

Soteria UL

Smoke Detector



Product Overview

Product	Soteria UL Smoke Detector
Part No.	SA5150-650
Digital Communication	Discovery and CoreProtocol®

Product Information

The Soteria UL Smoke Detector is Apollo's most advanced detector offering suitable for a wide range of applications. It utilizes Purelight® high-tech sensing technology that detects smoke particles entering the chamber and substantially reduces the possibility of false alarms.

- Approved to UL268 7th edition
- Built-in isolator
- 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
- Capable of soft addressing
- Backward compatible with Discovery & CoreProtocol systems (254 addresses with CoreProtocol)
- Base locking mechanism (grub screw)
- In-built self test
- XPERT card addressing
- FasTest® for quicker testing of detectors

Manufacturer's Specification



CAUTION: System compatibility
The Soteria UL Smoke Detector, Part No SA5150-650 should only be used with compatible fire control panels.

This detector is a direct replacement for the 58000-650 Discovery UL Smoke Detector.

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)
Effect of atmospheric pressure	None
Air velocity	0 - 300 fpm
Humidity	0% to 95% RH (no condensation or icing)
IP rating	IP44
Dimensions	4 in. (100 mm) diameter x 1.41 in. (36 mm) height (1.88 in. (48) mm height with XPERT Intelligent Mounting Base)
Weight	2.93 ozs. (83 g)
Materials	Housing: White flame-retardant polycarbonate Terminals: Tin plated stainless steel

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

Operation

The low profile design of the Soteria UL Smoke Detector 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.

The smoke chamber of the detector is a unique cone shape which serves to reduce any stray reflection. This ultra dark internal light chamber also contains a high-intensity infra-red LED that is highly sensitive to smoke particles.

When smoke enters the chamber, infra-red light is scattered and registered by the photodiode and amplifier that are included in an application-specific integrated circuit (ASIC). This circuit ensures long term reliability, even in extreme conditions.

System compatibility

Soteria detectors have 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.

Maintenance has to be done in accordance with all applicable standards. Clean the detector externally using a soft damp cloth.

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
For existing Discovery UL and new installations choose:	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.