

O P E R A T I N G M A N U A L



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**GAS-Mate®**

Combustible Gas Leak Detector

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 **INFICON**

# EU DECLARATION OF CONFORMITY



This declaration is issued under the sole responsibility of the manufacturer INFICON. The object of the declaration is to certify that this equipment, designed and manufactured by INFICON, is in conformity with the relevant Community harmonization legislation. It has been constructed in accordance with good engineering practice in safety matters in force in the Community and does not endanger the safety of persons, domestic animals or property when properly installed and maintained and used in applications for which it was made.

**Equipment Description** ..... GAS-Mate® Combustible Gas Leak Detector  
**Model Number** ..... 718-202-Gxx (Applicable to all group numbers)  
**Applicable Directives** ..... 2014/30/EU General EMC  
2011/65/EU RoHS

## Applicable Standards:

**Safety:** EN 61010-1:2010 Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements.

**Emissions:** EN 55011:2009 (+A1:2010)/FCC CFR 47 Part 15: Emission standard for industrial, scientific, and medical (ISM) radio RF equipment (Class B)

**Immunity:** EN 50270:2015 Electromagnetic compatibility –Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen

**RoHS:** EN 50581:2013 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

## CE Implementation Date:

October 6, 2016

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ANY QUESTIONS RELATIVE TO THIS DECLARATION OR TO THE SAFETY OF INFICON'S PRODUCTS SHOULD BE DIRECTED, IN WRITING, TO THE AUTHORIZED REPRESENTATIVE AT THE ABOVE ADDRESS.

The GAS-Mate is Intrinsically Safe for Class I, Division 1, Groups A-D, T4 and rated II 3G Ex nA nL IIC T4 X as per Listing Number E112145 by MET Laboratories, Inc.

To get the best performance from your GAS-Mate, please read this manual carefully before you start using the instrument. If you have any questions or need additional assistance, please call 1-800-344-3304. We'll be happy to help you.



## **WARNING**

This symbol is used to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the instrument.

GAS-Mate® and INFICON® are trademarks of INFICON Inc.

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## Introduction

GAS-Mate is an intrinsically safe instrument designed to detect leaks of a variety of combustible gases and flammable refrigerants. It can be used for many leak testing applications including, but not limited to:

- ♦ Combustion appliances
- ♦ Gas-fired furnaces
- ♦ Gas stoves
- ♦ Hydrocarbon-based (flammable) refrigerants
- ♦ Gas pipelines, valves and meters
- ♦ Heat exchanger testing with combustible gases

GAS-Mate is sensitive to a variety of hydrocarbons and other gases including, but not limited to:

- ♦ Natural Gas
- ♦ Cyclopentane
- ♦ Isobutane (R600a)
- ♦ Methane
- ♦ Propane (R290)
- ♦ Ethane
- ♦ Butane
- ♦ Ammonia
- ♦ Ethanol
- ♦ Hydrogen Forming Gas (95/5)

**NOTE:** GAS-Mate does NOT detect carbon monoxide (CO).

## Specifications

Sensitivity . . . . .	5 PPM Methane (main component of natural gas)
Power Supply . . . . .	Two "D" cell alkaline batteries (3.2 V @ 125 mA)
Battery Life . . . . .	Approximately 25 hours
Operating Temperature Range . . . . .	-4 to +122° F (-20 to +50° C)
Storage Temperature Range . . . . .	-4 to +140° F (-20 to +60° C)
Humidity . . . . .	85% RH NC max.
Pollution Degree . . . . .	2
Overvoltage Category . . . . .	2
Weight (with batteries) . . . . .	1.18 lb (0.53 kg)

## Product Warnings



### **WARNING**

To prevent ignition of a hazardous atmosphere, batteries must only be changed in an area known to be nonhazardous (i.e., completely free of combustible gas).



### **WARNING**

Use only Duracell® MN1300 batteries to maintain intrinsically safe approval.



