlen gentager sig, send instrumentet til service.

'FLOW fejl' (instrumenter med indbygget pumpe) Hvis det roterende pumpe symbol skifer til hørlig alarm og de røde LED pære også lyser, er der tale om suge fejl. Tjek sonde og sonde slangen for blokade. Fjern blokaden og genstart pumpen ved holde den grønne knap nede.

Tænd V!SA

Tryk og hold nede den grønne knap, så startes opvarmnings processen.

Under opvarmning identificeres model, serienummer, software version, batteristatus information:

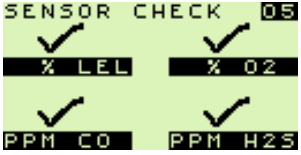
Batteri status graf viser: 100%, 75%, 50% og 25%

Hvis kalibrerings datoen er overskredet, hold grøn knap nede for at accepterer.

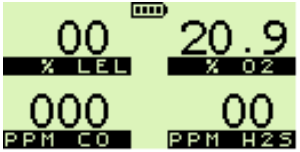
Dette afbryder hørlig og synlig alarm, og forsætter med at tjekke sensorerne.

Hvis sensorerne fungere og er blevet nulstillet korrekt, kommer "Sensor Check" frem på displayet.

Følgende bliver ved normal benyttelse vist:



Bemærk: Hvis en sensor giver fejl under nulstilling, aktiveres hørlig og synlig alarm, og et skruenøgle symbol vises på displayet over den fejlende sensor. For at stoppe alarm tryk på grøn knap.



Display lys On / Off

Tryk på grøn knap en gang. Efter 20 sekunder går lyset automatisk ud igen.

Alarms afbrydelse

Når man er tilbage til et gas frit område, eller målingen er kommet under alarm området, tryk og hold ned den grønne knap nede, så stopper hørlig og synlig alarmer.

Se maksimum/minimum siden instrumentet har været tændt

Under normal brug af instrumentet, tryk en gang på grøn knap for at aktivere display lys. Tryk på grøn knap igen, imens display lyset er tændt, og instrumentet vil vise maksimum måling. Tryk på grøn knap igen for at vise minimum måling.

For at fjerne målingen fra hukommelsen, tryk og hold nede den grønne knap i ca. 2 sekunder. Hvis er ikke er nogle alarmer vil instrumentet nul stille sig.

Pumpe prøve (instrumenter med indbygget pumpe)

Tryk og hold grøn knap nede for at starte pumpen på lav hastighed (bruges ved aktiv udslip). Tryk og hold grøn knap nede igen, og pumpen vil nu køre i normal hastighed. (til f.eks. tank prøve)

Når pumpen kører, vises et pumpe symbol på displayet.

Sluk V!SA

Tryk og hold både gul & grøn knap nede i ca. 3 sekunder.

CHECKLIST

1. Kontroleer of het instrument geen duidelijke gebreken heeft .
2. Kontroleer de accessoires.
3. Lees voor gebruik de handleiding.
4. Apparaat inschakelen
5. Controleer batterij niveau.
6. Controleer “ZERO” (nulstelling) in schone lucht.

VEILIGHEID

- Het instrument moet regelmatig onderhouden en gekalibreerd worden door vakbekwame mensen in een veilige omgeving.
- De oplaadbare batterij mag alleen opgeladen worden in een veilige omgeving.
- Gebruik nooit een beschadigde batterij-unit.
- Overtuig uzelf voor gebruik dat de batterij-unit juist bevestigd is.
- De batterij-unit en het instrument nooit blootstellen aan extreme hitte.
- Gebruik alleen originele GMI-onderdelen.
- Indien het instrument gas detecteert, volg dan de procedures en richtlijnen van uw eigen organisatie.
- Gas kan gevaarlijk zijn en betracht daarom altijd de nodige voorzichtigheid bij het gebruik.
- Het instrument V!SA is als volgt gecertificeerd:

ATEX ⟨Ex⟩ II 1 G EEx ia IIB T3;
ATEX ⟨Ex⟩ II 2 G EEx ia d IIC T3;
ATEX ⟨Ex⟩ II 2 G EEx ia d IIC T4.

Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3
Sira 05 ATEX 2295
EEx ia d IIC T3 or T4

CLASSIFIED UL 913 Klasse I, Groepen A, B, C en D

0038/YY Marine Equipment Directive (Module B&E)

Alle claims aan GMI in relatie tot productaansprakelijkheid of daaruit voortvloeiende schade aan een derde partij worden afgewezen indien waarschuwingen niet in acht genomen worden.

GEBRUIKSOMGEVING

Blootstelling aan bepaalde chemicaliën kan resulteren in verlies aan gevoeligheid van de gassensor. Daar waar zulke omgevingen bekend zijn of vermoed worden is het aan te bevelen om vaker een meetwaarde test uit te voeren.
Chemische stoffen die een verlies aan gevoeligheid kunnen veroorzaken zijn Siliconen, Lood, Halogenen en Zwavel. Gebruik het instrument niet in potentieel gevaarlijke omgevingen die meer dan 21% Zuurstof bevatten.

ALARMERING BIJ STORING

'LOW BATTERY' (batterijcapaciteit te laag) Wordt met tussenpozen weergegeven als er nog ca. 30 minuten bedrijfstijd beschikbaar is. Het geluidsalarm is elke 2 seconden hoorbaar en de Rode LED's knipperen. Opmerking: Zowel het hoor- als zichtbare alarm blijven operationeel nadat de LOW BATTERY indicatie verschijnt.

'BAT FAULT' (batterijstoring) Wordt continu weergegeven als er nog ca. drie minuten gebruikstijd beschikbaar is. Het geluidsalarm is continu hoorbaar en de rode LED's branden continu. Na drie minuten schakelt het instrument zichzelf automatisch uit.

