

# MGS-450 Gas Detector

For Safety Compliance in Mechanical Equipment Rooms, Freezers and Cold Rooms



IP41

Integrated audio /  
visual alarms



IP66

## DESCRIPTION

Bacharach's MGS-450 Gas Detector makes compliance with mechanical equipment rooms and refrigeration safety codes simple and easy, saving time and money on equipment and installation. Using the MGS-400 App, users can intuitively use, commission and maintain their gas detection system without the need for specialty training or tools. Pre-calibrated sensor modules simplify maintenance, take minutes to exchange and do not require the use of calibration gas. The MGS-450 sensor can trigger additional audio-visual alarms and act as a standalone gas detection system, or integrate easily into a BMS / BAS or with Bacharach's optional MGS-408 Gas Detection Controller.

## FEATURES

## BENEFITS

|   |  |
|---|--|
| <b>Rugged Enclosure Options</b>             | Choose from IP41-rated or IP-66 rated enclosures to protect from dust and water ingress in...  |
| <b>Mobile App Interface</b>                 | Quick, easy and intuitive commissioning, configuration and maintenance requires no special training. No tools required to set alarm levels and behavior. |
| <b>Pre-calibrated Sensors</b>               | Fast and easy sensor maintenance. Eliminates need for calibration gas.   |
| <b>Semi-automated Calibration</b>           | Easy calibration process with mobile app. Generate calibration certificates for documentation.   |
| <b>Low Temperature Performance</b>          | Mitigates false alarms and optimizes accuracy in refrigeration applications. Suitable for use in cold rooms and freezers down to -40° F/C.               |
| <b>Digital Communications</b>               | Integrate with local BMS / BAS via Modbus RTU.   |
| <b>Analog Outputs</b>                       | For current or voltage output to legacy systems. 4 to 20 mA, 0 to 5 V, 0 to 10 V, 1 to 5 V, 2 to 10 V  |
| <b>Relay outputs</b>                        | 3 relays available for alarm and fault events to active horn/strobes and ventilation.  |
| <b>Audio &amp; Visual Alarms</b>            | On-board alarm notification supports compliance with ASHRAE 15 / EN 378.   |
| <b>Multiple Cable Entries and Terminals</b> | Quick and easy installation of all wiring; daisy-chain power and digital communications.   |

## HOW TO CONTACT US:

US Customer Service: +1 724 334 5000  
 EU Customer Service: +353 1 284 6388  
 CAN Customer Service: +1 905 882 8985

