COPTIR - Photo, Thermal, CO & IR Multi-criteria
Model 2251CTLE

Overview

Features

- Unique, true four sensor Multi-criteria detector

- Fully integrated Infra Red Sensing to support the fire alarm decision

- CO gas sensing for fastest response to slow developing and smouldering fires

- Highest Possible immunity to unwanted alarms

- Compatible with all System Sensor protocols

- Automatic drift compensation of smoke sensor and CO cell

- Twin LED indicators providing 360° visibility

- Wide temperature range

- Built in test switch

- Stable communication with high noise immunity

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Description

The 2251CTLE Multi-criteria Fire Sensor is the latest addition to the Series 200 plus range of fire detectors.

This plug-in fire detector combines 4 separate sensing elements to act as a single unit. CO sensing (using EC cell technology) for monitoring CO products from a smouldering fire, IR sensing for measuring ambient light levels and flame signatures, optical smoke detection and heat detection.

The integration of continual monitoring for all four major elements of a fire has enabled us to create a detector that responds far more quickly to an actual fire and has the highest immunity to nuisances. The operating philosophy behind COPTIR was to configure it so that it normally operates at a high immunity level, changing to become very sensitive to fires when fire characteristics are sensed. In this way transient nuisances are monitored and ignored, reducing the false alarm rate.

2251CTLE is managed by on-board intelligence running some very advanced algorithms, which dynamically adjust the detection profile of the device in response to the inputs from the sensors, enabling it to be re-characterised on the fly as the ambient conditions change. Based upon the sensor signals, the program is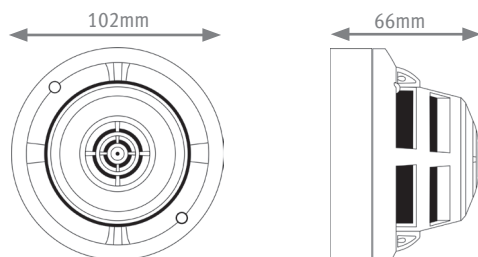 dynamically changing sensor thresholds, changing sensor gain, changing time delays, changing combination, changing sampling rates, changing averaging rates and, if any sensor fails, changing sensitivity of the remaining sensors as well as indicating a fault condition. The IR light sensor helps the detector recognise specific situations such as welding and makes adjustments rapidly in order to further reduce the potential for false alarms caused by nuisances.

The thermal detection function fuses thermistor technology with a software corrected linear temperature response. In areas where the normal daytime activities are likely to create unwanted alarms, the detector can be programmed to operate in a "Heat only" mode, automatically reverting to optical-thermal operation during the unoccupied period. The 2251CTLE is thus able to offer exceptional flase alarm immunity and excellent fire detection.

The 2251CTLE has two integral RED LEDs which provide local visual indication of the sensor status. These LEDs provide a dual function. In the event of an alarm, they are switched ON continuously and can also be programmed to either blink when polled by the panel or remain off during normal conditions. In addition to its integral LEDs, the 2251CTLE can be connected to a Remote LED indicator.

SYSTEM SENSOR®

Architect/Engineer Specifications

2251CTLE COPTIR

102mm | 66mm

Electrical Specifications

Operating Voltage Range	15 to 32Vdc
Maximum Standby Current	200μA at 24VDC (no communications)
Maximum Alarm Current	7mA at 24VDC

Environmental Specifications

Application Temperature Range	-20°C to +55°C
Humidity	15 to 90% relative Humidity (non-condensing)

Mechanical Information

Height	66mm installed in B501 base
Diameter	102mm installed in B501 base
Weight	176g (inc base)
Max Wire Gauge for Terminals	2.5mm^2
Colour	Ivory
Material	Bayblend FR110

Range

IR Limits	0-450 uW/cm2
CO Limits	0-500 PPM

Sensitivity Settings

Alarm Level 1 - COPTIR	Low false alarm resistance, high photoelectric only sensitivity
Alarm Level 2 - COPTIR	Medium false alarm resistance, medium photoelectric only sensitivity
Alarm Level 3 - COPTIR	Standard false alarm resistance, low photoelectric only sensitivity
Alarm Level 4 - COPTIR	High false alarm resistance, low photoelectric only sensitivity
Alarm Level 5 - COPTIR	Very high false alarm resistance, low photoelectric only sensitivity
Alarm Level 6 - COPTIR	Class A1R

Note
The panel threshold should be chosen according to the specific environment. The following would be System Sensor's recommendations: Ultra-clean applications use Level 1 for pre alarm or alarm, Clean Applications use Level 1 for pre alarm and Levels 2 & 3 for alarm Moderate environments use Level 1,2 or 3 for pre alarm and Level 4 for alarm Harsh environments use Level 2 or 3 for pre alarm and Levels 5-6 for alarm

Product Range

Compatible Bases	B500 Series (B501, B501DG, B524RTE, B524IEFT-1)
Other Devices in range	Please refer to other Series 200 *plus* datasheets

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