

Soteria UL

Multi-Criteria Detector (Smoke/Heat)



Product overview

| | |
|------------------------------|---|
| Product | Soteria UL Multi-Criteria Detector (Smoke/Heat) |
| Part No. | SA5150-750 |
| Digital Communication | Discovery and CoreProtocol® |

Approvals



Product information

The Soteria UL Multi-Criteria Detector (Smoke/Heat) is Apollo's most advanced detector offering suitable for a wide range of applications. It uses Purelight® high-tech smoke sensing technology to detect smoke particles entering the chamber and is fitted with two thermistors for detecting heat. It can be switched to detect smoke, heat or a combination of both, offering greater flexibility, fast detection and advanced false alarm management.

- Approved to UL 268 7th edition and UL 521
- Built-in isolator
- FasTest™ for quicker testing of detectors
- Purelight® optical technology for enhanced smoke detection and false alarm management
- Drift compensation
- Used with CoreProtocol it provides additional advanced features for complex fire detection systems
- Backward compatible with Discovery & CoreProtocol systems (254 addresses with CoreProtocol)
- Base locking mechanism (grub screw)
- In-built self test
- XPERT card addressing
- Capable of soft addressing
- Dual heat sensors

Technical data



CAUTION: System compatibility
The Soteria UL Multi-Criteria Detector (Smoke/Heat), Part No. SA5150-750 should only be used with compatible fire control panels.

This detector is a direct replacement for the 58000-750 Discovery UL Multisensor Detector (Smoke/Heat)
All data is supplied subject to change without notice. Specifications are typical at 24 V, 73 °F and 50 % RH unless otherwise stated.

| | |
|--|---|
| Digital communication protocol | Discovery and CoreProtocol |
| Supply wiring | Two wire supply, polarity sensitive |
| Sensitivity | 1.2 - 2.1 %/ft |
| Supply voltage (Vmin-Vmax) | 17 V - 28 V dc |
| Sampling frequency | Once per second |
| Modulation voltage | 5 V - 9 V peak to peak |
| Supervisory current | 500 µA |
| Switch-on surge current | 1.0 mA |
| Alarm/Operated current, LED On | 4.0 mA |
| Status indicator | Alarm Red Fault Flashing Yellow Isolate Yellow Poll Flashing Green |
| Additional Remote LED Current | 5 mA maximum |
| Product operating temperature | 32 °F to 131°F (0°C to 55°C) |
| Heat element rating (Mode 5 Only) | 115 °F (47 °C) |
| Effect of atmospheric pressure | None |
| Air velocity | 0 - 300 fpm |
| Humidity | 0% to 95% RH (no condensation or icing) |
| IP rating | IP44 |
| Standards and Approvals | UL 268 7th Edition, UL 521, ULC S529, ULC S530, FM 3210 |
| Dimensions | 4 in.(100 mm) diameter x 1.51 in. (38.5 mm) height (1.98 in. (50.5) mm height with XPERT8 Intelligent Mounting Base) |
| Weight | 2.93 ozs. (83 g) |
| Materials | Housing: White flame-retardant polycarbonate Terminals: Tin plated stainless steel |
| Maximum spacing (Mode 5 Only) | 50 ft (15.24 m) |

Note: For isolator data refer to Short-Circuit Isolation datasheet PP2090, available from www.apollo-fire.co.uk

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Table 1: Soteria detector feature availability

| | Protocol | |
|--------------------------------|-----------|--------------|
| | Discovery | CoreProtocol |
| Drift compensation value | ✓ | ✓ |
| Rapid compensation | ✓ | ✓ |
| Sensitivity modes | ✓ | ✓ |
| Conventional alarm | ✓ | ✓ |
| Integrated isolator | ✓ | ✓ |
| Controllable isolator* | ✗ | ✓ |
| Soft addressing | ✗ | ✓ |
| Flashing polling remote | ✗ | ✓ |
| Tamper | ✗ | ✓ |
| Auto-addressing | ✗ | ✓ |
| FasTest® | ✗ | ✓ |
| Live sensor values | ✗ | ✓ |
| Group control of remote output | ✗ | ✓ |

Notes:

1. Not all features of Soteria will be available when used with Discovery fire control panels.
2. *Only available when device is mounted on an Intelligent Base, Part No. SA5000-210.

