

## SECTION 15xxx

### BOILER ROOM CARBON MONOXIDE DETECTION

#### 1.0 GENERAL

- 1) Provide a complete installation of a toxic gas detection system including stand-alone sensor and audible/visual alarm devices.
- 2) The sensor shall include, but not be limited to, the following:
  1. Display of toxic gas concentrations
  2. Ability to modify alarm set points
  3. Display of alarm status

#### 2.0 PRODUCTS

##### 2.01 DETECTORS E<sup>3</sup>Point Model E3SAH + E3SCO (Carbon Monoxide sensor cartridge)

A. Transmitter will be powered by 120 Vac (E3SAH). The gas transmitter must be capable of monitoring a second gas (optional) when equipped with an E3SRM remote sensor. The gas transmitter will incorporate an electro-chemical cell for toxic gas monitoring. Unit sensing cell must compensate for variations in relative humidity and temperature to maintain high levels of accuracy.

B. The transmitter will be capable of transmitting gas concentrations to a DDC system through its 4-20 mA output. For local activation of fans or louvers (or other equipment), two on-board DPDT relays 5 A, 30 Vdc or 250 Vac (resistive load) will be activated at programmable set points (and programmable time delays). An LCD display will provide local gas concentration readings.

C. Transmitter will be capable of operating within relative humidity ranges of 5-95% non-condensing and temperature ranges of -4° F to 104° F (-20° C to 40° C).

D. Unit will be certified to ANSI/UL 61010-1 label and CAN/CSA-C22.2 No. 61010-1. Transmitter must be manufactured in an ISO 9001-2000 production environment.

E. The transmitter should have a plug-in capability for a gas cartridge with a smart sensor capable of self-testing.

F. For local activation of audible alarms, the transmitter shall have an on-board device able to generate an audible output of 85 dBA @ 10 ft (3m).

**Detector alarm levels are to be activated and the unit is to be installed in accordance with the following parameters:**

GASES	1st ALARM SET POINT (TLV-TWA)	2nd ALARM SET POINT (TLV-STEL)	MOUNTING HEIGHT	COVERAGE RADIUS
Carbon Monoxide (CO)	35 PPM	150 PPM	5 ft above finished floor	20-25 ft

**Local Building Codes recommendations take precedence over these parameters. Coverage can differ depending on application**

### **3.00 INSTALLATION**

A. Install hazardous gas monitoring equipment including sensor, manual reset and audible alarms as shown on Contract Drawings, and as recommended by manufacturer of equipment, and as required by authorities having jurisdiction.

### **3.01 SAMPLE SEQUENCE OF OPERATION**

A. If CO sensor detects first alarm at 35 PPM (adjustable) the exhaust fan(s) operate and motorized damper(s) open. First alarm levels shall have a (30) second before delay (adjustable) in order to confirm sustained presence of gas concentrations. Low Alarm indicators light on sensor reflects gas concentration. If toxic gas not cleared after 10 minutes (adjustable) or the level reaches 150 PPM (adjustable), High Alarm indicator lights on the sensor and remote audible and visual alarms to operate. Contacts to activate boiler shutdown and manual reset triggered. Shutdown remains active until reset is manually deactivated.

### **3.02 COMMISSIONING**

- A. After installation, test and calibrate equipment to demonstrate operation of functions described above under sequence of operation by manufactures certified service technician.
- B. Provide testing kits (including gas bottles) for testing and calibration by Commission technician.

### **3.03 WARRANTY.**

#### **A. Limited Warranty**

Honeywell Analytics, Inc. warrants to the original purchaser and/or ultimate customer ("Purchaser") of Honeywell Analytics products ("Product") that if any part thereof proves to be defective in material or workmanship within twelve (12) months, such defective part will be repaired or replaced, free of charge, at Honeywell Analytics' discretion if shipped prepaid to Honeywell Analytics at 4005 Matte Blvd., Unit G, Brossard, Quebec, Canada, J4Y 2P4, in a package equal to or in the original container. The Product will be returned freight prepaid and repaired or replaced if it is determined by Honeywell Analytics that the part failed due to defective materials or workmanship. The repair or replacement of any such defective part shall be Honeywell Analytics' sole and exclusive responsibility and liability under this limited warranty.

**END OF SECTION**