

Fire detection and evacuation solutions that save lives.

# Soteria Heat Detector

## Features

- Dual Heat Sensors
- Integrated Short Circuit Isolator
- Tri-coloured LED status indicator
- Universal XPERT card addressing
- Locking mechanism (grub screw)
- Comprehensively tested to exceed EN 54-5
- Approved to AS7240-7 and FPANZ4512 listed

## Description

The Soteria Heat Detector features two heat sensors located laterally to ensure accurate heat detection in all orientations. The low profile design of the Soteria Heat Detector is sleek and evolutionary, with a 360° LED indicator which illuminates red when in alarm, yellow to indicate a fault and green to indicate protocol activity.

- Dual heat sensors to ensure an accurate response in all orientations
- Seven operating modes (Mode 8 not used)

## Operation

Heat detector categorisations defined by the standard are shown in Table 1, each category specifies an application temperature and a static response temperature. Application temperatures define the environmental temperatures the detector can be expected to experience in non-fire conditions. Categories should be selected so that the maximum application temperature is not exceeded. The static response temperature indicates the temperature which the device will produce an alarm signal. In addition to the basic categorisation a detector may be given an “R” or “S” suffix.

The “R” suffix indicates that the detector has been designed to have a rate-of-rise characteristic. “R” suffix detectors will produce an alarm signal when exposed to a rapid temperature increase. Slower temperature rises will not generate an alarm unless they exceed the static response temperature. A “R” suffix detector will therefore give a rapid fire response even when starting from an ambient temperature well below its typical application temperature.

The “S” suffix indicates that the detector will not produce an alarm signal below its minimum static response temperature even when exposed to high rates of rise of air temperature.



## Item Numbers

Description	Item No (AS/NZ)	Part No (EN)
Heat Detector	4106-2104	SA5100-400

Soteria Heat Detectors have five available modes available to the Ampac FireFinder Plus which correspond to five “categories” as defined in the standard. Each category corresponds to a different response behaviour and is designed to be suitable for a range of application temperatures and fire risks. The static response temperatures for all modes are given in Table 1.

## Application

Fire detectors should always be installed in accordance with all local and national laws and codes of practice.

A “R” suffix detector is suitable for areas such as unheated warehouses in which the ambient temperature may be very low for long periods.

A “S” suffix detector is suitable for areas such as kitchens and boiler rooms, where large rapid temperature changes are considered normal.

**Table 1: Soteria Heat Detector response modes**

Mode	Category EN 54-5/ AS7240-5	Application Temp		Static Response Temp		
		Typical	Max	Min	Typical	Max
1	A1R	25°C	50°C	54°C	57°C	65°C
2	A2R	25°C	50°C	54°C	60°C	70°C
3	S2S	25°C	50°C	54°C	60°C	70°C
4	CR	55°C	80°C	84°C	90°C	100°C
5	CS	55°C	80°C	84°C	90°C	100°C

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# Soteria Heat Detector

Specifications	
Detection Principle	Heat sensitive resistance
Sensor configuration	Thermistor
Sample frequency	Once per second
Terminal Functions (Note: L1 and L2 are polarity sensitive)	-L1 in    Loop (isolated) negative
	-L1 out    Loop (isolated) negative
	+L2        Loop in and out positive
	+R         Remote indicator positive connection (internal connection to positive)
	-R         Remote indicator negative connection (4.7 mA maximum)
Supply voltage (Vmin-Vmax)	17 - 35 V dc
Digital Communication	XP95, Discovery and CoreProtocol compatible
Modulation voltage	5 - 13 V peak to peak
Quiescent Current	Isolated detector: 350 $\mu$ A
Power-up surge current	560 $\mu$ A
Maximum power-up time	10 seconds
Alarm current, LED illuminated	3.5 mA
Alarm level analogue value	55
Status Indicator	Alarm - Red Fault - Flashing Yellow Isolated - Yellow Poll - Green (configurable at panel)
Operating temperature	-40°C to 70°C
Humidity	0% to 95% RH (no condensation or icing)
Vibration, impact and shock	EN 54-5:2017
IP rating	IP44
Standards & Approvals	EN 54-5:2017, CPR, LPCB, VdS, BOSEC, FG, SBSC AS7240-7 and FPANZ listed AC/357
Dimensions	100 mm diameter x 38.5 mm height
Weight	90 g (+/- 10 %)
Materials	Housing: White flame-retardent polycarbonate Terminals: Tin plated stainless steel

All data is supplied subject to change without notice. Specifications are typical at 24V, +25°C and 50% RH unless otherwise stated.

## Electrical Considerations

The Soteria detector is designed to be connected to a two-wire loop circuit carrying both data and power. All Soteria Detectors feature a short-circuit isolator integrated into the head.

## Device Addressing

A universal XPERT 8 card is supplied with all XPERT 8 Intelligent Mounting Bases. Using a coding guide, pips on the card are removed to set the address of the detector. This simplifies and speeds up installation, commissioning and maintenance. The address location remains the same no matter how often detectors are replaced.

## Backward Compatibility

Soteria detectors have been designed to operate on XP95 and Discovery loops. This allows for Soteria detectors and bases to operate on existing systems and for Soteria detectors to operate on XP95 and Discovery bases (XPERT 7 Intelligent Mounting Base). It should be noted that not all features of Soteria will be available when used with XP95 or Discovery fire systems.

## EMC Directive 2014/30/EU

The Soteria Heat Detector complies with the essential requirements of the EMC Directive 2014/30/EU, provided that it is used as described in this datasheet.

A copy of the Declaration of Conformity is available on request.

Conformity of the Soteria Heat Detector with the EMC Directive does not confer compliance with the directive on any apparatus or systems connected to it.

## Construction Products Regulation (EU) 305/2011

The Soteria Heat Detector complies with the essential requirements of the Construction Products Regulation (EU) 305/2011.

A copy of the Declaration of Performance is available on request.