'CAL REQUIRED' (kalibratie vereist) Deze melding wordt tijdens de opstartprocedure weergegeven als het instrument een storing in het kalibratiegeheugen gevonden heeft and niet in staat is om verder te gaan zonder herkalibratie. Het hoorbare alarm en de rode LED's zijn nu ook geactiveerd. Schakel instrument direct uit en volg de procedures voor herkalibratie die bij uw bedrijf vereist zijn.

'CAL EXPIRED' (kalibratie over datum) Deze melding zal elke 30 seconden op het display verschijnen als de kalibratiedatum overschreden is. Het hoorbare alarm en de rode LED's zijn ook reeds geactiveerd gedurende de opstartprocedure alleen.

'ZERO FAULT' (storing in nulstelling) en knipperend symbool

Verschijnt na de opstart procedure als het instrument is opgestart in een omgeving met gas of als het instrument niet in staat is geweest om de nulstelling van alle sensoren correct uit te voeren. Het geluidsalarm is elke 2 seconden hoorbaar en de rode LED's knipperen alleen bij het opstarten. Het instrument kan evenwel nog wel gebruikt worden voor de overige aanwezige sensoren.

1) Indien het steeksleutelsymbool boven de gassoort verschijnt dient de sensor vervangen te worden of is een storing gevonden in het elektrische circuit. Stuur in dit geval het instrument op naar een gecertificeerde service/reparatie instelling(Kamstrup b.v.- Doesburg).

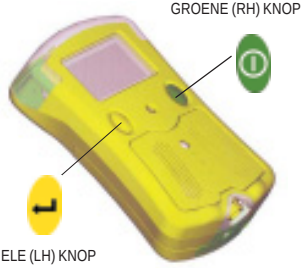
2) Indien het steeksleutelsymbool afwisselend met een nulaflezing verschijnt, voer dan gedurende 2 minuten een testgas toe om het display in staat te stellen naar de nulinstelling te gaan. Schakel daarna het instrument uit en vervolgens weer in. Indien de storing blijft bestaan stuur dan het instrument op naar een gecertificeerde service/reparatie instelling(Kamstrup b.v. – Doesburg)

3) Indien het steeksleutelsymbool afwisselend met een gasmeetwaarde verschijnt laat dan het instrument gedurende 30 tot 60 minuten in bedrijf staan en schakel het instrument daarna uit en vervolgens weer in. Indien de storing blijft bestaan stuur dan het instrument op naar een gecertificeerde service/reparatie instelling(Kamstrup b.v. – Doesburg)

'FLOW FAULT' (stromingsstoring, alleen bij instrumenten met pomp)

Indien het roterende pomp symbool wegvalt en het geluidsalarm en de rode LED's ingeschakeld worden, duidt dit op een monster- of een stromingsstoring. Kontroleer, indien van toepassing, de aanzuigslang, aanzuigfilter en/of probe op verstopping. Verwijder eventuele verstopping en herstart de pomp door groene knop even ingedrukt te houden.

BEDIENING



Inschakelen

Groene knop even ingedrukt houden om instrument in te schakelen en opstart routine te activeren.

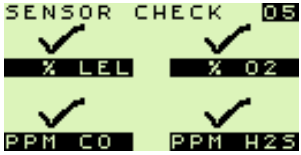
Gedurende het opwarmen zal het display het model, serienummer, software versie en batterij status weergeven.

Batterij statusbalk geeft aan: Vol, 75%, 50% and 25%

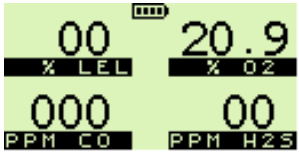
Kalibratie datum. Indien datum verlopen volgt alarmering. Voor bevestiging en uitschakelen van het alarm de groene knop indrukken.

Hierna wordt vervolgt met controle routine en nulstelling van de sensoren.

Op display wordt vervolgens 'Sensor Check' weergegeven, gevolgd door het standaard display indien de sensoren goed werken.



Na het juist opstarten en het standaard display weergegeven wordt zijn de volgende handelingen mogelijk:



Opmerking: Indien voor een sensor geen nulstelling bereikt wordt, zal het alarm ingeschakeld worden en een steeksleutel symbool boven de betreffende sensor verschijnen. Om dit te bevestigen en het alarm uit te schakelen de groene knop indrukken.

Afleesvenster verlichting Aan / Uit

Druk groene knop  eenmalig om verlichting in te schakelen. De verlichting zal gedurende 20 seconden blijven branden waarna automatische uitschakeling volgt.

Alarm Reset / Bevestiging

Indien (weer) in gasvrije omgeving, of wanneer de afgelezen waarde weer binnen de vooraf ingestelde waarden is, de groene knop  ingedrukt houden om alarmsignalen uit te schakelen.

Weergave opgeslagen Max / Min waarden sinds inschakelen

Bij weergave van het standaard display, groene knop  eenmalig indrukken om de verlichting in te schakelen. Bij ingeschakelde verlichting de groene knop  nogmaals indrukken om maximum waarde weer te geven. Nogmaals de groene knop  indrukken om de minimum waarde weer te geven.

Om opgeslagen waarden te verwijderen, de groene knop  2 seconden ingedrukt houden wanneer er geen alarm is. Hierdoor keert het apparaat terug naar zijn standaard actieve display.

Monstername op afstand (alleen voor instrumenten met pomp)

Groene knop ingedrukt houden om pomp op lage capaciteit te starten(diffusie met aanzuighulp bij reactieve gassen). Groene knop  nogmaals indrukken om pomp op normale capaciteit in te schakelen (voor monstername op afstand).

Wanneer de pomp ingeschakeld is zal het pompsymbool  draaiend in het display weergegeven worden.

Uitschakelen

Om het apparaat uit te schakelen de gele  en groene knop  gelijktijdig gedurende 3 seconden ingedrukt houden.

