

SECTION 230923 – GAS DETECTION MONITORING SYSTEM

The manufacturer shall warrant all components for a period of 5 years from the date of production and shall have a 1 year calibration warranty.

- A. Manufactured, brand labeled or distributed by Belimo.
- B. All sensing elements must be capable of field calibration or field replacement with a factory calibrated sensing element.
- C. Sensing elements shall be mounted per the manufacturer's recommended height.
- D. Carbon Monoxide
 - 1. Element Type: Electrochemical
 - 2. Ranges:
 - a) Measurement: 0-250 ppm full scale
 - b) Detection Range: **50 ft (15 m)**
 - c) Operating Temperature: **-4 to 104 °F (-20 to 40 °C)**
 - d) Humidity:
 - (1) 15-90% rH continuous
 - (2) 0-99% rH intermittent, non-condensing
 - 3. Performance:
 - a) Accuracy: +/- 3% full scale (0-75 ppm)
 - b) Drift: <5% (annual)
 - c) Repeatability: <+3%
 - d) Response Time: <30 seconds (T90)
- E. Nitrogen Dioxide
 - 1. Element Type: Electromechanical
 - 2. Ranges:
 - a) Measurement: 0-10 ppm full scale
 - b) Detection Range: 50 ft (15 m)
 - c) Operating Temperature: **-4 to 104 °F (-20 to 40 °C)**
 - d) Humidity:
 - (1) 15-90% rH maximum continuous
 - (2) 0-99% rH intermittent, non-condensing
 - 3. Performance:
 - a) Accuracy: + 6.5% full scale (0-2 ppm)
 - b) Drift: <+2% (monthly)
 - c) Repeatability: <+2%
 - d) Response Time: <30 seconds (T90)
- F. Power Supply:
 - 1. Voltage: 24VAC
 - 2. Frequency: 50/60 hz

3. Apparent Power: 5VA (210 mA)
- G. Outputs:
1. Type A
 - (1) Binary: (1) SPDT 5A @ 125VAC relay
 - (2) Analog:(2), 4-20mA or 2-10 VDC
 2. Type B
 - (1) Binary: (2) SPDT 5A@ 125VAC relays
- H. User Interface
1. Backlit LCD display of gas concentration, user settings and calibration controls.
 2. LED alarm indicators for 3 levels of alarm: Red for gas level 1 and 2; high intensity white strobe for gas level 3.
 3. Audible alarm, 80db at **3.3 feet (1 meter)**.
- I. Agency Listings:
1. UL 2075 and ULC-S588 assemblies for CO single, NO₂ single, and CO/NO₂ dual monitors; CSA C22.2.No. 61010-1-12, UL94 5VA enclosure.
- J. Communication:
1. CAN network operation as addressable nodes.
 2. BTL listed BACnet MS/TP RS485 for integration to the building automation system.