

# PERTRONIC INDUSTRIES LTD

## DATASHEET

### COPTIR Analogue Addressable Multi-Criteria Detector

#### 2251CTLE-34-IV



## Overview

The COPTIR Multi-Criteria Detector (2251CTLE 34-IV) is an analogue addressable detector which contains four sensing elements:

- » CO sensor: for monitoring carbon monoxide products from a fire
- » Photoelectric sensor: for monitoring smoke
- » Thermal sensor: for measuring temperature
- » IR sensor: for measuring ambient light levels and flame signatures

The detector incorporates intelligent detection algorithms which measure and process individual sensor outputs. The COPTIR detector is highly immune to nuisance sources which may be incorrectly identified as a fire by a single sensing element. However, it is very sensitive to real fires.

Alarm thresholds are configurable in the fire panel. The detector continuously monitors the amount of carbon monoxide, smoke, heat, and infra-red. If a potential alarm condition is detected, the detector reports a sensor level between 1 and 6 to the fire alarm control panel. The panel can be configured to respond as appropriate to the sensor level.

The loop address is configured with rotary address switches on the detector base. The loop address allows the panel to identify each detector's location, in the event of a fire, fault, or for maintenance when chamber contamination reaches an unacceptable level.

The fire panel may be configured to briefly activate the LEDs ("blink") when the detector is polled.



*COPTIR Analogue Addressable  
Plug-In Multi-Criteria Detector  
with B501AUS-W base*

## Features

- » Highest nuisance alarm immunity
- » Highly sensitive to real fires
- » Four-sensor multi-criteria fire detector incorporating CO (carbon monoxide), Photoelectric, Thermal and IR (infra-red) sensing elements
- » Advanced detection algorithms interpret and respond to the sensor signals
- » CO sensing for fastest response to slow-developing, smouldering fires
- » Fully integrated infrared sensing to support the fire alarm decision
- » Automatic drift compensation of smoke sensor and CO cell
- » Rotary decade address switches, 1 to 99 (note 4)
- » Dual LEDs for 360° visibility
- » Optional remote LED indicator available (note 1)
- » Magnet test function bypasses inbuilt delays
- » Compatible with B501AUS, B501AP, and other System Sensor analogue addressable bases
- » Compatible bases provide an optional anti-tamper feature that prevents removal of the detector without a tool
- » ActivFire listed, afp-2143
- » FPANZ listing number PI/337

## Specification

<b>Operating Voltage</b>	15 to 32 V dc
<b>Standby Current</b>	300 µA (note 2)
<b>Maximum Alarm Current</b>	7 mA (LEDs on)
<b>Diameter</b>	102 mm (in B501AUS base)
<b>Height</b>	68 mm (in B501AUS base) 75 mm (in B524IEFT-1 base)
<b>Weight</b>	134 g
<b>Operating Temperature</b>	-20 °C to 55 °C
<b>Humidity</b>	15% to 90% RH non-condensing

### Notes

1. Please refer to the [Remote Indicators RMIND \(AU\)](#) or [Remote LED Indicator DETREM \(NZ\)](#) datasheets for details of Pertronic remote LED indicators.
2. Standby (quiescent) current = 300 µA with LED blink enabled and one poll every five seconds.
3. Remote output current is specified with terminal 3 shorted to terminal 1
4. Although the COPTIR sensor's "tens" address switch has 16 positions, only positions 0 to 9 can be used. Pertronic analogue addressable fire panels must not be configured with COPTIR detectors at addresses 100 to 159.

## COPTIR Detector Sensitivity Levels in Pertronic Fire Panels

Sensitivity	Description
1	3.3 %/m of smoke or greater than 45 ppm CO No time delay on smoke sensor
2	6.6 %/m of smoke No time delay on smoke sensor
3	9.8 %/m of smoke No time delay on smoke sensor
4	9.8 %/m of smoke Up to 10 minute delay on smoke sensor
5	13.1 %/m of smoke Up to 10 minute delay on smoke sensor
6	Heat only mode Rate of temperature rise with fixed temperature threshold at 60 °C

### Life Expectancy

The COPTIR detector's CO cell has a six-year life expectancy. An internal timer monitors the detector's operating time. When the timer records six operating years the detector signals a life-expired LOW FAULT message at the analogue addressable fire alarm control panel. The detector's internal algorithms automatically switch to using only properly-weighted inputs from the photoelectric, thermal and IR sensors. The detector continues to monitor these sensors and signals any potential alarm condition to the fire alarm control panel. However, if no alarm is present the COPTIR detector continues to signal a fault condition. The CO cell is not replaceable. The detector needs replacing when the six year operating life has expired.

### Ordering Information

Product Code	Description
2251CTLE-34-IV	AA CO-Photo-Thermal-IR Multi Sensor, Ivory, excl Base
B501AUS-IV	AA Base, Ivory
B501AUS-W	AA Base, White
B501AUS-BK	AA Base, Black
B524IEFT-1	AA Base with Isolator, Ivory

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