### **WARNING**

Always check instrument operation with a known combustible leak source before use.



### **WARNING**

GAS-Mate will detect leaks as described below but may not indicate when a hazardous atmosphere is present due to its Auto Zeroing function. Lack of a reading by GAS-Mate should not be taken as an indication that the atmosphere is totally safe.



### **WARNING**

There are no user serviceable parts inside. Do not disassemble GAS-Mate.

DURACELL® is a registered trademark of Duracell, Inc., Bethel, Connecticut.

## Install Two “D” Cell Alkaline Batteries



### **WARNING**

To prevent ignition of a hazardous atmosphere, batteries must only be changed in an area known to be non-hazardous (i.e., free of combustible gas).



### **CAUTION**

Use only Duracell® MN1300 “D” size batteries to maintain intrinsically safe approval.

1. Remove the battery cover by releasing the latch and sliding the cover down and off the handle. You may need a small flat-blade screwdriver to assist with releasing the latch.
2. Install two Duracell® MN1300 “D” size alkaline batteries as shown in [Figure 1](#).

*Figure 1 Properly installed alkaline batteries*



3. Reinstall the battery cover by aligning it in the grooves on the handle and sliding it up the handle until it latches.

**NOTE:** If the Battery indicator flashes or if the Battery and highest signal indicator both flash, the batteries are low and should be replaced.

**NOTE:** Dispose of depleted alkaline batteries according to applicable state and local regulations. In the absence of such regulations, recycle and/or dispose of batteries through voluntary waste recycling programs.

## Using GAS-Mate

1. Long press the Power button to turn GAS-Mate On or Off.  
**NOTE:** GAS-Mate should be turned on in clean air free of combustible gas.
2. Wait for GAS-Mate to warm up, about 30 seconds up to two minutes.  
**NOTE:** GAS-Mate will alarm during warm-up and the highest leak indicator will illuminate. When warm-up is complete, GAS-Mate will beep steadily.
3. If needed, adjust sensitivity by swiping up or down on the touch pad. The leak indicators will illuminate to indicate the sensitivity level.  
**NOTE:** GAS-Mate defaults to maximum sensitivity on startup. It is recommended to use this setting for most applications.
4. Carry GAS-Mate into the area of the suspected leak. An alarm at this time indicates a build-up of combustible gas in the general area.  
**NOTE:** When GAS-Mate detects combustible gas, it will alarm and the leak indicators will illuminate. Faster beeping or a solid alarm indicate a larger concentration of combustible gas.  
**NOTE:** GAS-Mate will automatically zero to the background concentration, indicated by the alarm slowly returning to a steady beep. Once zeroed, only a higher concentration will cause an alarm.
5. Move the probe tip slowly (approximately 1 to 2 in. (2.5 to 5 cm) per second) around suspected leak sites. Position the probe tip as close as possible to the suspected leak site for optimum performance.
6. To confirm a leak, pull the probe away from the suspected leak site and allow the instrument to return to a steady state. Repeat step 5.  
**NOTE:** After exposure to very high concentrations of some gases, the sensor may require several minutes to stabilize and return to normal operation.

## How to Change the Sensor

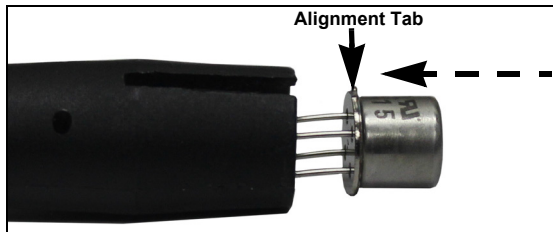
The sensor comes installed in the tip of the GAS-Mate probe. You only need to insert/remove the sensor when it is time to replace it.

**NOTE:** If all leak indicators flash and a steady alarm occurs, the sensor is bad or not installed properly. Ensure the sensor is installed properly or install a new sensor if this occurs.