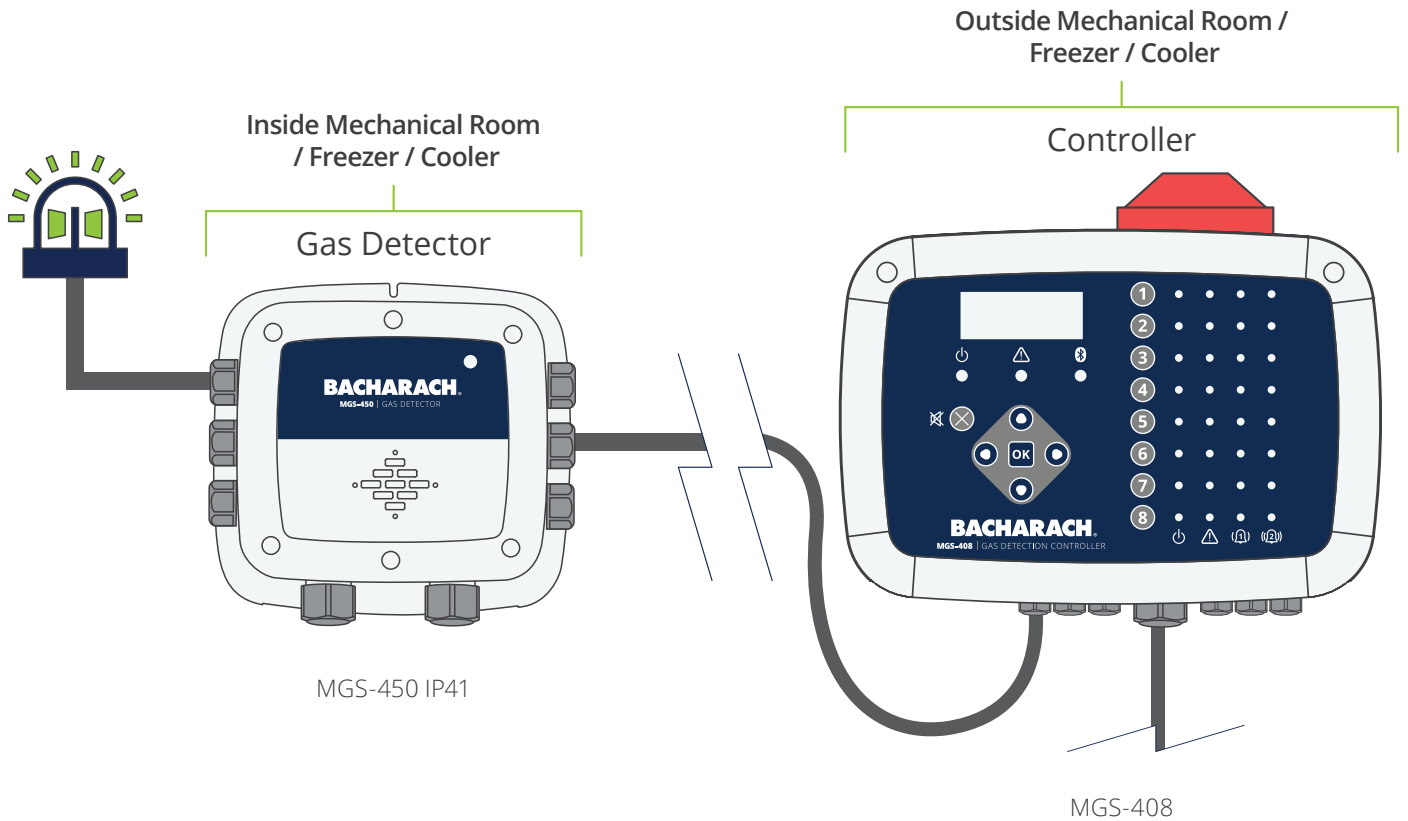
## FOR MORE INFO:

Scan the QR code to learn more about the MGS-450 and other Bacharach products.



| PRODUCT CONFIGURATIONS |   |
|------------------------|---|
| Enclosure Rating       | IP41, IP66  |
| Configurable Relays    | Settings: SPDT, Low (1), High (2), Fault (3)                              |
|                        | Rating: 1 A @ 30 VDC  |
| Digital Communications | Modbus RTU  |
| Analog Output          | Single Configurable: 4 to 20 mA, 0 to 5 V, 0 to 10 V, 1 to 5 V, 2 to 10 V |
| Sensor                 | Integrated  |
| Size                   | IP41: 6.5" × 6.5" × 3.0" (165 × 165 × 77 mm)                              |
|                        | IP66: 6.5" × 6.5" × 3.4" (165 × 165 × 87 mm)                              |
| Weight (Approx)        | 1lb, 1oz (480 g)  |

| SPECIFICATIONS     |   |  |
|--------------------|---|--|
| Status Indicator   | Single Tri-color LED (green, red, orange) |  |
| Audio Alarm        | Buzzer, 72db @ 10cm                       |  |
| Power              | 24V AC or DC (auto-selecting), 4W (max)   |  |
| Approvals          | CE, UL / CSA / IEC EN 61010-1             |  |
| Ambient Conditions | Humidity                                  | 5 to 90 % RH, non-condensing             |
|                    | Pressure                                  | 23.6 to 32.5 inch Hg / 800 to 1,100 mbar |



MKTG00199 | Rev0 | Marketing Communications | Subject to Modifications | © Bacharach Inc



