



**GENERAL MONITORS**

# **High Temperature Remote Gas Calibrator**



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**Instruction Manual**

**06-08**

General Monitors reserves the right to change published specifications and designs without prior notice.



**Part No.  
Revision**

**MANRGC  
C/06-08**

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## About This Manual

This manual provides instructions for installing, operating, and maintaining the General Monitors (GM) High Temperature Remote Gas Calibrator (HTRGC). The intended audience includes installation personnel, field service technicians, and other technical staff involved in installing and using a HTRGC.

### Format Conventions

Several format conventions are used throughout this manual for Notes, Cautions, Warnings, User Menus, and MODBUS notations. These conventions are described below.

### Notes, Cautions, and Warnings

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**NOTE:** Notes provide supplementary details such as exception conditions, alternate methods for a task, time saving tips, and references to related information.

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**CAUTION:** These notices describe precautions to prevent hazardous conditions that may damage the equipment.



**WARNING:** These notices describe precautions to prevent hazardous conditions that may cause injury to people working with the equipment.

### Contacting Customer Support

For additional product information not contained in this manual, please contact General Monitors Customer Support. Refer to Section 4.0 for contact information.

# 1.0 Before Installation

## 1.1 System Integrity Verification

General Monitors' mission is to benefit society by providing solutions through industry leading safety products, services and systems that save lives and protect capital resources from the dangers of hazardous flames, gases and vapors.

The safety products you have purchased should be handled carefully and installed, calibrated and maintained in accordance with the respective product instruction manual. Remember these products are for your safety.

To ensure operation at optimum performance, General Monitors recommends that certain maintenance items be performed.

## 1.2 Commissioning Safety Systems

Before power up, verify wiring, terminal connections, and stability of mounting for all integral safety equipment including, but not limited to:

- Power supplies
- Control modules
- Field detection devices
- Signaling / output devices
- Accessories connected to field and signaling devices

After the initial application of power and any factory specified warm-up period to the safety system, verify that all signal outputs, to and from devices and modules, are within the manufacturers' specifications. Initial calibration / calibration checking / testing should be performed according to the manufacturers' recommendations and instructions.

Proper system operation must be verified by performing a full functional test of all component devices of the safety system, ensuring that the proper levels of alarming occur.

Fault/Malfunction circuit operation should be verified.

## 1.3 Periodic Testing/Calibration of Field Devices

Periodic testing/calibrating should be performed per the manufacturers' recommendations and instructions. Testing/Calibrating procedures should include, but not be limited to:

- Verify zero reading
- Apply a known concentration of gas, or a simulated test device provided by the manufacturer

When testing produces results outside of the manufacturers' specifications, re-calibration or repair/replacement of the suspect device(s) should be performed as necessary. Calibration intervals should be independently established through a documented procedure, including a calibration log maintained by plant personnel or third party testing services.



## Special Warning

Through engineering design, testing, manufacturing techniques, and rigid quality control, General Monitors (GM) supplies the finest gas detection systems available. The user must recognize his responsibility for maintaining the gas detection system in operational condition.

The High Temperature Remote Gas Calibrator contains components, which can be damaged by static electricity. Special care must be taken when wiring the system, to ensure that only the connection points are touched.

General Monitors' gas detection systems are primarily safety devices for the protection of personnel and facilities and must be "always ready". With proper installation, calibration, and maintenance, the system provides continuous monitoring of hazardous areas. The user must assume all liability for misuse of General Monitors' gas detection systems.

The system's full two-year warranty will be voided if customer personnel, or third parties, damage the system during repair attempts.

## 2.0 Introduction

### 2.1 Description

The remote calibrator is designed for use with the GM catalytic bead sensor.

The unit is capable of allowing for the calibration and detection of the catalytic bead sensor to methane gas in various winds and temperatures. The unit is used for blocking the ambient air and re-directing the methane or other light hydrocarbon gases to the catalytic bead sensor for sensor calibration in various environments.