Checkliste

1. Überprüfen Sie das Gasmessgerät auf offensichtliche Fehler.
2. Überprüfen Sie das mitgelieferte Zubehör.
3. Lesen Sie die Bedienungsanleitung, lassen Sie keine Fragen offen.
4. Schalten Sie das Gasmessgerät ein.
5. Überprüfen Sie den Ladezustand des Akkus.
6. Überprüfen Sie den "Nullpunkt" (ZERO) in frischer Luft.

Sicherheitshinweise

- Das Gasmessgerät muss regelmäßig von speziell dafür geschultem Personal in sicherer Umgebung (d.h. in nicht explosionsgefährdeten Bereichen) überprüft und kalibriert werden
- Der Akku darf nur in sicherer Umgebung aufgeladen werden
- Ein defekter Akku ist sofort auszutauschen, der Betrieb mit einem defekten Akku ist nicht zulässig
- Stellen Sie sicher, dass der Akku vor Aufnahme des Messbetriebes korrekt eingebaut wurde
- Setzen Sie das Gasmessgerät und den Akku niemals extremer Wärmeeinwirkung aus
- Als Ersatzteile sind grundsätzlich nur Komponenten von GMI zulässig
- Folgen Sie unbedingt den innerbetrieblichen oder gesetzlichen Vorschriften, sobald das Gasmessgerät eine Gaswarnung generiert
- Das V!SA – Gasmessgerät besitzt folgende Zulassung

ATEX ⟨Ex⟩ II 1 G EEx ia IIB T3;	Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3
ATEX ⟨Ex⟩ II 2 G EEx ia d IIC T3;	Sira 05 ATEX 2295
ATEX ⟨Ex⟩ II 2 G EEx ia d IIC T4.	EEx ia d IIC T3 or T4

CLASSIFIED UL 913 Klasse I, Gruppe A, B, C , D

0038/YY Marine Equipment Directive (Module B&E)

Gase können gefährlich für Mensch und Technik sein, beachten Sie daher unbedingt die entsprechenden Sicherheitsvorschriften Werden die oben aufgeführten Sicherheitshinweise nicht beachtet, so erlischt jeglicher Anspruch gegenüber GMI bezüglich Haftung und Garantie.

Anwendungsbereich

Wird der Sensor für explosionsgefährdete Atmosphäre bestimmten Chemikalien ausgesetzt, so kann dies zum Verlust der Sensorempfindlichkeit führen. Sind solche Umgebungsbedingungen bekannt oder werden diese erwartet, so empfehlen wir, das Gasmessgerät in kurzen Abständen zu überprüfen. Folgende chemische Verbindungen können zum Verlust der Empfindlichkeit führen: Silikone, Blei, Halogene und Schwefel. Generell darf das Gasmessgerät nicht in explosionsgefährdeter Umgebung eingesetzt werden, welche einen Sauerstoffanteil von mehr als 21% enthält.

Alarme

'LOW BATTERY' Durch diesen blinkenden Hinweis wird angezeigt, dass ab diesem Zeitpunkt dass Gasmessgerät nur noch für ca. 30 Minuten

betriebsfähig ist. Gleichzeitig erfolgt alle zwei Sekunden ein akustischer und optischer Alarm (rote LED's blinken). Hinweis: Der akustische sowie auch der optische Gas- Alarm bleiben auch nach der Anzeige des leeren Akkus (der Batterie) erhalten, sofern ein solcher Alarm ausgelöst wurde.

'BAT  **FAULT'** Wechselt das blinkende Akkusymbol in ein statisches Symbol, verbunden mit einem Dauerton und LED- Dauerlicht (Alarm), so stehen Ihnen noch maximal 3 Minuten Betriebszeit zur Verfügung. Nach Ablauf dieser Zeit schaltet sich das Gasmessgerät selbsttätig ab!

'CAL REQUIRED' Erscheint während der Warmlaufphase die Meldung "CALIBRATION REQUIRED" im Display, gleichzeitig mit einem akustischen und optischen Alarmsignal, so wurde ein Fehler im Kalibrierspeicher festgestellt. Die Aufnahme des Messbetriebes ist nun nicht mehr möglich, da dass Gasmessgerät zuerst neu kalibriert werden muss.

'CAL EXPIRED' Wurde das Kalibrierdatum überschritten, so erscheint während des Normalbetriebes diese Meldung. Alle dreißig Sekunden blinkt dieser Hinweis um den Anwender auf die notwendige neue Kalibration aufmerksam zu machen.

'ZERO FAULT' und blinkendes  rscheint nach Ablauf der Einschaltphase das blinkende Symbol des Schraubenschlüssels sowie die Meldung „ZERO FAULT", so kann dies zwei Ursachen haben: Das Gasmessgerät wurde in einer Umgebung eingeschaltet, in der sich bereits ein Gas befindet, oder für einen (oder mehrere Sensoren) konnte der Nullpunktabgleich nicht durchgeführt werden. Alle zwei Sekunden ertönt der akustische Alarm, zusätzlich blinken die roten LED`s, um diesen Fehler zu melden.
Bitte beachten Sie: Das Gasmessgerät kann mit den noch funktionsfähigen Sensoren weiter messen und auch Alarme ausgeben.

1) Der defekte Sensor wird durch den blinkenden Schraubenschlüssel gekennzeichnet, dies erfolgt abwechselnd mit der falschen (numerischen) Anzeige des Sensors. Senden Sie das Gasmessgerät zurück zur Überprüfung und Reparatur.