Device addressing

A Universal XPERT card is supplied with all Intelligent Mounting Bases.

Table 2: Address ranges

| | XPERT 7 card | Universal XPERT card |
|--------------------|--------------|----------------------|
| Discovery protocol | 1 - 126 | 1 - 126 |
| CoreProtocol | 129 - 254 | 1 - 254 |

When Soteria devices are used with CoreProtocol, device auto-addressing can be enabled by fire control panels that have been designed to incorporate this feature.

Table 3: Isolated detector data

| | |
|--|--------|
| Maximum loop current (I c max; L1 in/out) | 1 A |
| Maximum series resistance (Z c max; L1 in/out) | 100 mΩ |

Operating modes

Soteria multisensor detectors on a CoreProtocol system give the choice of five operating modes which respond as follows:

- Modes 1, 3 and 4 - Multi-Criteria response
- Mode 2 - Optical only response
- Mode 5 - Heat only response

Operation

The low profile design of the Soteria UL Multi-Criteria Detector (Smoke/Heat) is sleek and evolutionary, with a 360° LED indicator which illuminates red when in alarm.

At the heart of the smoke sensor is Purelight® Sensing Technology which incorporates:

- Cone technology combined with a high-intensity infrared LED to provide stability and accurate sensitivity to smoke.
- A sophisticated dynamic algorithm, providing transient rejection and compensation for drift whilst maintaining accurate sensitivity.

Signals from the smoke chamber and temperature sensors are independent and represent the smoke level and air temperature respectively in the vicinity of the detector; the detectors micro-controller processes both signals. The temperature signal processing extracts only rate-of-rise information for combination with the smoke signal.

The optical sensor will trigger an alarm at 1.2 %/ft and the heat sensor at 69.8 °F (21 °C) rise. Minimum time to alarm is ten seconds.

The detector will not respond to slow increases in temperature, but a large, sudden change can cause an alarm without the presence of smoke.

The sensor will respond to smoke or heat, or a combination of both.

System compatibility

Soteria detectors has been designed to operate on Discovery and CoreProtocol loops. This allows for Soteria detectors and bases to operate on existing systems.

It should be noted that not all features of Soteria will be available when used with Discovery fire control panels.

Maintenance and service

Soteria detectors have been designed with a comprehensive set of features to support maintenance and service, from self test capabilities to drift compensation warnings on dirty detectors.

Compatible Bases

| Part Number | Product Name |
|-------------|--|
| SA5000-210 | Soteria UL Base - 4" |
| SA5000-230 | Soteria UL Base - 6" |
| SA5300-800 | Soteria UL CO Sounder Base - 6" High Frequency |
| SA5300-802 | Soteria UL Sounder Base - 6" High Frequency |
| SA5300-805 | Soteria UL CO Sounder Base - 6" Low Frequency |
| SA5300-806 | Soteria UL Sounder Base - 6" Low Frequency |

*non-isolating bases

| | Smoke | Multi-Criteria | Heat |
|--|--|--|---|
| <i>For existing Discovery UL and new installations choose:</i> | SA5150-650 Soteria UL Smoke Detector | SA5150-750 Soteria UL Multi-Criteria Detector (Smoke/Heat) | SA5800-450 Discovery/Soteria UL Heat Detector |

Built-in isolators for Soteria UL Smoke and Soteria UL Multi-Criteria Detectors only.

This datasheet is to be used for marketing purposes only. All information on this datasheet is subject to change without notice. Technical information about installation can be found in the product installation guide which can be found on our website.