1. Insert a paper clip or a small screwdriver under the sensor through the slot in the probe tip and carefully slide the sensor out of the end of the probe tip as seen in Figure 2.
2. Remove the new sensor from its packaging.
3. Align the tab on the sensor can with the slot in the probe tip.
4. Carefully slide the sensor into the probe tip. Ensure the wire leads fit into the matching holes in the sensor socket in the probe tip.

**NOTE:** When properly installed, the top of the sensor should be approximately flush with the tip of the probe. It is acceptable if the probe protrudes slightly from the probe tip as long as the sensor is fully seated.

*Figure 2 Replacing the sensor*



## Cleaning and Storage

GAS-Mate's plastic housing can be cleaned with standard household detergent or isopropyl alcohol. Care should be taken to prevent the cleaner from entering the instrument. Since gasoline and other solvents may damage the plastic, protect your INFICON GAS-Mate from contact with these substances.

**NOTE:** Do not allow cleaners or isopropyl alcohol to enter the sensor as it may become contaminated. Replace the sensor if contamination occurs.



# Troubleshooting



## **WARNING**

**Substitution of components may impair intrinsic safety.**

Except for the batteries and the sensor, the internal parts of the GAS-Mate Combustible Gas Leak Detector are not user serviceable. If you experience a problem with your GAS-Mate, follow the steps in the troubleshooting guide below to determine how to remedy your problem. If you cannot remedy the problem, take your GAS-Mate to the nearest wholesaler for warranty evaluation or call our technical support line at 1-800-344-3304.

<b>Problem</b>	<b>Possible Cause</b>	<b>Remedy</b>
GAS-Mate will not power up.	Batteries are worn out.	Replace batteries.
	Batteries are improperly installed.	Refer to <a href="#">Figure 1</a> for proper installation.
Poor sensitivity. GAS-Mate powers up, but does not detect combustible gas.	Unit set to low sensitivity.	Increase sensitivity by swiping up on touch pad.
	Sensor is worn out and needs to be replaced.	Replace sensor.
Alarm sounds continuously, even after a couple minutes of warm-up.	The sensor is not installed properly or is missing.	Ensure sensor leads are straight and inserted in the holes at the base of the sensor socket and the orientation tab is properly aligned in the probe tip. Refer to <a href="#">Figure 2</a> .
	Sensor is worn out and needs to be replaced.	Replace sensor.

## Replacement Parts and Accessories

Replacement parts and accessories for your INFICON GAS-Mate are available through the same dealer you bought the instrument from.

Plastic storage case . . . . . 718-701-G1

Replacement sensor . . . . . 706-700-G1

## Return Authorization Procedure

Defective GAS-Mates, or defective replacement parts and accessories, should be returned to your wholesaler for warranty evaluation. If you have any questions, please contact INFICON at 800-344-3304.

Please do not return your unit directly to the factory without first contacting your wholesaler.

## Warranty and Liability

INFICON warrants your GAS-Mate Combustible Gas Leak Detector to be free from defects of materials or workmanship for three (3) years from the date of purchase. INFICON does not warrant items that deteriorate under normal use, including power cells (batteries) and sensors. In addition, INFICON does not warrant any instrument that has been subjected to misuse, negligence, or accident, or has been repaired or altered by anyone other than INFICON.

INFICON's liability is limited to instruments returned to INFICON, transportation prepaid, not later than thirty (30) days after the warranty period expires, and which INFICON judges to have malfunctioned because of defective materials or workmanship. INFICON's liability is limited to, at its option, repairing or replacing the defective instrument or part.

This warranty is in lieu of all other warranties, expressed or implied, whether of Merchantability or of Fitness for a particular purpose or otherwise. All such other warranties are expressly disclaimed.

INFICON shall have no liability in excess of the price paid to INFICON for the instrument plus return transportation charges prepaid. INFICON shall have no liability for any incidental or consequential damages. All such liabilities are excluded.





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