

# PTIR - Photoelectric, Thermal, & Infra Red Multi-Criteria Model 22051TLE

## Overview

### Features

- Unique, true three sensor multi-criteria fire detector incorporating photoelectric, thermal and IR sensing elements
- Fully integrated Infra Red Sensing to support the fire alarm decision
- Includes Series 200 Advanced Protocol
- Available with or without single pole short circuit isolation with status control through the Series 200 Advanced Protocol
- Tri colour LED offering red, green and amber colours
- Rotary decade address switches
- Pure white colour to compliment modern buildings
- 100% mechanical and electrical backwards compatibility
- New Base design to compliment the detector



199t/01

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## Description

The revolutionary Series 200 Advanced range delivers a totally new detector platform that incorporates the new digital Series 200 Advanced Protocol. The new Protocol delivers more devices on the loop and gives greater control, configurability and device management whilst enabling the overall system to be optimised to the location and use of the building with far greater flexibility than ever before.

The 22051TLE multi-criteria, multi-sensor Photo Thermal Infra Red (PTIR) detector is the environmentally friendly alternative to the ionisation detector, a technology that is now over sixty years old. The PTIR offers comparable speed of response to the ionisation technology for a fast flaming fire and is less susceptible to false alarms. It can be deployed with confidence in locations where the main risk is from fast-developing flaming fires. PTIR moves the goalposts in the fight against false alarms in the core detector space by delivering enhanced false alarm immunity. In addition to being an effective alternative to ionisation units, PTIR offers better performance over the alternative technologies of dual angle or dual wavelength optical detectors and photo-thermal detectors.

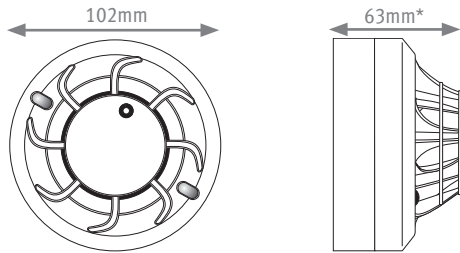
The integration of continual monitoring for all three major elements of a fire enables the 22051TLE respond far more quickly to an actual fire and has the highest immunity to nuisances. Based upon the sensor signals, the program is dynamically changing sensor thresholds, changing sensor gain, changing 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 sensing elements of the 22051TLE are panel controllable so the sensitivity thresholds of each element can be changed by the panel offering the ability to customise the device for the changing use of the area it is protecting. The 22051TLE has two integral tri-colour LEDs that provide 360° local visual indication of the device status. The LEDs are programmable with static or blinking red, amber and green status indications available.

All Series 200 Advanced detectors are environmentally friendly and meet the WEEE and RoHS legislative requirements, minimising end of life disposal costs, and are mechanically and electrically backwards compatible with existing Series 200 plus devices.

## Architect/Engineer Specifications

22051TLE/22051TLEI



### Electrical Specifications - Standard Product (22051TLEI)

|   |  |
|---|--|
| Operating Voltage Range                     | 15 to 32Vdc  |
| Maximum Standby Current                     | 200µA at 24VDC (no communications) / 300µA at 24VDC (LED blink enabled, once every 5s) |
| Led Current                                 | Red: 3.5mA at 24Vdc<br>Green: 7.0mA @ 24Vdc<br>Yellow: 10.5mA @ 24Vdc                  |
| Remote Output Voltage                       | 22.5Vdc @ 24Vdc  |
| Remote Output Current                       | 10.8mA @ 24Vdc   |
| Additional loop resistance using the B501AP | typ 20mohm (max 30 mohm)   |

### Electrical Specifications - Isolator Version (only found in 22051TLEI)

|                            |                                      |
|----------------------------|--------------------------------------|
| Operating Voltage Range    | 15 to 28.5Vdc                        |
| Isolation Current          | 15mA at 24VDC                        |
| Maximum Continuous Current | 1A (Switch Closed)                   |
| Additional loop resistance | typ 80 mohm @24V (max 170mohm @ 15V) |

### Environmental Specifications

|                   |  |
|-------------------|--|
| Temperature Range | -30°C to +70°C †                             |
| Humidity          | 10 to 93% relative Humidity (non-condensing) |

### Mechanical Information

|                              |                              |
|------------------------------|------------------------------|
| Height                       | 63mm installed in B501 base  |
| Diameter                     | 102mm installed in B501 base |
| Weight                       | 102g (inc base)              |
| Max Wire Gauge for Terminals | 2.5mm <sup>2</sup>           |
| Colour                       | White                        |
| Material                     | PC/ABS                       |

### Sensitivity Settings

|               |   |
|---------------|---|
| Alarm Level 1 | Low false alarm resistance, high photoelectric only sensitivity. 1%/ft smoke      |
| Alarm Level 2 | Medium false alarm resistance, medium photoelectric only sensitivity. 2%/ft smoke |
| Alarm Level 3 | Standard false alarm resistance, low photoelectric only sensitivity. 3%/ft smoke  |
| Alarm Level 4 | High false alarm resistance, low photoelectric only sensitivity. 3%/ft smoke      |
| Alarm Level 5 | Very high false alarm resistance, low photoelectric only sensitivity. 3%/ft smoke |
| Alarm Level 6 | 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, B524HTR, B524IEFT-1), B501AP   |
| Other Devices in range | Please refer to other Series 200 Advanced Datasheets<br>22051E / EI, 22051TE / TEI, 52051RE/REI, 52051E/EI, 52051HTE /HTEI |
| Other Colours in range | Ivory  |

Note \* When installed in a B501AP base

† Do not install detectors in locations where normal ambient temperature exceeds 50°C

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Installation information: in order to ensure full functionality, refer to the installation instructions as supplied.