

# MSA Chemgard® Series

Top-performance, cost-effective, photoacoustic infrared gas monitors



*Because every life has a **purpose...***

# MSA Chemgard Series

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*Top-performance, cost-effective, photoacoustic infrared gas monitors*

## Application

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The Chemgard Photoacoustic Infrared Gas Monitor Series with photoacoustic infrared (IR) sensing technology provides precise, low-cost, high-performance monitoring for many gases such as hydrocarbons, solvents, alcohols, CO<sub>2</sub>, CO, and additional toxic gases.

## Technology

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The Chemgard Gas Monitor is extremely stable and highly selective to the gas of interest, and can operate for months with virtually no zero drift. This monitor offers detectability as low as 0.01 ppm for certain applications.

## Description

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3 enclosure styles allow for installation in explosion-proof, NEMA 4 or rack-mounted configurations.

- Chemgard Monitor NEMA 4 and rack-mount versions provide ease of use and maintenance, with only 4 front-panel pushbuttons for configuration.
- Explosion-proof model is easily configured using a 4-button, wireless IR transmitter that communicates through the front panel window.
- For most installations, gas monitoring begins after simply mounting the instrument, connecting the sample line and powering the unit.
- Instrument typically draws gas sample via internal pump, allowing unit to be mounted in convenient operator locations if areas to be monitored are inaccessible.

## Features

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- Photoacoustic infrared technology
- Easy to install, operate and maintain
- Operates over a wide temperature range
- Can be installed in numerous environments and configurations
- Easy-to-read display shows gas concentration(s) and alarms
- 3 alarm levels with relay output
- UL 2075 approval

## Ranges

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The Chemgard Series of photoacoustic infrared monitors are highly sensitive instruments available in many output ranges:

- 0-10 ppm
- 0-100 ppm
- 0-1000 ppm
- 0-1% by volume
- 0-10% by volume
- 0-100% by volume
- 0-100% LEL

The Chemgard Monitor is factory calibrated, ready to detect a specific gas in the range desired.

Cross-sensitivity to water vapor, a common concern with other types of infrared analyzers, does not occur with this instrument. Proprietary sensing technique determines a sample's amount of water vapor, then subtracts that amount from the gas reading, allowing for extremely stable gas readings and no sensitivity compromise.

## Data Logging

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- The Chemgard Monitor can log data, giving users access to date-stamped information on key events including gas readings, alarms and fault conditions.
- Gas readings can be logged as maximum or average readings over 15-minute or 1-hour time periods.
- Data is accessible through front panel display or RS-232 port.

## Expandability

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The Chemgard Monitor can be expanded to monitor up to 8 locations simply by adding the multipoint sequencer option.

The display indicates the monitored location and the corresponding gas concentration at each location.

## Chemgard Monitor Versions



### NEMA 4 Version

The NEMA 4 version in a rugged metal enclosure has UL 2075 approval, is dust- and water resistant and provides 4 sturdy, wall-mount tabs on the enclosure back for easy installation.

- 1-8 lines are easily accessed on the unit's bottom via standard threaded fittings.
- Electrical wiring access holes are provided on unit's right and left sides.
- NEMA 4 version is easy to use and maintain, with only 4 front panel pushbuttons for instrument configuration.



### Rack-Mount Version

Rack-mount version in standard 19" configuration provides handles on both sides of front panel for easy cabinet extraction.

- Gas sample line(s) and wiring access are provided in rear of unit.
- Rack-mount version is easy to use and maintain, with only 4 front panel pushbuttons to for instrument configuration.



### Explosion-Proof Version

The explosion-proof version is UL-listed and rated for Class I, Div. 1, Groups B, C, and D areas and comes with 4 wall-mount tabs on the back corners of the unit.

- Explosion-proof model is easily configured using 4-button, wireless IR transmitter that communicates through front panel window.
- Window allows for same convenient visual indication of gas concentration and alarm status that exists on additional versions.

### All Versions

- Configure all user functions through front panel
- Monitor 1, 4 or 8 sampling points per instrument
- 3 system alarm levels with relays
- Normally energized trouble and alarm relays for fail-safe operation
- Signal outputs:
  - Sourcing 4-20 mA current output
  - 0-10 VDC signal output
  - RS-232
- Auxiliary input accepts a 4-20 mA analog current signal
- Audible alarm output for standard buzzer or user horn
- Switch connection resets alarms remotely

### Other Options

- Heated enclosure for special applications
- Z-purged enclosure available for special applications
- Built-in auxiliary gas sensor (CO, O<sub>2</sub>, etc.) available using auxiliary input
- Remote relay module provides 3 levels of alarm per monitoring point
- Remote display option

## Ordering Information

Contact your MSA representative to discuss your Chemgard Photoacoustic Infrared Gas Monitor application.

## Specifications

<b>TYPICAL</b>	Performance characteristics subject to change, depending upon gas to be monitored and full-scale range
<b>FOR 0-1000 PPM RANGE</b>	
<b>ACCURACY</b>	0-100 ppm $\pm$ 2 ppm; 100-1000 ppm $\pm$ 10% reading
<b>LINEARITY</b>	0-100 ppm linear, 100-1000 ppm $\pm$ 2% of full scale
<b>SENSITIVITY</b>	2 ppm
<b>RESOLUTION</b>	1 ppm
<b>REPRODUCIBILITY</b>	$\pm$ 2 ppm over 12 months at specified operating conditions
<b>RESPONSE</b>	Updated reading every 7 seconds
<b>OPERATING TEMPERATURE</b>	0-50° C, 32-122° F
<b>TEMPERATURE EFFECT</b>	$\pm$ 0.3% per °C of reading
<b>RELATIVE HUMIDITY</b>	0-99% non-condensing - no effect on reading
<b>SAMPLE FLOW RATE</b>	1.5 liter/minute
<b>MAXIMUM TOTAL TUBING LENGTH</b>	150 feet with $\frac{1}{8}$ " ID 500 feet with $\frac{3}{16}$ " ID
<b>OPERATING POWER REQUIREMENTS</b>	120 VAC $\pm$ 10% at 0.56 amps, or 240 VAC; $\pm$ 10% at 0.3 amps
<b>ALARM RELAYS</b>	3 relays @ 8 amps resistive
<b>APPROVALS</b>	UL 2075
<b>Physical Enclosure Information</b>	
<b>NEMA 4</b>	
<b>DIMENSIONS</b>	18" H x 16" W x 15 $\frac{1}{4}$ " D
<b>WEIGHT</b>	40 lbs.
<b>19" RACK-MOUNT</b>	
<b>DIMENSIONS</b>	7" H x 17 $\frac{1}{2}$ " W x 15 $\frac{1}{4}$ " D
<b>WEIGHT</b>	19 lbs.
<b>EXPLOSION-PROOF (XP)</b>	
<b>DIMENSIONS</b>	19 $\frac{1}{2}$ " H x 19 $\frac{1}{2}$ " W x 9 $\frac{1}{2}$ " D
<b>WEIGHT</b>	100 lbs.

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



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