**Figure 1: High Temperature Remote Gas Calibrator**

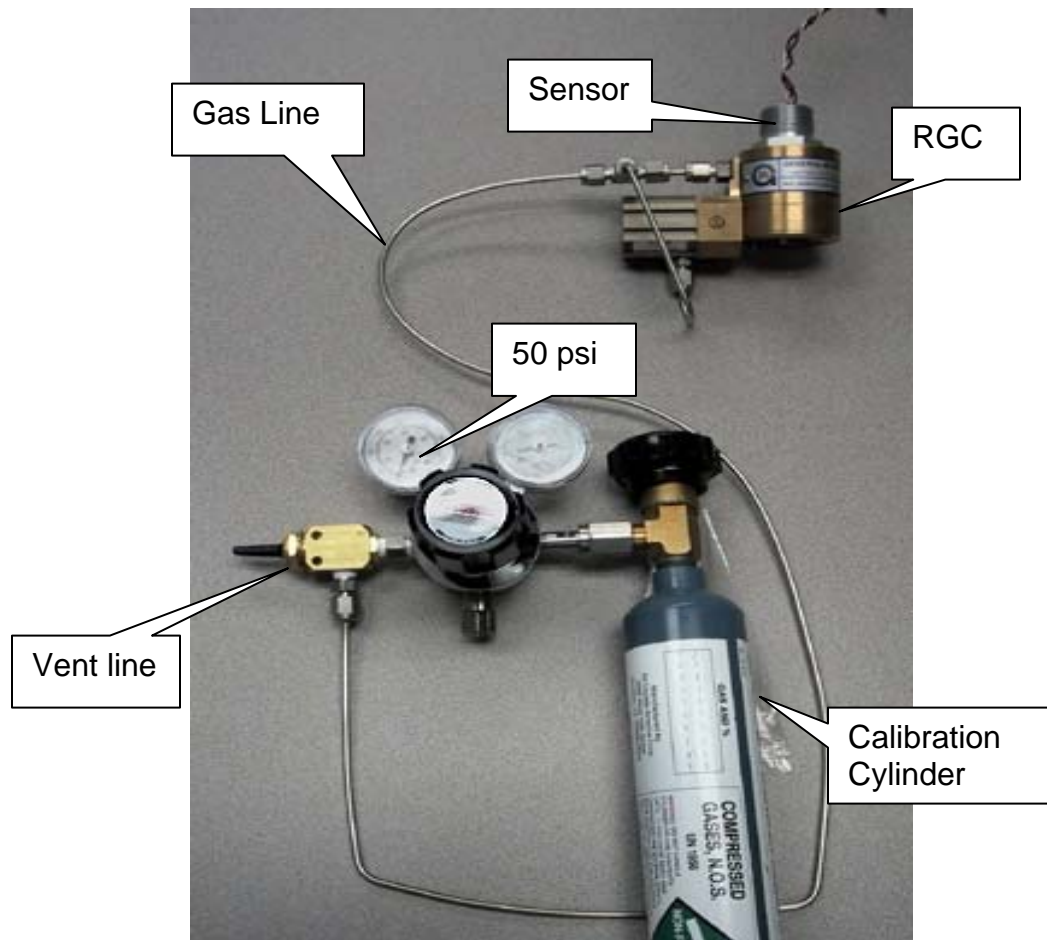
The HTRGC allows for remote calibration of the GM catalytic bead sensor to 50% LEL methane or other light hydrocarbon gas.

## 3.0 Installation

The basic steps in a typical installation are listed in the following table. The installation process may vary depending on the exact site configuration. Only skilled and trained personnel should perform installation and maintenance.

The calibration cylinder (50% LEL methane in air) for the HTRGC will require the following items:

- a. Regulator, which can supply \*50 psi to HTRGC
- b. On/off valve
- c. Vent line





Installation Step	
1	Attach HTRGC to the sensor
2	Attach the gas line to HTRGC
3	Set regulator's outlet pressure to *50 psi
4	Open gas valve. Once gas valve has been opened, check for leaks and ensure that the HTRGC is closed
5	Close gas valve
6	Open the vent line. By opening the vent line the RGC opens
7	Proceed to sensor calibration upon completion of steps 4 & 5

The HTRGC can be 100 feet from the 50% LEL methane cylinder when using 1/8" diameter stainless steel tubing, and a delivery pressure between 45 psi to 55 psi at the HTRGC.

### 3.1 Sensor Calibration using HTRGC

1. Startup instrument in normal calibration mode according to instrument manual.
2. When instrument displays "AC " open gas valve, the RGC unit should close.
3. When instrument displays "CC" close gas valve, vent line and the RGC unit should open.
4. When instrument begins to show % LEL numbers, calibration is done.

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**NOTE:** \*The 50 psi outlet pressure is required for both closing the HTRGC and maintaining the proper gas flow to calibrate the sensor.

