SH-003
Smoke / Heat Detector - High Temp Kit
Installation Instructions

Revision 1.3

Maretron, a Littelfuse Brand
120 Intracoastal Pointe Dr.
Jupiter, FL 33477 USA
http://www.maretron.com

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Revision History

Rev.	Description
1.0	Original document
1.1	Verbiage updates and images
1.2	Revised wiring instructions
1.3	Updated content layout, verbiage changes, images, contact details

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SH-003 - Smoke / Heat Detector High Temp Kit Installation Instructions

1 Overview

The SH-003 kit can be used for general smoke / heat detection; however, it is ideal for use in high temperature areas such as engine rooms. The SH-003 kit contains a Smoke/Heat Detector, a Sounder, and an Auxiliary Relay that will interface into a single channel of a Maretron SIM100.

1.1 Unpacking the Box

The SH-003 Kit is comprised of 3 components and 2 mounting bases.
Each component provides its original manufacture's installation instructions and guidelines.
* Please retain these documents to provide full equipment specifications and troubleshooting.

- Apollo ORB-OH-43001-MAR Optical/Heat Multi-sensor Detector with Base ORB-MB-00001
- Klaxon PSS-0039 Sounder Module with Base ORB-RB-40004-MAR
- Cranford Controls RIU-R24 Auxiliary Relay
- 8KΩ EOL (End of Line) Resistor for circuit supervision

1.2 Temperature Operating Range

The supported temperature range for the SH-003 Kit is -13°F to 158°F (-25°C to 70°C)

1.3 Electrical Operating Range

For the complete installation of the SH-003 Kit, requires **24V DC** source supply.

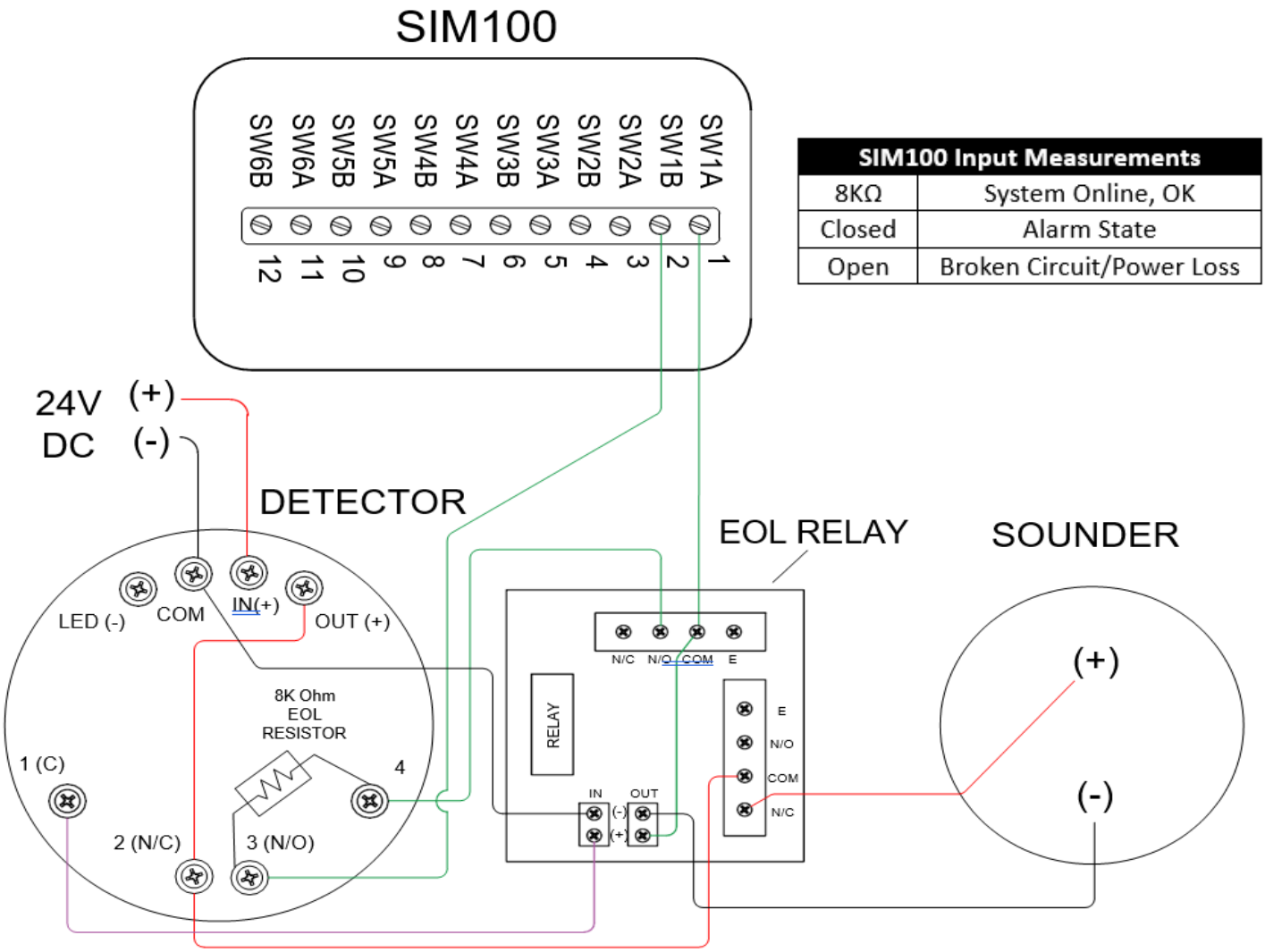
- Apollo ORB-OH-43001-MAR Optical/Heat Detector (5-33V DC)
- Klaxon PSS-0039 Sounder Module (9-60V DC)
- Cranford Controls RIU-R24 Auxiliary Relay (18-40V DC)

