

SECTION 28 31 49

CARBON-MONOXIDE DETECTION SENSORS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section of the specification includes the furnishing, installation, and connection of local carbon monoxide sensors and wiring as shown on the drawings and specified herein.

1.2 SUBMITTALS

A. General:

- 1. Submit shop drawings and product data under provisions of Division 1 and Section 28 00 00.
- 2. All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality. Equivalent equipment (compatible UL Listed) from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met.
- 3. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

B. Shop Drawings:

- 1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
- 2. Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.

C. Manuals:

- 1. Submit simultaneously with the shop drawings, complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets.
- 2. Wiring diagrams shall indicate internal wiring for each device and the interconnections between the items of equipment.
- 3. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.

1.3 GUARANTY

- A. All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one year period shall be included in the submittal bid.

1.4 APPLICABLE STANDARDS AND SPECIFICATIONS

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- A. The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards.
 - 1. National Fire Protection Association (NFPA) - USA:
 - a. NFPA 720 - Standard for the Installation of Carbon Monoxide Detection and Warning Equipment.
 - 2. Underwriters Laboratories Inc. (UL) - USA:
 - a. No. 2034 - Single and Multiple Station Carbon Monoxide Alarms
- B. Local and State Building Codes.

PART 2 - PRODUCTS

2.1 CARBON MONOXIDE SENSORS

- A. Manufacturers
 - 1. *BRK Brands, Inc.* Model C05120BN (CO detector)
 - 2. *BRK Brands, Inc.* Model SL177 (strokes)
 - 3. Substitutions: Or Approved Equal.
- B. Description: Carbon monoxide sensors shall include an electrochemical CO sensor adjusted not to detect CO levels below 30 PPM. Alarms shall not sound when exposed to constant levels of 30 PPM for thirty days. Alarms shall sound at 400 PPM between four and fifteen minutes, 150 PPM between 10 and fifteen minutes, and 70 PPM between 60 and 240 minutes. Sensors shall conform to the requirements of UL 2034 and NFPA 720.
 - 1. Electrical Rating: 120 VAC with 9 VDC battery backup.
 - 2. Alarm:
 - a. 85 DB at 10 feet.
 - b. Test/silence button to check all alarm functions and to silence any nuisance alarms.
 - c. Low-battery alarm with silence feature.
 - 3. Diagnostics: Self-diagnostic to issue an audible malfunction warning.
 - 4. Visual Indication: LED power ON indicator.
- C. Provide strobe lights for CO detectors in Living Units 106, 128, and 130.

2.2 CONDUIT AND WIRE

- A. Arrange with Division 26 to provide raceway and boxes.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation shall be in accordance with the NFPA 70 and NFPA 720, as well as local and state codes. Installation shall also conform to all requirements established by the equipment manufacturer.

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- B. All wiring shall be concealed in finished areas.

3.2 TEST

- A. Upon completion of the system installation, the system shall be tested to determine functionality.

3.3 INSTRUCTION

- A. Provide instruction as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.

END OF SECTION