



# GAS & SPECIALTY SENSORS

## REFRIGERANT GAS DETECTOR MGS-450 SERIES

### DESCRIPTION

The **Bacharach MGS-450 Series** is a feature-rich refrigerant, toxic and combustible gas detector with a remote sensor (up to 16ft or 5m). The **MGS-450 Series** can be connected to a building management system using Modbus, MGS-408 Series gas detection controllers, or as a standalone gas detector for low-temperature, IP66 applications. In addition, the **MGS-450 Series** includes 3-output relays (fault, low alarm, high alarm) and an analog output for local alarming, auxiliary ventilation, or refrigerant flow restriction. The **MGS-450 Series** is ideal for all AHSRAE 15 or EN378 safety compliance applications, including cold storage, freezers, coolers, or mechanical room applications.



MGS-450 Series

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### FEATURES

- LED status indication
- Integrates with gas detectors
- Power gas detectors
- Modbus RTU master to gas detectors
- Modbus RTU slave to BMS / BAS
- Event logging via SD Card
- Display screen
- Audible and visual alarms

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### SPECIFICATIONS

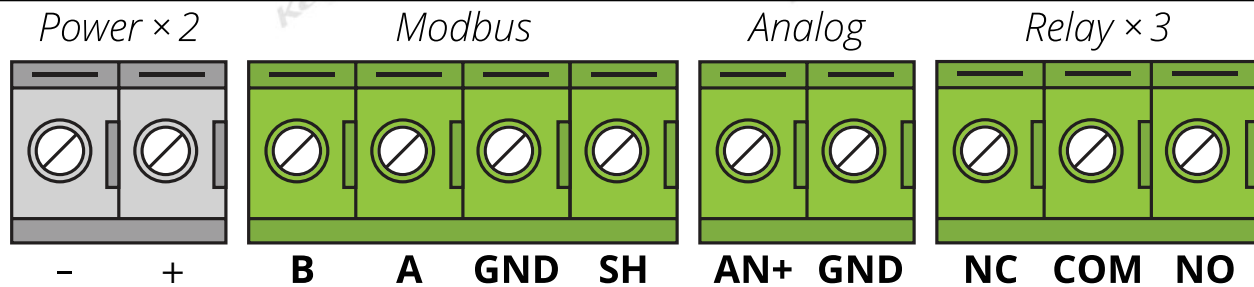
|                              |   |                             |   |
|------------------------------|---|-----------------------------|---|
| <b>Size (HxWxD)</b>          | 8.3" × 8.9" × 3.4"<br>(210 × 225 × 85 mm)                                   | <b>Wiring (Modbus)</b>      | Recommended: Belden 3106A (or equivalent) 3-core, 2 twisted pair + ground, shielded cable with 120 Ω characteristic impedance, 16 to 28 AWG |
| <b>Weight</b>                | 1.05 lbs (480 g)  | <b>Enclosure Protection</b> | Material: ABS<br>IP41 or IP66   |
| <b>Indicators</b>            | Multi-color Status LED  | <b>Temperature</b>          | Semiconductor: -40 to 122°F (-40 to 50°C)   |
| <b>Internal Alarm Buzzer</b> | 72dB @ 3.9 (10 cm)  | <b>Electrochemical</b>      | Ranges vary by gas type and / or concentration, see the MGS-400 User Manual (P/N 1100-2294) for a full list of temperature ranges.          |
| <b>Alarm Delay</b>           | Configurable (0 to 15 minutes)  | <b>Infrared</b>             | -40 to 122°F (-40 to 50°C)  |
| <b>Inputs</b>                | Tactile Switches (x2), Magnetic Switches (x2)                               | <b>Catalytic Bead</b>       | -40 to 122°F (-40 to 50°C)  |
| <b>Outputs</b>               | Analog Output: 4 to 20 mA, 0 to 5V, 0 to 10V, 1 to 5V (default) or 2 to 10V | <b>Humidity</b>             | 5 to 90% RH, non condensing   |
| <b>Bluetooth®</b>            | Bluetooth® Low Energy, BLE 4.2  | <b>Pressure</b>             | 23.6 to 32.5 Hg (800 to 1,100 mbar)   |
| <b>Modbus</b>                | Connection: RS-485 terminal block   | <b>Elevation</b>            | 0 to 6,560' (2,000 m) altitude  |
| <b>Baud Rate</b>             | 9,600 (default) or 19,200   |                             |   |
| <b>Data Bits</b>             | 8   |                             |   |
| <b>Parity</b>                | None (default), odd or even   |                             |   |
| <b>Stop Bits</b>             | 1 (default) or 2  |                             |   |
| <b>Retry Time</b>            | 500 ms (minimum)  |                             |   |
| <b>Power Supply</b>          | 19.5 to 28.5 VDC or 24 VAC ±20%; 4W   |                             |   |
| <b>Wiring (Power)</b>        | 2-core cable, 16 to 28 AWG  |                             |   |
| <b>Wiring (Relays)</b>       | 2-core cable, 16 to 28 AWG  |                             |   |

