LOW PROFILE FIRE DETECTORS - INTELLIGENT
SOTERIA® DIMENSION COMMERCIAL

SOTERIA DIMENSION COMMERCIAL DETECTOR

FEATURES

- Low profile design
- Utilises digital CoreProtocol® communications
- Compatible with Discovery® and XP95® systems*
- Integrated switchable isolator as standard
- 8-way DIL switch addressing
- Drift compensation
- FasTest® for quicker testing
- Tricoloured LED status indicator
- Polycarbonate moulding for colour stability and strength
- Locking mechanism (grub screw)
- Comprehensively tested to exceed EN54-7 and EN54-17 standards

***Note: *****Not all features may be available when Soteria devices are connected to an XP95 or Discovery fire control panel**. *Please check with Technoswitch for compatibility.*

APPROVALS

- EN54-7, EN54-17, CPR, LPCB, FG, and SBSC

DESCRIPTION

SOTERIA® Dimension is a range of sleek, flat optical fire detectors for flush mounting, using chamberless fire detection technology. The range offers a low profile Optical Detector designed for commercial environments with high aesthetic requirements and a low profile Optical Detector, designed for custodial and care environments. Both detectors are flush mounted with a Mounting Box.

The Soteria Dimension Optical Detector contains two daylight filtered photo-diodes and three IR emitters in different positions and angles. Different combinations of these are used to act as smoke sensors and proximity sensors, to measure the smoke level at the detector and to detect any physical obstruction or interference of the detector. Since this detector is chamberless, an IR LED emits light outside the detector. The light is scattered by smoke back towards the detector and registered by a photo-diode.

A pair of microprocessors control these sensors, setting the sensor timings and using a digital phase-sensitive detection algorithm to reduce noise and the effect of background light. They then provide digital filtering for transient rejection, compensation for drift and temperature, and ultimately make an alarm decision.

The mode of operation may be selected at the fire control panel – see Table 1.

Anti-abrasion coated windows make the detector more resistant to physical damage.

The device has a polycarbonate front plate, which can be locked into place with a grub screw locking mechanism.

Three LEDs provide status indication as detailed in the Technical Specifications overleaf.

The new FasTest mode facility on the Soteria Dimension Optical Detector, which can only be enabled on compatible fire control panels, facilitates quicker testing of detectors with appropriate test equipment. The FasTest disables a portion of the signal processing algorithm and also the built-in proximity sensor to allow for a faster detector response, whilst ensuring that the detectors absolute sensitivity remains identical to that of Mode 3 (refer to Table 1). This helps to reduce commissioning time.

	SOTERIA Dimension Optical Detector Operating Modes			
Mode	Response Value		Minimum Time to Alarm	Minimum Time to Proximity Fault
	%/m*	dB/m**	Seconds	Seconds
1	4.8	0.27	15	10
2	4.8	0.27	30	10
3	4.8	0.27	15	20
4	4.8	0.27	30	20
5	4.8	0.27	30	30

- Table 1: Operating Modes

  * Tested in grey smoke
  ** Tested in oil mist to EN54-7 standard

TECHNOSWITCH
FIRE DETECTION & SUPPRESSION

SPECIFICATIONS

Typical at 24 V, +25 °C and 50% RH unless otherwise stated

Detection Principle	Photo-electric light scattering
Sensor Configuration	Chamberless detector with two photo- diodes. Microcontroller provides sensor timings, digital signal processing and alarm decision.
Sampling Frequency	Once per second
Terminal Functions	–L1 in Loop in negative
(Note: L1 & L2 are polarity sensitive)	–L1 out Loop out negative
	+L2 Loop in and out positive
	+R Remote indicator positive connection (internal connection to positive)
	–R Remote indicator negative connection (4.7 mA Max)
Supply Voltage	(Vmin–Vmax) 17 – 35 V DC
Digital Communication Protocol	XP95, Discovery compatible and CoreProtocol ready
	5 - 13 V peak to peak
Quiescent Current	1 mA
Power-up Surge Current	1 mA
Max Power-up Time	15 s
Alarm Current, LED Illuminated	4.5 mA
Max Loop Current through Isolator	2 A
Clean-air Analogue Value	23 +4/-0
Alarm Level Analogue Value	55
Status indicator	**Alarm** Red
	Fault Flashing Yellow
	Isolated Yellow
	Poll Flashing Green
Operating Temperature	–40 °C to +55 °C
Humidity	0% to 95% RH (no condensation or icing)
Effect of Atmospheric Pressure	None
Effect of Wind Speed	None
Vibration, impact and Shock	EN54-7
IP Rating	IP55 – rating not EN54 approved
Dimensions (mm)	**Detector Only** 140 Ø x 38.2 depth
	Detector with Mounting Box 140 Ø x 71 depth
Weight (g)	**Detector Only** 148 g
	Detector with Mounting Box 273 g
Materials	**Housing** White flame-retardant polycarbonate
	Terminals Nickel plated stainless steel

ORDERING INFORMATION

Product Code	Product Description
AP-DIM-SD	Soteria Dimension Commercial Detector
AP-DIM-IN	Soteria Dimension Industrial Detector
AP-DIM-MB	Soteria Dimension Mounting Box

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