

## Product Specification

### **Bid Specification for Automatic and Continuous Refrigerant Gas Detector for Refrigeration Safety Compliance in Refrigeration Machinery Rooms, Mechanical Rooms, Chiller Rooms and Cold Rooms**

Provide a stationary refrigerant gas leak monitor system designed to alarm at a specified level of refrigerant gas in monitoring areas. The monitor equipment shall be self-contained wall mounted device with onboard sensor, in the area where refrigerant gases are most likely to concentrate.

The refrigerant gas monitor shall meet the following specifications:

1. Coverage: single sensor onboard
2. Gases detected and sensor type
  - a. HFC, HFO, HCFC, CFC: Semiconductor sensor
  - b. CO<sub>2</sub>: Infrared sensor
  - c. NH<sub>3</sub>: Electrochemical or semiconductor sensor
3. Temperature compensated measurement: All sensor types shall automatically compensate for changes in output due to ambient temperature change
4. Operating Temperature: -40°-102°F / -40°-50°C
5. Ambient Humidity: 0% to 90% RH (non-condensing)
6. Sampling Mode: continuous
7. User interface: mobile application for configuration of gas detector via Bluetooth connectivity; magnetic switch activated by magnetic wand (included with device); tactile switch
8. Maintenance: Pre-calibrated sensor modules for in-field exchange
9. Calibration: Automated electronic adjustment upon instigation of calibration procedure and application of calibration gas
10. Test mode: Ability to functionally test LEDs, audible alarm, relay function and analog output via mobile application
11. Alarms: 2 levels
12. Power Status Indicator: Green LED
13. Alarm Status Indicator: Red LED, audible alarm, Modbus register, relay (optional)
14. Fault Status Indication: Amber LED, Modbus register diagnostics, relay (optional)
15. Alarms: onboard audible and visual alarm indicators, Modbus registers: 2

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16. Alarm silence switch: mobile application; magnetic switch activated by magnetic wand (included with device)
17. Alarm delay: user selectable 0 - 15 minutes
18. Alarm reset: user selectable to be either manual or automatic
19. Power: 19.5 to 28.5 VDC or 24 VAC  $\pm$ 20%
20. Communications:
  - a. Modbus RTU: Baud rate 9,600 or 19,200, configurable
  - b. Optional: 3 x SPDT relays: low alarm, high alarm, fault; normal or failsafe; configurable
  - c. Optional: analog output; 4-20mA, 0-5V, 1-5V, 0-10V, 2-10V; configurable
21. Size: Maximum 8.3" x 8.9" x 3.4" / 210 x 225 x 85 mm
22. Certification: CE, UL/CSA/IEC/EN 61010-1
23. Manufacturer: Bacharach model MGS-410 / MGS-450 / MGS-460
24. Provide local alarm within the monitored space to sound if refrigerant vapor concentration exceeds threshold. Alarm shall provide a visual and an audible alarm with a sound pressure level of at least 72 dB at 10cm. Alarm outputs will allow for additional audible and visual alarm to be activated outside of the monitored space.
25. Warranty: One (1) year.