2) Erscheint das blinkende Symbol des Schraubenschlüssels über einem Sensor abwechselnd mit einer Null- Anzeige, so beaufschlagen Sie das Gasmessgerät für ca. zwei Minuten mit einem Testgas. Hierdurch sollte die Anzeige (der Sensor) abgeglichen sein. Schalten Sie dass Gasmessgerät nach Ablauf dieser Zeit aus und wieder ein. Besteht der Fehler weiterhin, so senden Sie das Gasmessgerät zur Überprüfung zurück.

3) Erscheint das blinkende Symbol des Schraubenschlüssels über einem Sensor abwechselnd mit einem Gaswert, so lassen Sie das Gasmessgerät für ca. 30 bis 60 Minuten eingeschaltet. Schalten Sie dass Gasmessgerät nach Ablauf dieser Zeit aus und wieder ein. Besteht der Fehler weiterhin, so senden Sie das Gasmessgerät zur Überprüfung zurück.

'FLOW  **FAULT'** (nur bei Geräten mit Pumpe) Erscheint das rotierende Pumpen symbol  und wechselt auf  so liegt ein Defekt an der Pumpe vor oder der Durch fluss ist blockiert. Gleichzeitig ertönt der akustische Alarm und zusätzlich blinken die roten LED's, um diesen Fehler zu melden. Prüfen Sie die angeschlossene Probenleitung sowie den Filter auf Verstopfung. Reinigen Sie ggf. Filter und Leitung und starten Sie die Pumpe erneut, indem Sie die grüne  Taste betätigen. Besteht der Fehler weiterhin, so senden Sie das Gasmessgerät zur Überprüfung zurück.

Bedienungshinweise

EINSCHALTEN

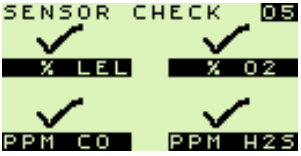
Drücken Sie die grüne Taste auf der rechten Seite des Gasmessgerätes und halten diese für eine Sekunde gedrückt, um die Initialisierung zu starten.

Während der Warmlaufphase werden das Modell, die Serienummer, die Softwareversion und der Akkuladezustand (Batteriezustand) angezeigt:

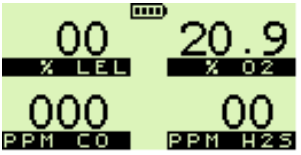
Der Akkuladezustand (Batterie) wird mittels Symbol dargestellt. Die im Akkusymbol dargestellte Balkenanzeige kann verschiedene Ladezustände anzeigen: Voll, 75%, 50% und 25%.

Auf dem Display erscheint nun der nächste Termin für eine Kalibrierung. Wurde der Fälligkeitstermin der notwendigen Kalibrierung überschritten, so drücken Sie jetzt noch einmal die grüne Taste und halten diese gedrückt, um diese Meldung zu bestätigen und den akustischen und optischen Alarm zu löschen.

Arbeiten die Sensoren ordnungsgemäß und der Nullabgleich konnte durchgeführt werden, so wird im Display 'Sensor Check' angezeigt, anschließend wird die Anzeige für den Normalbetrieb aufgerufen.



Hinweis: Wird während des Nullpunktabgleichs für einen (oder mehrere) Sensor (en) ein Fehler festgestellt, so wird ein akustischer und optischer Alarm generiert, auf dem Display erscheint an der entsprechenden Stelle das Symbol eines Schraubenschlüssels. Drücken Sie jetzt noch einmal die grüne Taste und halten diese



gedrückt, um den Alarm zu bestätigen und den akustischen und optischen Alarm zu löschen.

Displaybeleuchtung Ein- /AusschaltenDisplay Drücken Sie die grüne Taste  , um die Displaybeleuchtung einzuschalten. Bitte beachten Sie, dass die Beleuchtung automatisch nach 20 Sekunden automatisch abgeschaltet wird.

Alarme löschen / Alarme bestätigen Sobald vom Gasmessgerät ein Alarm erkannt wird, so wird ein akustischer und optischer Alarm ausgelöst. Drücken Sie nach Unterschreiten des Grenzwertes oder nachdem Sie sich wieder an frischer Luft befinden die grüne Taste  , um den Alarm abzuschalten. Minimal- und Maximalwerte anzeigen

Drücken Sie während des Normalbetriebes bitte die grüne Taste  , um die Displaybeleuchtung einzuschalten. Drücken Sie jetzt nochmals die grüne Taste  , um die Maximalwerte für alle Sensoren aufzurufen.

Drücken Sie jetzt wiederum die grüne Taste  , um die Minimalwerte für alle Sensoren aufzurufen. Nachdem Sie die Werte notiert haben, können Sie wieder zurück zur Normalanzeige gelangen, indem Sie die grüne Taste für zwei (2) Sekunden gedrückt halten. Bitte beachten Sie, dass gleichzeitig der Min- und Max-Speicher gelöscht wird. Voraussetzung hierfür ist, dass keine Alarme anstehen

Pumpenbetrieb (nur bei Geräten mit eingebauter Pumpe)

Drücken Sie die grüne Taste  und halten Sie diese gedrückt, die Pumpe wird nun mit ihrer geringsten Geschwindigkeit gestartet. Dieser Modus eignet sich zur Unterstützung einer Diffusionsmessung für reaktionsfähige Gase. Drücken Sie nochmals die grüne Taste  und halten diese gedrückt, um die Pumpe mit Normalgeschwindigkeit laufen zu lassen. Dieser Modus ist für die Probennahme über einen Messschlauch oder Messrohre geeignet. Sobald die Pumpe arbeitet, erscheint oben links im Display das quadratische Pumpensymbol  , die Diagonale im Symbol dreht sich entsprechend der Pumpengeschwindigkeit.

Ausschalten Drücken Sie die gelbe Taste  und die grüne Taste  gleichzeitig und halten beide gedrückt. Es wird nun ein Zähler (Countdown) gestartet, auf dem Display wird nun rückwärts von 3 an bis auf 0 gezählt. Halten Sie beide Tasten solange gedrückt, bis dass das Display nichts mehr anzeigt.