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## 4.0 Customer Support

### 4.1 General Monitors' Offices

Area	Phone / Fax / Email
<b>UNITED STATES</b>	
Corporate Office: 26776 Simpatica Circle Lake Forest, CA 92630	Phone: +1-949-581-4464 Fax: +1-949-581-1151 Email: int.@generalmonitors.com
9776 Whithorn Drive Houston, TX 77095	Phone: +1-281-855-6000 Fax: +1-281-855-3290 Email: gmhou@generalmonitors.com
<b>UNITED KINGDOM</b>	
Heather Close Lyme Green Business Park Macclesfield, Cheshire, United Kingdom, SK11 0LR	Phone: +44-1625-619-583 Fax: +44-1625-619-098 Email: info@generalmonitors.co.uk
<b>IRELAND</b>	
Ballybrit Business Park Galway, Republic of Ireland	Phone: +353-91-751175 Fax: +353-91-751317 Email: service@gmil.ie
<b>SINGAPORE</b>	
No. 2 Kallang Pudding Rd. #09-16 Mactech Building Singapore 349307	Phone: +65-6-748-3488 Fax: +65-6-748-1911 Email: genmon@gmpacifica.com.sg
<b>MIDDLE EAST</b>	
LOB12, #G20 P.O. Box 61209 Jebel Ali, Dubai United Arab Emirates	Phone: +971-4-8815751 Fax: +971-4-8817927 Email: gmme@emirates.net.ae

### 4.2 Other Sources of Help

General Monitors provides extensive documentation, white papers, and product literature for the company's complete line of safety products. Many of these documents are available online at the General Monitors website at <http://www.generalmonitors.com>.

## 5.0 Appendix

### 5.1 Warranty

General Monitors warrants the High Temperature Remote Gas Calibrator to be free from defects in workmanship or material under normal use and service, within two (2) years from the date of shipment. General Monitors will repair or replace, without charge, any such defective equipment found to be defective during the warranty period. General Monitors' personnel will make full determination of the nature of, and responsibility for defective equipment. Defective or damaged equipment must be shipped prepaid to General Monitors' plant, or representative from which shipment was made. In all cases, this warranty is limited to the cost of the equipment supplied by General Monitors. The customer will assume all liability for the misuse of this equipment by its employees, or other personnel.

All warranties are contingent upon proper use in the application for which the product was intended. They do not cover products which have been modified, or repaired, without General Monitors' approval, or which have been subjected to neglect, accident, improper installation or application, or on which the original identification marks have been removed, or altered.

Except for the express warranty stated above, General Monitors disclaims all warranties with regard to the products sold, including all implied warranties of merchantability and fitness. The express warranty stated herein are in lieu of all obligations or liabilities, on the part of General Monitors for damages including, but not limited to, consequential damages arising out of/or in connection with, the use or performance of the product.

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**NOTE:** The High Temperature Remote Gas Calibrator is easy to install; however, this manual should be read and understood before attempting to operate the system.

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## 6.0 Specifications

### 6.1 Functional Specifications

The HTRGC allows for remote calibration of the GM catalytic bead sensor to 50% LEL methane or other light hydrocarbon gas.

### 6.2 Environmental Specifications

Operation Temperature: -15° F to 400° F (-26°C to 200°C) When use with high temperature sensor and housing.

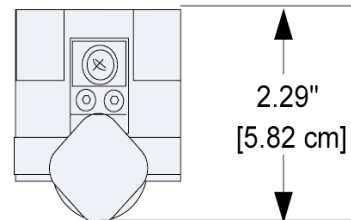
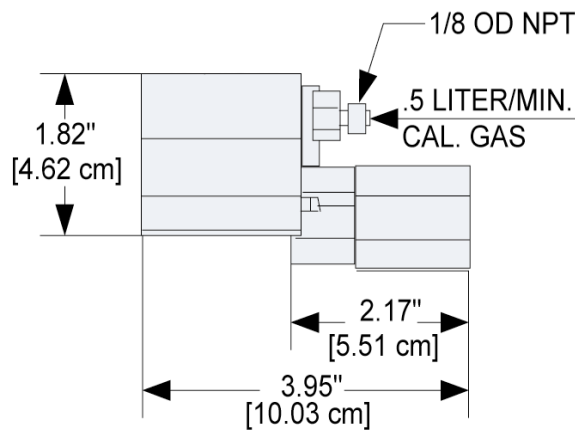
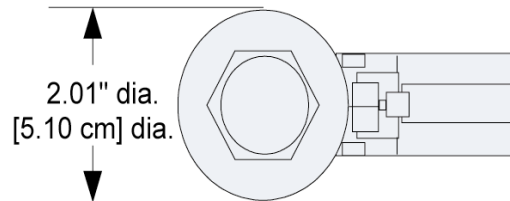
Recommended Storage

Temperature: -20° F to 400° F

Humidity: 5% to 95% (non-condensing)

Air Velocity: 45 mph maximum

### 6.3 Remote Gas Calibrator Dimensions





## ADDENDUM Product Disposal Considerations

This product may contain hazardous and/or toxic substances.

EU Member states shall dispose according to WEEE regulations. For further General Monitors' product WEEE disposal information please visit:

[www.generalmonitors.com/customer\\_support/faq\\_general.html](http://www.generalmonitors.com/customer_support/faq_general.html)

All other countries or states: please dispose of in accordance with existing federal, state and local environmental control regulations.