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### WIRING



1. Locate connections (Power, Analog, Modbus, Relays) and remove terminal blocks from the PCBA.
2. Remove plugs from the corresponding M16 cable glands and pass the cable through the opening.
3. Secure wires in each terminal block and, pressing firmly, reinstall the terminal block in the PCBA.
4. Remove all excess cable from the housing before firmly securing the cable glands.

### ORDERING INFORMATION

| Model     | Description   |
|-----------|---|
| 6302-1003 | MGS450 GAS DETECTOR O2 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-30%, LOW ALARM      |
| 6302-1026 | MGS450 GAS DETECTOR NH3 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-100 PPM            |
| 6302-1040 | MGS450 GAS DETECTOR CO IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-500 PPM             |
| 6302-1041 | MGS450 GAS DETECTOR NO2 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-20 PPM             |
| 6302-1053 | MGS450 GAS DETECTOR CH4 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-100% LEL           |
| 6302-1090 | MGS450 GAS DETECTOR CO2 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-5,000 PPM          |
| 6302-1091 | MGS450 GAS DETECTOR CO2 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-10,000 PPM         |
| 6302-1092 | MGS450 GAS DETECTOR CO2 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-20,000 PPM         |
| 6302-1101 | MGS450 GAS DETECTOR R134A IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-1103 | MGS450 GAS DETECTOR R404A IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-1105 | MGS450 GAS DETECTOR R407A IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-1107 | MGS450 GAS DETECTOR R410A IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-1109 | MGS450 GAS DETECTOR R22 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM          |
| 6302-1111 | MGS450 GAS DETECTOR R507A IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-1123 | MGS450 GAS DETECTOR R407C IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-1126 | MGS450 GAS DETECTOR R407F IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-1152 | MGS450 GAS DETECTOR R1234ZE IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM      |
| 6302-1155 | MGS450 GAS DETECTOR R32 IP41 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM          |
| 6302-2003 | MGS450 GAS DETECTOR O2 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-30%, LOW ALARM      |
| 6302-2026 | MGS450 GAS DETECTOR NH3 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-100 PPM            |
| 6302-2028 | MGS450 GAS DETECTOR NH3 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM, LO TEMP |
| 6302-2029 | MGS450 GAS DETECTOR NH3 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-300 PPM            |
| 6302-2040 | MGS450 GAS DETECTOR CO IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-500 PPM             |
| 6302-2041 | MGS450 GAS DETECTOR NO2 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-20 PPM             |
| 6302-2053 | MGS450 GAS DETECTOR CH4 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-100% LEL           |
| 6302-2070 | MGS450 GAS DETECTOR NH3 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-100% LEL           |
| 6302-2090 | MGS450 GAS DETECTOR CO2 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-5,000 PPM          |
| 6302-2091 | MGS450 GAS DETECTOR CO2 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-10,000 PPM         |
| 6302-2092 | MGS450 GAS DETECTOR CO2 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-20,000 PPM         |
| 6302-2103 | MGS450 GAS DETECTOR R404A IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-2105 | MGS450 GAS DETECTOR R407A IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-2107 | MGS450 GAS DETECTOR R410A IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-2109 | MGS450 GAS DETECTOR R22 IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM          |
| 6302-2111 | MGS450 GAS DETECTOR R507A IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-2123 | MGS450 GAS DETECTOR R407C IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-2126 | MGS450 GAS DETECTOR R407F IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM        |
| 6302-2152 | MGS450 GAS DETECTOR R1234ZE IP66 3 RELAYS ANALOG AND MODBUS OUTPUT 0-1,000 PPM      |