ΛΙΣΤΑ ΕΛΕΓΧΟΥ

1. Ελέγχτε το όργανο ώστε να μην υπάρχουν εμφανή ελαττώματα.
2. Ελέγχτε τα εξαρτήματα.
3. Διαβάστε προσεχτικά το εγχειρίδιο πριν από την χρήση.
4. Ανοίξτε το όργανο.
5. Ελέγχτε την κατάσταση των μπαταριών.
6. Ελέγχτε το "ZERO" σε καθαρό αέρα.

ΑΣΦΑΛΕΙΑ

- Το όργανο πρέπει να συντηρείται και να βαθμονομείται τακτικά από πλήρως εκπαιδευμένο προσωπικό, σε ασφαλές περιβάλλον.
- Η επαναφορτιζόμενη μπαταρία πρέπει να φορτίζεται μόνο σε ασφαλές περιβάλλον.
- Μην χρησιμοποιείτε ποτέ κατεστραμμένες μπαταρίες.
  Σιγουρευτείτε ότι ο μπαταρίες έχουν τοποθετηθεί σωστά πριν από τη χρήση.
- Μην εκθέτετε ποτέ τις μπαταρίες ή το όργανο σε υπερβολικά υψηλές θερμοκρασίες.
- Πρέπει να χρησιμοποιούνται μόνο εξαρτήματα της G.M.I για αντικατάσταση των παλιών.
- Εάν το όργανο ανιχνεύσει αέριο, ακολουθείστε τις διαδικασίες και τις οδηγίες λειτουργίας του οικείου οργανισμού σας.
- Τα αέρια μπορεί να είναι επικίνδυνα γι'αυτό πρέπει να χρησιμοποιούνται με προσοχή.
- Το όργανο Visa είναι πιστοποιημένο σαν

ATEX II 1 G EEx ia IIB T3; ATEX II 2 G EEx ia d IIC T3; ATEX II 2 G EEx ia d IIC T4.	Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3 Sira 05 ATEX 2295 EEx ia d IIC T3 or T4

UL 913 Class I, Groups A, B, C and D

0038/YY Marine Equipment Directive (Module B&E)

Κάθε δικαίωμα διεκδίκησης, σχετικά με την παθητικότητα του προϊόντος ή επακόλουθη ζημιά, από οποιαδήποτε τρίτη ομάδα εναντίον της G.M.I, εξαλείφεται εάν οι προειδοποιήσεις δεν τηρούνται.

ΠΕΡΙΟΧΕΣ ΧΡΗΣΗΣ

Έκθεση σε καθορισμένα χημικά μπορεί να καταλήξει σε μείωση της ευαισθησίας του εύφλεκτου αισθητήρα ανίχνευσης. Όπου υπάρχουν ή πιθανολογούνται τέτοιες περιοχές προτείνεται να γίνονται πιο συχνοί έλεγχοι. Τα χημικά στοιχεία που μπορεί να προκαλέσουν μείωση της ευαισθησίας περιλαμβάνουν Σιλικόνη, Μόλυβδο, Αλογόνο και Θείο. Μην χρησιμοποιείτε το όργανο σε ενδεχομένως επικίνδυνο περιβάλλον που περιέχει Οξυγόνο σε ποσοστό μεγαλύτερο του 21%.

ΣΥΝΑΓΕΡΜΟΙ ΣΦΑΛΜΑΤΩΝ

'LOW BATTERY' φαίνεται στην οθόνη περιοδικά όταν παραμένουν περίπου 30 λεπτά λειτουργίας. Ο ακουστικός συναγερμός ακούγεται, μια φορά κάθε δύο δευτερόλεπτα και η κόκκινη ενδεικτική λυχνία αναβοσβήνει. Σημείωση: Τόσο ο οπτικός όσο και ο ακουστικός συναγερμός συνεχίζουν να λειτουργούν μετά από τη στιγμή που θα φανεί το μήνυμα προειδοποίησης «low battery».

'BAT FAULT' φαίνεται μονίμως όταν απομένουν περίπου τρία λεπτά λειτουργίας. Ο ακουστικός συναγερμός ακούγεται συνεχώς και η κόκκινη ενδεικτική λυχνία φωτίζει συνεχώς. Μετά από τρία λεπτά το όργανο κλείνει αυτόματα.

'CAL REQUIRED' Αυτή η προειδοποιητική ένδειξη θα εμφανίζεται στην οθόνη κατά την διάρκεια προθέρμανσης του οργάνου, εάν το όργανο έχει ανιχνεύσει κάποιο σφάλμα στην μνήμη βαθμονόμησης κατά την διάρκεια της εκκίνησης και δεν έχει την δυνατότητα να συνεχίζει να λειτουργεί χωρίς να γίνει βαθμονόμηση. Ο ακουστικός συναγερμός και η κόκκινη ενδεικτική λυχνία είναι επίσης ενεργοποιημένα. Κλείστε αμέσως το όργανο και ακολουθείστε τις κατάλληλες κινήσεις που απαιτούνται από την εταιρία σας για βαθμονόμηση.

'CAL EXPIRED' Αυτή η προειδοποιητική ένδειξη θα αναβοσβήνει στην οθόνη κάθε 30 δευτερόλεπτα εάν η ημερομηνία λήξης της βαθμονόμησης έχει περάσει. Ο ακουστικός συναγερμός και η κόκκινη ενδεικτική λυχνία είναι επίσης ενεργοποιημένα, μόνο κατά την διάρκεια εκκίνησης του οργάνου.