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# MGS-450 Sensor Specifications

| PART NUMBER IP41 | PART NUMBER IP66 | REPLACEMENT SENSOR | TARGET GAS      | SENSOR TECHNOLOGY <sup>1</sup> | FULLSCALE RANGE      | ALARM RANGE     | LOW ALARM | HIGH ALARM | ACCURACY (% OF RANGE) | TEMPERATURE RANGE |
|------------------|------------------|--------------------|-----------------|--------------------------------|----------------------|-----------------|-----------|------------|-----------------------|-------------------|
| 6302-1003        | 6302-2003        | 6302-9003          | O <sub>2</sub>  | EC                             | 30% Volume           | 4.5%-30% Vol    | 19.5% Vol | 23% Vol    | ±5%                   | -20°C to 50°C     |
| 6302-1026        | 6302-2026        | 6302-9026          | NH <sub>3</sub> | EC                             | 100ppm               | 15-100ppm       | 50ppm     | 90ppm      | ±5%                   | -40°C to 40°C     |
| 6302-1028        | 6302-2028        | 6302-9028          | NH <sub>3</sub> | EC                             | 1,000ppm             | 150-1,000ppm    | 500ppm    | 900ppm     | ±5%                   | -40°C to 40°C     |
| 6302-1029        | 6302-2029        | 6302-9029          | NH <sub>3</sub> | EC                             | 300ppm               | 10-300ppm       | 25ppm     | 150ppm     | ±5%                   | -40°C to 40°C     |
| 6302-1037        | 6302-2037        | 6302-9037          | NH <sub>3</sub> | EC                             | 5,000ppm             | 750-5,000ppm    | 2,500ppm  | 4,500ppm   | ±5%                   | -20°C to 40°C     |
| 6302-1040        | 6302-2040        | 6302-9040          | CO              | EC                             | 500ppm               | 20-500ppm       | 25ppm     | 100ppm     | ±5%                   | -40°C to 50°C     |
| 6302-1041        | 6302-2041        | 6302-9041          | NO <sub>2</sub> | EC                             | 20ppm (20,000 ppb)   | 3,000-20,000ppb | 5,000ppb  | 10,000ppb  | ±5%                   | -20°C to 40°C     |
| 6302-1052        | 6302-2052        | 6302-9052          | R-600           | IR                             | 100% LEL (1.4% Vol)  | 15-100% LEL     | 50% LEL   | 90% LEL    | ±5%                   | -40°C to 50°C     |
| 6302-1053        | 6302-2053        | 6302-9053          | R-50            | IR                             | 100% LEL (4.4% Vol)  | 15-100% LEL     | 50% LEL   | 90% LEL    | ±5%                   | -40°C to 50°C     |
| 6302-1054        | 6302-2054        | 6302-9054          | R-290           | IR                             | 100% LEL (1.7% Vol)  | 15-100% LEL     | 50% LEL   | 90% LEL    | ±5%                   | -40°C to 50°C     |
| 6302-1069        | 6302-2069        | 6302-9069          | NH <sub>3</sub> | CT                             | 0-3% Volume          | 1 - 3.0% Vol    | 1% Vol    | 2% Vol     | ±5%                   | -40°C to 50°C     |
| 6302-1070        | 6302-2070        | 6302-9070          | NH <sub>3</sub> | CT                             | 0-100% LEL (15% Vol) | 15 - 100% LEL   | 25% LEL   | 50% LEL    | ±5%                   | -40°C to 50°C     |
| 6302-1090        | 6302-2090        | 6302-9090          | CO <sub>2</sub> | IR                             | 5,000ppm             | 750-5,000ppm    | 2,500ppm  | 4,500ppm   | ±5%                   | -40°C to 50°C     |
| 6302-1091        | 6302-2091        | 6302-9091          | CO <sub>2</sub> | IR                             | 10,000ppm            | 1,500-10,000ppm | 5,000ppm  | 9,000ppm   | ±5%                   | -40°C to 50°C     |
| 6302-1092        | 6302-2092        | 6302-9092          | CO <sub>2</sub> | IR                             | 20,000ppm            | 3,000-20,000ppm | 10,000ppm | 18,000ppm  | ±5%                   | -40°C to 50°C     |
| 6302-1093        | 6302-2093        | 6302-9093          | CO <sub>2</sub> | IR                             | 30,000ppm            | 4,500-30,000ppm | 15,000ppm | 27,000ppm  | ±5%                   | -40°C to 50°C     |
| 6302-1094        | 6302-2094        | 6302-9094          | CO <sub>2</sub> | IR                             | 40,000ppm            | 6,000-40,000ppm | 20,000ppm | 36,000ppm  | ±5%                   | -40°C to 50°C     |
| 6302-1095        | 6302-2095        | 6302-9095          | CO <sub>2</sub> | IR                             | 50,000ppm            | 7,500-50,000ppm | 25,000ppm | 45,000ppm  | ±5%                   | -40°C to 50°C     |
| 6302-1101        | 6302-2101        | 6302-9101          | R-134a          | SC                             | 1,000ppm             | 150-1,000ppm    | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1103        | 6302-2103        | 6302-9103          | R-404A          | SC                             | 1,000ppm             | 150-1,000ppm    | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1105        | 6302-2105        | 6302-9105          | R-407A          | SC                             | 1,000ppm             | 150-1,000ppm    | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1107        | 6302-2107        | 6302-9107          | R-410A          | SC                             | 1,000ppm             | 150-1,000ppm    | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1109        | 6302-2109        | 6302-9109          | R-22            | SC                             | 1,000ppm             | 150-1,000ppm    | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1111        | 6302-2111        | 6302-9111          | R-507A          | SC                             | 1,000ppm             | 150-1,000ppm    | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |

