

2251-COPTIR ADVANCED MULTI-CRITERIA FIRE DETECTOR



Description

The COPTIR detector combines four complementary technologies into one device to convey accurate fire sensing information for locations where absolute certainty is required.

This plug-in fire detector combines four separate sensing elements in one unit:

1. Photoelectric chamber senses airborne particulate for smoke detection
2. Electrochemical cell technology monitors carbon monoxide (CO) produced by smoldering fires
3. Infrared (IR) sensing measures ambient light levels and flame signatures
4. Thermal detection monitors temperature

The integration of continual monitoring for all four major elements of a fire has resulted in a detector that responds more quickly to an actual fire with the highest immunity to nuisances. This advanced multi-criteria detector normally operates at a high immunity level and changes to become very sensitive to fires as soon as fire characteristics are sensed. In this way, nuisances are monitored and ignored, reducing false alarms.

The detector's onboard intelligence runs advanced algorithms that dynamically adjust detection parameters to respond to the inputs from the sensors, enabling instant response as ambient conditions change.

Features

- Unique ability to detect all four major elements of a fire
- Highest nuisance alarm immunity
- Advanced algorithms interpret and respond to the multiple inputs
- Six levels of sensitivity
- CO sensing for fastest response to slow-developing, smoldering fires
- Fully integrated infrared sensing to support the fire alarm decision
- Automatic drift compensation of smoke sensor and CO cell
- Superior EMI protection
- Twin LED indicators providing 360° visibility
- LEDs can be panel controlled to blink, latch on, latch off
- Built-in test switch

The program changes sensor thresholds, sensor gain, time, delays, combinations, sampling rates and averaging rates. If any sensor fails, the detector automatically adjusts the sensitivity of the remaining sensors. It also recognizes a fault condition.

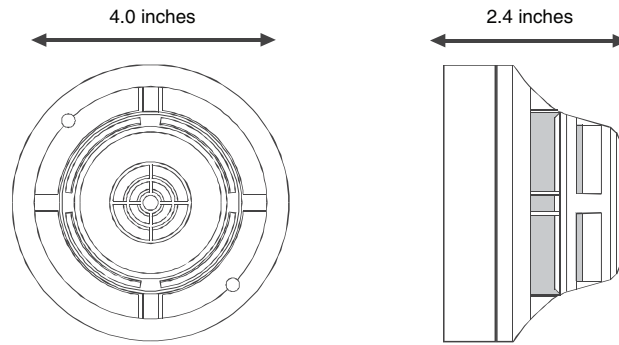
The CO sensing cell has an expected lifetime of approximately six years. The CO cell is not a field-replaceable component. An internal timer signals the control panel to indicate the approach of the CO cell's end of life. Upon expiration, you should contact the system supplier to arrange for replacement of the unit. However, detection is not compromised when the CO cell is expired. The algorithms automatically adjust to properly weight the inputs from the photoelectric, heat and IR sensors.

The IR light sensor recognizes specific situations, such as welding, and makes adjustments rapidly to further reduce the potential for nuisance alarms. The thermal detection function fuses thermistor technology with a software-corrected, linear temperature response to offer exceptional nuisance alarm immunity and excellent fire detection.

NOTE: The CO cell is specifically deployed as a component of smoke detection in this device. This device is **not** listed for applications in which standalone CO detection is required for life safety.



Specifications



Physical Specifications		
Height	2.7" installed in B210LP base or B501 base	
Diameter	6.0" installed in B210LP base; 4.0" installed in B501 base	
Shipping Weight	4.6 oz	
Color	Ivory	
Material	Bayblend FR110	
Operating Humidity Range	10 to 93% relative humidity (non-condensing)	
Application Temperature Range	32°F to 100°F (0°C to 38°C)	
Electrical Specifications		
Operating Voltage Range	15 to 32 VDC	
Maximum Standby Current	300 µA at 24 VDC (one communication every 5 seconds with LED blink enabled)	
Maximum Alarm Current (LED on)	7mA at 24 VDC	
Sensitivity Settings and Suggested Applications		
Level 1	1% / ft of smoke	Very clean environments – laboratories
Level 2	2% / ft of smoke	Clean environments – offices
Level 3	3% / ft of smoke	Moderately clean environments – hotel rooms, dorm rooms
Level 4	3% / ft of smoke with different algorithm processing and weighting of sensor elements	Hotel rooms near a shower, boiler rooms
Level 5	4% / ft of smoke	Equipment rooms, kitchens, paint shops
Level 6	Thermal alarm at 135°F (57°C)	
*Once the CO cell has reached the end of life and enters Photo, Thermal, Infrared (PTIR) mode, the following sensitivities apply:		
Level 1	1% / ft of smoke	Very clean environments – laboratories
Level 2	2% / ft of smoke	Clean environments – offices
Level 5	3% / ft of smoke	Moderately clean environments – hotel rooms, dorm rooms
Level 6	Thermal alarm at 135°F (57°C)	

Ordering Information

Model	Description
2251-COPTIR	Advanced Multi-Criteria Fire Detector
Bases	
B501	4" Flangeless Mounting Base
B210LP	6" Flanged Mounting Base
B200SR	Standard Sounder Base (Compatible with B501BH Series)
B224RB	Relay Base
B224BI	Isolator Base

Note: Add suffix "A" for Canadian ULC listed models.