

## **Refrigerant - Solid State Sensor Stand-Alone Gas Detector**

**The Refrigerant gas detectors shall be as manufactured by Brasch Manufacturing Company, Inc. with specifications and input / output ratings as scheduled.**

### **General:**

1. The detector shall be an ETL listed unit containing a sensor and output board that conforms completely to the UL 3111-1 standard.
2. The NEMA 1 enclosure consists of two pieces, a cover and chassis that shall be constructed of heavy gauge galvanealed steel with a baked-on polyester finish. The cover shall close flush with the sides of the box and shall require a special tool to open it. The sensor module shall be protected from damage inside the enclosure and the cover shall contain louver openings to allow proper sensing. The openings shall conform to the UL 3111-1 standard.
3. The detector shall contain a semiconductor sensor with temperature compensation circuits.  
The sensor can be calibrated to respond to any one of the following refrigerants:  
**R-11, R-12, R-22, R-23, R-113, R-123, R-134a, R-141b, R-142b, R-152a, R-500 or R-502.**
4. The enclosure shall be provided with four, ½” pre-punched openings for connection of field conduit.
5. The detector shall be protected against static discharge, excessive electrical noise, and tested for safety in accordance with the UL 3111-1 standard.
6. The detector shall have a 0.56” minimum height, LED display that will continually display the refrigerant level, in parts per million (ppm). The detector shall have a green “power” LED, a yellow “sensor-failure” LED, a red “low-alert” LED and a red “alarm” LED.

### **Overcurrent Protection:**

7. The detector shall contain a power supply fuse rated for 1.25 amp at 250 VAC. Each output relay shall have a fuse rated for 5 amp at 250 VAC. Fuses shall be of the time-lag type.

### **Switches and Controls:**

8. The detector shall provide a 4–20 ma DC, 0–1 VDC, 0–5 VDC or 0–10 VDC signal in direct relationship to the refrigerant gas concentration. The signal type can be selected at time of order or changed in the field. This signal shall be compatible with building and energy management systems and/or Brasch Manufacturing, Multi-Sensor Control Panels.
9. An external switch on the bottom of the enclosure shall be provided to silence the 106 dB internal alarm. The alarm circuit shall become active again, once the detector is no longer at alarm levels.
10. Output relays providing a normally closed set of contacts for the low-alert and for the alarm shall be provided. These relays shall provide a fail-safe that will automatically activate ventilation equipment upon power loss to the sensor. An additional relay can be field configured to operate as an extra low alert relay or an extra alarm relay. These relays shall be suitable for the connection of 24 VAC, 24 VA inductive circuits.
11. Switches shall be provided for field adjustment of the gas detection level for the low-alert, and of the on/off time delay for the low-alert and high-alert. Selectable refrigerant detection levels shall range from 50 to 800 ppm. Selectable time delays shall range from 0 to 7 minutes, in 1 minute increments.

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