2 Choosing a Mounting Location

Please use the following steps as a guide for installation of the SH-003 Kit.

1) Install SH-003 Kit in accordance with ABYC and NFPA guidelines for fire and smoke detection based on your application.
2) Never exceed 900 sq. ft. of area for any single detector's range.
3) Detector and sounder can be ceiling or wall mounted directly or fastened to various sizes of standard electrical boxes.
4) Pre-Mount and wire the detector and sounder bases before installing the head units. Twist head units (detector unit and sounder unit) onto respective bases in a clockwise motion. To remove, twist head in a counterclockwise motion. Both detector and sounder heads are keyed to the base.
5) Wire SH-003 in accordance with ABYC or NEC guidelines to select correct wire size (22-16 AWG) and any other applicable wiring guidelines based on your application type.
6) The application of dielectric grease on the detector and sounder base connections is recommended.
7) Do not mix high current harnessing with fire detection harnessing. For the best wiring choice, choose a marine grade, tinned copper, 16 AWG twisted pair cable.
8) The detector comes with a pre-installed dust cover. Maintain cover affixed to detector throughout vessel construction or until first use.

3 Electrical Wiring



SIM100 Input Measurements	
8KΩ	System Online, OK
Closed	Alarm State
Open	Broken Circuit/Power Loss

Note:
These wiring instructions show connections to channel 'SW1' of the SIM100; however, connections could be made to other channels of the SIM100 using the same method. The SIM100 can support up to 6 detector areas.

4 Detector Behavior

When a detector is triggered or in *Test Mode* the detector's sounder will sound, the detector base relays will change state, and the integrated Red LED will illuminate solid.

To reset an alarm state or exit *Test Mode* on a detector, the detector's power will need to be cycled.

LED Reporting Modes			
S/H Detector Unit		**EOL Relay**	
Power-Up	No LED	Standby	Red LED ON
Standby (Detector OK)	Red LED will periodically blink	Loss of Power/Alarm State	Red LED OFF
Alarm State	Red LED will illuminate solid		

5 Configuration

Provisioning a SIM100 while connected to the SH-003 Kit requires an initial setup. This setup can be completed using either a Maretron gateway paired with a PC running Maretron's N2KAnalyzer® V3 application or by using any of the Maretron DSM Series displays. The same programming features are available using either of the methods illustrated above. The SIM100 offers 6 isolated channels for monitoring Open, Closed, or Error status behavior of a connected device. When programming a single channel of the SIM100, you will apply a 'Name' to the circuit connection and illustrate whether the End-of-Line (EOL) Resistor is connected within that circuit.

The EOL Resistor is an 8KΩ resistor that is positioned near the load/device that is being monitored across the two connections. If this feature is enabled for the individual channel, the SIM100 provides a 'sample' voltage to the channel in order to validate the integrity of the circuit up to the load/EOL Resistor.

The SIM100 module will broadcast an NMEA 2000® *Switch Status Indication* (PGN 127501) for that channel. The NMEA 2000® message broadcast for each SIM100 channel *'Switch Status Indication'* is broadcast according to the SIM100's Instance and Channel number. In addition to the status report for each channel, the SIM100 with report both a Switch Counter (PGN 130836) and a Switch Timer (PGN 130837) parameter. This will provide the user with additional information for each connected device to take into account how many times the status switched state and the duration in state.

6 Equipment Testing

To test an SH-003 system connected to a SIM100, the NMEA 2000 network for SIM100 and the SH-003 detector will need to be powered. After power-up, the respective NMEA 2000® *Switch Status Indication* should indicate 'Off' (Normal State). If either detector power or any connection to SIM100 is lost for the channel, the respective NMEA 2000® *Switch Status Indication* should indicate 'Error' (Maintenance Required). If a detector is in an *Alarm State,* the respective NMEA 2000® *Switch Status Indication* should indicate 'On' (Alarm State). Perform additional testing and maintenance routine as outlined in the provided '*Apollo Orbis Marine Multi-Sensor Detector Instructions*'.

7 Technical Support

For installation support, please contact:

Maretron, a Littelfuse Brand
120 Intracoastal Pointe Dr.
Jupiter, FL 33477 USA
http://www.maretron.com
E-mail: support@maretron.com
Toll-Free: (866) 550-9100
Phone: (602) 861-1707