'ZERO FAULT' και η ένδειξη που αναβοσβήνει εμφανίζεται μετά την προθέρμανση του οργάνου εάν η εκκίνηση του οργάνου έχει γίνει σε παρουσία αερίου ή εάν το όργανο δεν έχει την δυνατότητα να μηδενίσει όλους τους αισθητήρες σωστά. Ο ακουστικός συναγερμός ακούγεται, μια φορά κάθε δύο δευτερόλεπτα, και η κόκκινη ενδεικτική λυχνία αναβοσβήνει, μόνο κατά την διάρκεια της εκκίνησης. Το όργανο ωστόσο μπορεί να χρησιμοποιείται για να ανιχνεύσει και να χτυπήσει συναγερμό στους άλλους αισθητήρες που υπάρχουν προσαρμοσμένοι στο όργανο.

1) Εάν εμφανιστεί πάνω από τον τύπο κάποιου συγκεκριμένου αερίου το σύμβολο του κλειδιού, τότε ο αισθητήρας χρειάζεται αντικατάσταση ή υπάρχει κάποιο ηλεκτρικό σφάλμα. Επιστρέψτε το όργανο σε εξουσιοδοτημένο αντιπρόσωπο για επισκευή.

2) Εάν εμφανιστεί το σύμβολο του κλειδιού να αναβοσβήνει εναλλασσόμενο με την ένδειξη μηδενισμού «zero», διοχετεύστε δοκιμαστικό αέριο για δύο λεπτά και αφήστε να μηδενιστεί η κλίμακα στην οθόνη, μετά κλείστε και ανοίξτε το όργανο ξανά. Εάν το σφάλμα παραμένει, επιστρέψτε το όργανο σε εξουσιοδοτημένο αντιπρόσωπο για επισκευή.

3) Εάν εμφανιστεί το σύμβολο του κλειδιού να αναβοσβήνει εναλλασσόμενο με την τιμή του αερίου, αφήστε το όργανο για 30 με 60 λεπτά μετά κλείστε το και ανοίξτε το ξανά. Εάν το σφάλμα παραμένει, επιστρέψτε το όργανο σε εξουσιοδοτημένο αντιπρόσωπο για επισκευή.

'FLOW FAULT' (σε όργανα με αντλία) Εάν το περιστρεφόμενο σύμβολο της αντλίας αλλάξει σε , ο ακουστικός συναγερμός και η κόκκινη ενδεικτική λυχνία είναι ενεργοποιημένα, δηλώνοντας σφάλμα στο δείγμα ή ανεπάρκεια στην ροή του δείγματος. Κάντε έλεγχο στην σωλήνα ροής του δείγματος, στο φίλτρο του δείγματος ή στον ακροσωλήνα για κάποιο μπλοκάρισμα, εάν αυτά είναι εφαρμόσιμα. Καθαρίστε τα τυχόν εμπόδια και κάντε επανεκκίνηση στην αντλία πατώντας και κρατώντας πατημένο το πράσινο πλήκτρο (RH) .

ΛΕΙΤΟΥΡΓΙΑ

Άνοιγμα

Πατήστε και κρατήστε το πράσινο (RH) πλήκτρο για να ανοίξει το όργανο και να ξεκινήσει ο κύκλος προθέρμανσης του.

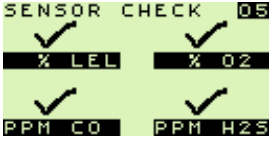
Κατά την διάρκεια της προθέρμανσης, στην οθόνη του οργάνου αναγνωρίζεται το μοντέλο, ο αριθμός σειράς, η έκδοση του λογισμικού και πληροφορίες για την κατάσταση της μπαταρίας:

Το γράφημα της κατάστασης της μπαταρίας δηλώνει γεμάτο (όπως φαίνεται), 75%, 50% και 25%

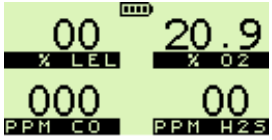
Μετά από αυτό στην οθόνη φαίνεται η ημερομηνία λήξης της βαθμονόμησης. Εάν έχει λήξει, κρατήστε πατημένο το πράσινο (RH) πλήκτρο, για επιβεβαίωση.

Αυτή η ενέργεια ακυρώνει τον οπτικό και ακουστικό συναγερμό και συνεχίζει με τον έλεγχο των αισθητήρων που φαίνονται στην οθόνη διαδοχικά.

Εάν οι αισθητήρες λειτουργούν κανονικά και έχουν μηδενιστεί σωστά, το μήνυμα 'Sensor Check' φαίνεται στην οθόνη.



Ακολουθεί η κανονική κατάσταση λειτουργίας στην οθόνη όπως φαίνεται:



Σημείωση: Εάν κάποιος αισθητήρας αποτύχει στον μηδενισμό, οπτικός και ακουστικός συναγερμός ενεργοποιείται

και το σύμβολο του κλειδιού φαίνεται στην οθόνη πάνω από τον ελαττωματικό αισθητήρα. Για να αγνοήσετε αυτόν το συναγερμό,

πατήστε το πράσινο (RH) πλήκτρο

Εσωτερικό φως οθόνης ενεργοποίηση (On) / απενεργοποίηση (Off)

Πατήστε το πράσινο (RH) πλήκτρο μια φορά για να ενεργοποιήσετε το εσωτερικό φως. Παραμένει ενεργοποιημένο για 20 δευτερόλεπτα και μετά απενεργοποιείται αυτόματα.

Εκκαθάριση συναγερμών/ Επιβεβαίωση

Σε ασφαλές από αέρια περιοχή, ή όταν η ένδειξη του αερίου έχει επανέλθει στα επιτρεπτά όρια, κρατήστε πατημένο το πράσινο (RH) πλήκτρο για να σταματήσει ο ήχος του συναγερμού και να σβήσει η ενδεικτική λυχνία του συγκεκριμένου αερίου.

