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*	

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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

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.