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USACE / NAVFAC / AFCEA UFGS-13856 (August 2004)  
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Preparing Activity: NAVFAC Superseding  
UFGS-13856N (April 2002)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 25 June 2004

Latest change indicated by CHG tags

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### SECTION 13856

#### CARBON MONOXIDE DETECTORS 08/04

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NOTE: This guide specification covers the requirements for carbon monoxide alarm detectors.

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of technical proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

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NOTE: This guide specification covers carbon monoxide alarm detectors for protection in indoor locations of living quarters where fuel-burning appliances/equipment are used.

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## PART 1 GENERAL

### 1.1 REFERENCES

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NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest guide specification. Use of SpecsIntact automated reference checking is recommended for projects based on older guide specifications.

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The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (2002) National Electrical Code

UNDERWRITERS LABORATORIES (UL)

UL 2034 (1996; Rev thru Jun 2002) Single and Multiple Station Carbon Monoxide Alarms

1.2 SUBMITTALS

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NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy projects.

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Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.] [for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Carbon monoxide detector

SD-06 Test Reports

Carbon monoxide detector test

[ SD-10 Operation and Maintenance Data

Carbon monoxide detector; Data Package 1

Submit in accordance with Section 01781 OPERATION AND  
MAINTENANCE DATA.]

## PART 2 PRODUCTS

### 2.1 CARBON MONOXIDE DETECTOR

UL 2034, [Single station] [Multiple station] detector [surface] [flush]  
mounted. Operational requirements shall be as follows:

- a. Electrical: [120 Volt AC with 9 volt battery backup] [\_\_\_\_ volt  
DC]
- b. Environmental: 32 degrees to 120 degrees F 0 degrees to 49  
degrees C.

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**NOTE: Corps of Engineers EM 385-1-1, Safety and  
Health Requirements Manual has specified that air  
shall not contain a level of carbon monoxide greater  
than 20 ppm.**  
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- c. Alarm and Indicator: Red LED for visual and 85 db at [10] [\_\_\_\_]  
ft [3050] [\_\_\_\_] mm for audible alarm. Malfunction indicator  
light shall be yellow or amber LED. Power on indicator light  
shall be white or green for 120 Volt AC powered units, while  
operating on AC power.
- d. Alarm reset/silence button: Provide a manually operated alarm  
reset and silence button. Pressing the button shall silence the  
alarm, and reset the detector. Alarm shall resound within 6  
minutes if CO level remains at or above 70 ppm.
- e. Battery removal flag: Provide a warning flag that will be exposed  
while the battery is removed, and hidden while the battery is  
installed.

### 2.2 CONDUIT, BOXES, AND FITTINGS

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**NOTE: The second bracketed option is the short form  
version of the interior electrical and its use is at  
the discretion of the Engineer/Architect in charge.**  
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Specified in Section 16402 INTERIOR DISTRIBUTION SYSTEM.

## 2.3 WIRES AND CABLES

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NOTE: The second bracketed option is the short form  
version of the interior electrical and its use is at  
the discretion of the Engineer/Architect in charge.  
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Specified in Section 16402 INTERIOR DISTRIBUTION SYSTEM.

## PART 3 EXECUTION

### 3.1 INSTALLATION

#### 3.1.1 Electrical work

Electrical installation shall conform to the requirements of Section 16402 INTERIOR DISTRIBUTION SYSTEM and NFPA 70.

#### 3.1.2 Carbon Monoxide Detector

Install detector[s] in accordance with the manufacturer's instructions. Provide detector in hallway outside bedroom[s], [\_\_\_\_], and in location[s] as indicated.

#### 3.1.3 Grounding and Bonding

Equipment grounding and bonding shall be in accordance with UL 2034 and NFPA 70.

### 3.2 FIELD QUALITY CONTROL

Provide test equipment and personnel and submit written copies of the test results. Notify Contracting Officer [15] [\_\_\_\_] working days prior to the test.

#### 3.2.1 Carbon Monoxide Detector Test

Contractor shall show by demonstration in service that the detector[s] [is][are] in good condition and properly performing the intended function. Test shall be in accordance with UL 2034 requirements specified in paragraph entitled "Normal Operation Test" [and the manufacturer's test procedure].

-- End of Section --