Απεικόνιση μέγιστου (Max) / ελάχιστου (Min) των καταγεγραμμένων μετρήσεων από την ενεργοποίηση του οργάνου

Όταν φαίνεται στην οθόνη η κανονική κατάσταση λειτουργίας, πατήστε το πράσινο (RH) πλήκτρο μια φορά για να ενεργοποιήσετε το εσωτερικό φως της οθόνης. Όταν ενεργοποιηθεί το εσωτερικό φως της οθόνης, πατήστε το πράσινο (RH) πλήκτρο ξανά για να απεικονιστούν οι μέγιστες μετρήσεις. Πατήστε το πράσινο (RH) πλήκτρο ξανά για να απεικονιστούν οι ελάχιστες μετρήσεις.

Για να αφαιρεθούν οι μετρήσεις από την μνήμη του οργάνου, κρατήστε πατημένο το πράσινο (RH) πλήκτρο για δύο (2) δευτερόλεπτα εάν το όργανο είναι καθαρό από συναγερμούς. Αυτό θα επαναφέρει την οθόνη στην κανονική κατάσταση λειτουργίας της.

Δειγματοληψία εξ αποστάσεως (όργανα με αντλία)

Κρατήστε πατημένο το πράσινο (RH) πλήκτρο για να ενεργοποιηθεί η αντλία στην χαμηλή ταχύτητα (βοηθητική διάχυση για ανενεργά αέρια).

Κρατήστε πατημένο το πράσινο (RH) πλήκτρο ξανά και η αντλία θα λειτουργεί σε κανονική ταχύτητα (για δειγματοληψία εξ αποστάσεως).

Όταν η αντλία λειτουργεί, το σύμβολο της αντλίας περιστρέφεται στην οθόνη.

Κλείσιμο

Κρατήστε πατημένο τόσο το κίτρινο αριστερό (LH) πλήκτρο όσο και το πράσινο (RH) πλήκτρο, για 3 δευτερόλεπτα, για να κλείσει το όργανο.

РЕГЛАМЕНТ ПРОВЕРКИ

1. Проверьте, нет ли очевидных неисправностей в измерительном устройстве.
2. Проверьте вспомогательные приборы и приспособления.
3. Прочитайте и осмыслите руководство перед пользованием.
4. Включите.
5. Проверьте уровень энергии батареи.
6. Проверьте «НУЛЬ» в свежем воздухе.

БЕЗОПАСНОСТЬ

- Данное измерительное устройство должен регулярно осматривать и калибровать полностью обученный персонал в безопасном месте.
- Перезаряжаемую аккумуляторную батарею следует подзаряжать только в безопасном месте.
- Ни в коем случае нельзя пользоваться поврежденной аккумуляторной батареей.
- Проверьте, чтобы аккумуляторная батарея была правильно установлена перед пользованием.
- Ни в коем случае нельзя подвергать аккумуляторную батарею или измерительное устройство воздействию чрезвычайно высокой температуры.
- Можно использовать только запчасти компании GMI.
- Если данное устройство обнаруживает газ, следуйте порядку действий, которые существуют в вашей организации, а также рекомендациям по эксплуатации.
- Газ может быть опасным, и следует всегда предпринимать необходимые меры предосторожности при пользовании им.
- Измерительное устройство V!SA подтверждено следующими сертификатами:

ATEX II 1 G EEx ia IIB T3; ATEX II 2 G EEx ia d IIC T3; ATEX II 2 G EEx ia d IIC T4.	Certification No. DEMKO03 ATEX 133803X EEx ia IIB T3 Sira 05 ATEX 2295 EEx ia d IIC T3 or T4

UL 913 Class I, Groups A, B, C and D

0038/YY Marine Equipment Directive (Module B&E)

Любое право на рекламацию, связанную с ответственностью производителя за качество выпускаемой продукции или последующим повреждением, нанесенным любой третьей стороне, по отношению к GMI снимается, если не соблюдаются предупреждения.

ОБЛАСТИ ПРИМЕНЕНИЯ

Подверженность воздействию определенных химикатов может привести к потере чувствительности датчика воспламенения. Там, где известно или подозревается присутствие таких условий эксплуатации, рекомендуется более часто проводить проверки срабатывания. В число химических веществ, которые могут вызвать потерю чувствительности, входят силиконы, свинец, галогены и сера. Не используйте измерительное устройство в потенциально опасных атмосферах, содержащих свыше 21% кислорода.

СИГНАЛЫ ОТКАЗА

'LOW BATTERY' (РАЗРЯЖЕННАЯ БАТАРЕЯ) Периодически появляется на экране, когда до конца времени работы остается примерно 30 минут. Через каждые две секунды звучит звуковой сигнал тревоги, и мигает красный СИД.

Примечание: Как звуковые, так и визуальные сигнализаторы появления газа продолжают работать после появления предупреждающего сообщения о разрядке батареи.

'BAT FAULT' (ОТКАЗ БАТ) Постоянно высвечивается на экране, когда до конца времени работы остается примерно три минуты. Звуковой сигнал тревоги звучит непрерывно, и постоянно горит красный СИД. По истечению трех минут измерительное устройство автоматически отключается.

'CAL REQUIRED' (ТРЕБУЕТСЯ КАЛ) Этот флажковый индикатор аварийной сигнализации появляется на экране во время прогрева, если во время запуска данное устройство обнаружило неисправность в памяти калибровки и не может продолжать работу без перекалибровки. Также включаются звуковой сигнал тревоги и красный СИД. Немедленно выключите, а затем выполните соответствующие действия, предусмотренные вашей компанией в отношении калибровки.

'CAL EXPIRED' (ИСТЕК СРОК КАЛ) Этот флажковый индикатор аварийной сигнализации вспыхивает на экране через каждые 30 секунд, если срок действия калибровки истек. Звуковой сигнал тревоги и красный СИД также включаются, но только во время запуска.