<sup>1</sup> EC = Electrochemical Cell, IR = Infrared, CT = Catalytic Bead, SC = Metal-Oxide Semiconductor



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| PART NUMBER IP41 | PART NUMBER IP66 | REPLACEMENT SENSOR | TARGET GAS | SENSOR TECHNOLOGY <sup>1</sup> | FULLSCALE RANGE | ALARM RANGE  | LOW ALARM | HIGH ALARM | ACCURACY (% OF RANGE) | TEMPERATURE RANGE |
|------------------|------------------|--------------------|------------|--------------------------------|-----------------|--------------|-----------|------------|-----------------------|-------------------|
| 6302-1123        | 6302-2123        | 6302-9123          | R-407C     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1126        | 6302-2126        | 6302-9126          | R-407F     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1152        | 6302-2152        | 6302-9152          | HFO1234ze  | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1155        | 6302-2155        | 6302-9155          | R-32       | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1156        | 6302-2156        | 6302-9156          | R-448A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1157        | 6302-2157        | 6302-9157          | R-452A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1158        | 6302-2158        | 6302-9158          | R-513A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1159        | 6302-2159        | 6302-9159          | R-434A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1160        | 6302-2160        | 6302-9160          | R-450A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1161        | 6302-2161        | 6302-9161          | HFO1234yf  | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1163        | 6302-2163        | 6302-9163          | R-452B     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1164        | 6302-2164        | 6302-9164          | R-454A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1165        | 6302-2165        | 6302-9165          | R-422A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1166        | 6302-2166        | 6302-9166          | R-422D     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1167        | 6302-2167        | 6302-9167          | R-427A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1169        | 6302-2169        | 6302-9169          | R-449A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1170        | 6302-2170        | 6302-9170          | R-454C     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1171        | 6302-2171        | 6302-9171          | R-454B     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1172        | 6302-2172        | 6302-9172          | R-455A     | SC                             | 1,000ppm        | 150-1,000ppm | 500ppm    | 900ppm     | -10%/+15%             | -40°C to 50°C     |
| 6302-1301        | 6302-2301        | 6302-9301          | R-290      | SC                             | 5,000ppm        | 750-5,000ppm | 800ppm    | 2,500ppm   | -10%/+15%             | -40°C to 50°C     |
| 6302-1310        | 6302-2310        | 6302-9310          | R-290      | SC                             | 2,500ppm        | 400-2,500ppm | 1,000ppm  | 2,000ppm   | -10%/+15%             | -40°C to 50°C     |

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