

**Purchase Specification:       ISA-200-RAL**

A continuous compressed air line monitor for carbon monoxide (CO) shall be provided. The instrument shall provide a digital display to indicate CO concentration present. It shall also provide audio, visual and relay contact alarms if the level of carbon monoxide exceeds a preset limit or if line pressure is lost. The device shall have the following specifications:

**A.     Power**

1.       The instrument shall have a power input that accommodates 100-240 VAC (50/60 Hz).
2.       The instrument will be provided with a standard US 110 VAC power cord.
3.       Power consumption shall be limited to less than 15 Watts.
4.       The instrument shall be capable of being powered by 12 VDC.

**B.     Enclosure**

1.       The instrument enclosure shall be NEMA-12 rated fiberglass.
2.       The enclosure shall have a viewing window with latch that allows viewing of the complete instrument display and all visual alarm functions.
3.       The enclosure shall be no larger than 11 x 9 x 6 inches.
4.       The instrument shall weigh no more than 10 pounds.

**C.     Display**

1.       The display shall be a two-line, 16 character dot-matrix LCD with continuous LED backlight.
2.       The display shall show the CO concentration between 0-100 ppm.
3.       The display shall provide sensor sample airflow information.
4.       The display shall be capable of showing the alarm point and latching status.

**D.     Alarms**

1.       The instrument shall have two levels of alarm.
2.       The instrument shall provide an audio alarm, at least 90 dB at 2 feet.
3.       The instrument shall have a dedicated red LED that activates at each alarm point.
4.       The instrument shall have a fault alarm that activates after a failed calibration or in the event of a loss of air pressure.
5.       The fault alarm shall activate the audio alarm and have a dedicated red LED.

**E.     Outputs**

1.       Each alarm point shall activate a Form C relay contact rated for at least 2 A at 110 VAC, non-resistive load.
2.       The carbon monoxide sensor shall have an optional 4-20 mA output.

**F.     Sensor**

1.       The sensing element shall be an electrochemical gas sensor.
2.       The sensor should have a filter to minimize hydrocarbon interferences.
3.       A humidifier tube shall be incorporated into the instrument to humidify the air sample to the sensor.
4.       T90 response time shall be 30 seconds to 10 ppm CO.

**G.     Operation**

1.       The instrument shall be designed for continuous operation.
2.       Maintenance procedures shall be password protected.
3.       The user shall have the ability to program their own password.
4.       The user shall have the ability to program relay contacts to be latching or non-latching.
5.       The user shall be able to program alarm set points.
6.       The user shall be able to perform routine calibration procedures by push-button procedure. Adjustment of potentiometers is not acceptable.
7.       The instrument shall have a separate calibration port and valve to perform calibration.
8.       Line pressure shall be 60-250 psig.