



**Fire-Lite® Alarms**  
INCORPORATED

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F-535

# 1412 and 1424 4-Wire Ionization Smoke Detectors

Section: Conventional Initiating Devices

## GENERAL

The System Sensor **1400 Series** direct-wire ionization smoke detectors respond quickly to fast flaming fires as required by UL 268 (a photoelectric smoke detector is faster at detecting slow smoldering fires). The unipolar dual-chamber sensor has the sensitivity needed to quickly detect smoke, and the stability needed to avoid false alarms.

## FEATURES

- Detects both visible and invisible smoke.
- Used with UL listed control panels.
- Unipolar ionization sensing chamber:
  - Provides exceptional stability.
  - Factory-preset 1.9% nominal sensitivity.
  - Stable operation in air velocities up to 1,200 feet-per-minute (7.6 meters per second).
- Removable cover for field cleaning.
- Visible LED "blinks" in standby, latches in alarm.
- Sealed against dirt, insects and back pressure.
- Three-year limited warranty.
- Field-metering of detector sensitivity (using MOD400R).
- Built-in test switch.
- Low standby current.
- Built-in tamper-resistant feature.
- Direct surface or electrical box mounting.
- Remote LED option (using RA400Z).
- Insect-resistant screening (0.020"/0.508 mm openings).
- SEMS screws for easy wiring.

## APPLICATIONS

Use for protection of life and property. Superior to photoelectric detectors in detecting fast-flaming fires. Superior to bipolar detectors in avoiding false alarms.

## CONSTRUCTION AND OPERATION

All 400 Series ionization smoke detectors contain a unique dual source, dual unipolar chamber detection design which will sense the presence of smoke particles produced by fast combustion as well as slow smoldering fires. Additional key features include a blinking LED standby status indicator, an easily visible alarm indication and provision for convenient field test and metering.

The back of the detector is sealed to block back pressure air flow. The chamber is protected by a fine mesh (0.020"/0.508 mm) screen to minimize problems with dust, dirt, and insects. If cleaning is required, it is easy to remove the cover (with tool CRT-400) and obtain access to the screen and chamber to perform a thorough cleaning.



S911



CS308  
(1412A, 1424A)



California  
State Fire  
Marshal  
7271-1209:102

MARYLAND  
State Fire Marshal  
PERMIT NO. 1925

BSA  
1539-88-SA



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## INSTALLATION

Model 1412/1424 detectors are intended for use with Fire-Lite UL-listed control panels. Easy to install and maintain, this detector is designed for direct surface mounting (mounting bracket included), or mounting to a 4" (101.6 mm) octagonal or smaller box. Easy-to-wire screw terminals allow fast and simple field wiring of in, out, and remote annunciator connections.

Consult Fire-Lite control panel specifications for the maximum allowable loop resistance for the particular four-wire control panel to be used. Installation and maintenance instructions are packaged with each detector.

To prevent wiring mistakes, observe polarities and make certain that each conductor is identifiable. For further information, refer to NFPA 72, and to local Authority Having Jurisdiction.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact Fire-Lite. Phone: (203) 484-7161 FAX: (203) 484-7118



12 Clintonville Road, Northford, Connecticut 06472

**ISO-9001**  
Engineering and Manufacturing  
Quality System Certified to  
International Standard ISO-9001



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## SPECIFICATIONS

**Type:** four-wire ionization.

**Nominal voltage:** 1412 @ 12 VDC; 1424 @ 24 VDC.

**Standby current consumption (maximum):** 100  $\mu$ A.

**Alarm current consumption (maximum):** 77 mA for 1412; 41 mA for 1424.

**Operating voltage range:** 11.3 to 17.3 VDC for 1412; 20 to 29 VDC for 1424.

**Visual LED local alarm:** yes.

**Remote LED annunciator capability:** no.

**Relay contact ratings**, resistive or inductive (60% power factor) load: **Alarm contacts (Form-A):** 2.0 A @ 30 VAC/DC. **Auxiliary contacts (Form-C):** 0.6 A @ 110 VDC; 2.0 A @ 30 VDC; 1.0 A @ 125 VAC; 2.0 A @ 30 VAC.

**Size:** **base diameter:** 5.5" (13.970 cm); **cover height:** 3.12" (7.925 cm); **cover diameter:** 3.3" (8.382 cm).

**Weight:** 0.683 pounds (310 grams).

**Mounting options:** 4" (101.6 mm) square box (1.5" [38.1 mm] minimum depth) with plaster ring; 3.5" (88.9 mm) or 4" (101.6 mm) octagonal box (1.5" [38.1 mm] minimum depth); or 50 mm, 60 mm, or 75 mm boxes. **Wiring:** 12 AWG (3.25 mm<sup>2</sup>) to 18 AWG (0.75 mm<sup>2</sup>), twisted-pair recommended.

**Operating temperature range:** 32°F to 120°F (0°C to 49°C).

**Relative humidity:** 10% to 93% (non-condensing).

**Air velocity rating:** 1,200 feet (365.76 m) per minute maximum.

## PRODUCT LINE INFORMATION

Model	Description
1412	Ionization smoke detector, 12 VDC, direct-wire, four-wire.
1424	Ionization smoke detector, 24 VDC, direct-wire, four-wire.
A77-716B	End-of-line relay module, 12 or 24 VDC.
RA400Z	Remote Annunciator (LED).
MOD400R	Field test module for all of the System Sensor 400 Series smoke detectors.
CRT-400	Removal Tool.

## WIRING DIAGRAM, 1412 & 1424