'ZERO FAULT' (ОТКАЗ НУЛЯ) и мигающий символ Появляется после прогрева, если измерительное устройство включается в присутствии газа или измерительное устройство не может правильно установить на нуль все датчики. Через каждые две секунды звучит звуковой сигнал тревоги, и мигает красный СИД, но только во время запуска. Измерительное устройство можно, тем не менее, все еще использовать для обнаружения и подачи сигнала тревоги на другом(их) установленном(ых) датчике(ах).

1) Если над типом газа появляется символ гаечного ключа, то тогда требуется заменить датчик, или имеется повреждение в электрической цепи. Верните измерительное устройство одобренной организации по техническому обслуживанию / ремонту.

2) Если мигающий символ гаечного ключа появляется попеременно с нулевым показанием, подавайте в течение двух минут эталонный газ с тем, чтобы экран мог вернуться к нулю, а затем выключите и снова включите измерительное устройство. Если неисправность остается, верните измерительное устройство одобренной организации по техническому обслуживанию / ремонту.

3) Если мигающий символ гаечного ключа появляется попеременно с газовым показателем, оставьте измерительное устройство включенным в течение 30 – 60 минут, а затем выключите и снова включите измерительное устройство.

Если неисправность остается, верните измерительное устройство одобренной организации по техническому обслуживанию / ремонту.

'FLOW FAULT' (ОТКАЗ ПОТОКА) (Нагнетаемые насосом измерительные устройства) Если вращающийся символ насоса меняется на включаются звуковой сигнал тревоги и красный СИД, что указывает на неисправность в отборе проб или отказ потока. Проверьте пробоотборную линию, пробоотборный фильтр или пробоотборник на отсутствие закупорки, если применимо. Устраните закупорку, а затем снова запустите насос путем нажатия и удержания в нажатом положении зеленой кнопки (справа).

РАБОТА

Включение

Нажмите и держите в нажатом положении зеленую кнопку (справа) для того, чтобы включить измерительное устройство и начать режим прогрева.

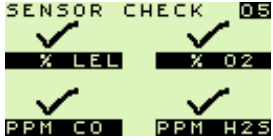
Во время прогрева на экране измерительного устройства появляется информация о модели, серийном номере, версии программного обеспечения и состоянии батареи:

Гистограмма состояния батареи показывает полную зарядку (показана), 75%, 50% и 25%

За этим изображением появляется ожидаемое время калибровки. Если оно истекло, нажмите и держите в нажатом положении зеленую кнопку (справа) для того, чтобы подтвердить.

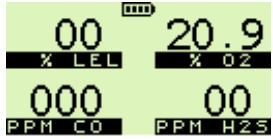
С помощью этого действия отменяется звуковой / визуальный сигнал тревоги, и продолжается последовательность индикации проверки датчиков.

Если датчики работают нормально и правильно установлены на нуль, на экране появляется надпись «Датчики проверены».



За этим следует нормально действующий экран, как показано:

Примечание: Если датчик не проходит проверку на установку нуля, включается звуковой / визуальный сигнал тревоги, и на экране появляется символ гаечного ключа над типом газа неисправного датчика. Чтобы подтвердить этот сигнал, нажмите на зеленую кнопку (справа).



Включение / выключение подсветки экрана

Один раз нажмите на зеленую кнопку (справа)  , чтобы включить подсветку экрана. Она остается включенной в течение 20 секунд, а затем автоматически выключается.

Сброс / подтверждение сигналов тревоги

В свободном от газа безопасном месте, или когда показатель газа вернется в уставки ограничения, нажмите и держите в нажатом положении зеленую кнопку (справа)  , чтобы заставить замолчать / выключить устройство звуковой сигнализации и СИД газа огнетушения.

Просмотр макс. / мин. зарегистрированных величин после включения

Пока изображен нормально работающий экран, один раз нажмите на зеленую кнопку (справа)  , чтобы включить подсветку экрана. При включенной подсветке экрана снова нажмите на зеленую кнопку (справа)  , чтобы посмотреть макс. величины. Еще раз нажмите на зеленую кнопку (справа), чтобы посмотреть мин. величины.

Чтобы изъять показания из памяти, нажмите и держите в нажатом положении в течение двух (2) секунд зеленую кнопку (справа)  , если на измерительном устройстве нет никаких сигналов тревоги. Это вернет измерительное устройство к нормально работающему экрану.

Дистанционный отбор проб (нагнетаемые насосом измерительные устройства)

Нажмите и держите в нажатом положении зеленую кнопку (справа)  , чтобы запустить насос на малой скорости (принудительное рассасывание активных газов). Снова нажмите и держите в нажатом положении зеленую кнопку (справа)  , и насос будет работать с нормальной скоростью (для дистанционного отбора образцов).
Во время работы насоса на экране вращается символ насоса  .

Выключение

Нажмите и держите в нажатом положении в течение 3 секунд желтую кнопку (слева)  и зеленую кнопку (справа)  , чтобы выключить измерительное устройство.

Russian

INDEX

Symbols

A

B

C

GMI Head Office:

Inchinnan Business Park,
Renfrew,
PA4 9RG,
Scotland, U.K.
Telephone +44 (0)141 812 3211
Fax +44 (0)141 812 7820
e-mail: sales@gmiuk.com
http://www.gmiuk.com

USA Head Office (Detcon):

4055 Technology Forest Blvd.,
Suite 100, The Woodlands,
TX 77381,
USA
Telephone 713 559 9290
Toll Free 888 367 4286
Fax 281 292 2860
e-mail: sales@detcon.com

GMI Service & Calibration Division:

25 Cochran Close, Crownhill,
Milton Keynes,
MK8 OAJ,
England, U.K.
Telephone +44 (0)1908 568867
Fax +44 (0)1908 261056
e-mail: service@gmiuk.com