

# **Installation Manual SCI** Short Circuit Isolator



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## **NOTICE TO THE INSTALLER**

This manual provides an overview and the installation instructions for the Short Circuit Isolator SCI. This SCI is only compatible with addressable fire systems that utilize the Potter/Nohmi addressable protocol.

All terminals are power limited and should be wired in accordance with the requirements of NFPA 70 (NEC) and NFPA 72 (National Fire Alarm Code). Failure to follow the wiring diagrams in the following pages will cause the system to not operate as intended. For further information, refer to the control panel installation instructions.

The module shall only be installed with listed control panels. Refer to the control panel installation manual for proper system operation.

### **1.Description**

The SCI is used to provide additional reliability for a fire protection system by isolating a segment of an SLC loop in which a short circuit has occurred. This makes it possible for the remainder of the loop to provide normal monitoring functions.

SCI employs one red LED to indicate the status. In normal condition, the LED is deactivated. When the short circuit is happened, SCI will cut off the short circuit and turn on the LED. Once the short is removed, the SCI will automatically restore the loop to the intended operating condition.

## 2. Wiring diagram

### 1. Class B (Style 4) Wiring

#### \*Class B (Style 4) Wiring

1. Resistance of wiring connected to the SCI must not exceed 10 ohms.
2. A maximum of 50 addressable detectors and addressable modules can be connected to a SCI.

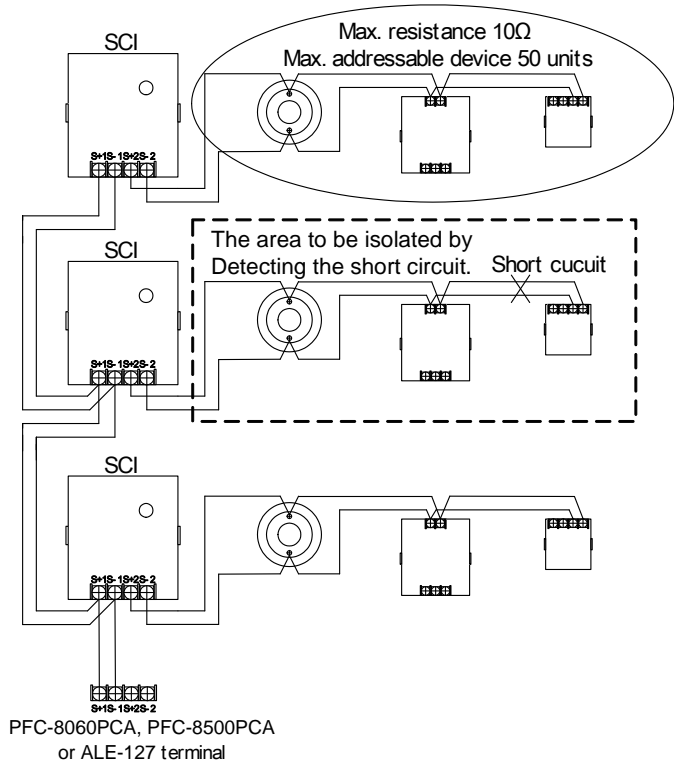


Figure 1: Class B (Style 4) Wiring Diagram

### 2. Class A (Style 6) Wiring

#### \*Class A (Style 6) Wiring

1. The wiring resistance between two Short Circuit Isolators must not exceed 10 ohms.
2. A maximum of 50 addressable detectors and addressable modules can be connected between any two SCIs.

The wiring resistance between an SCI and another SCI shall be less than 10 Ω

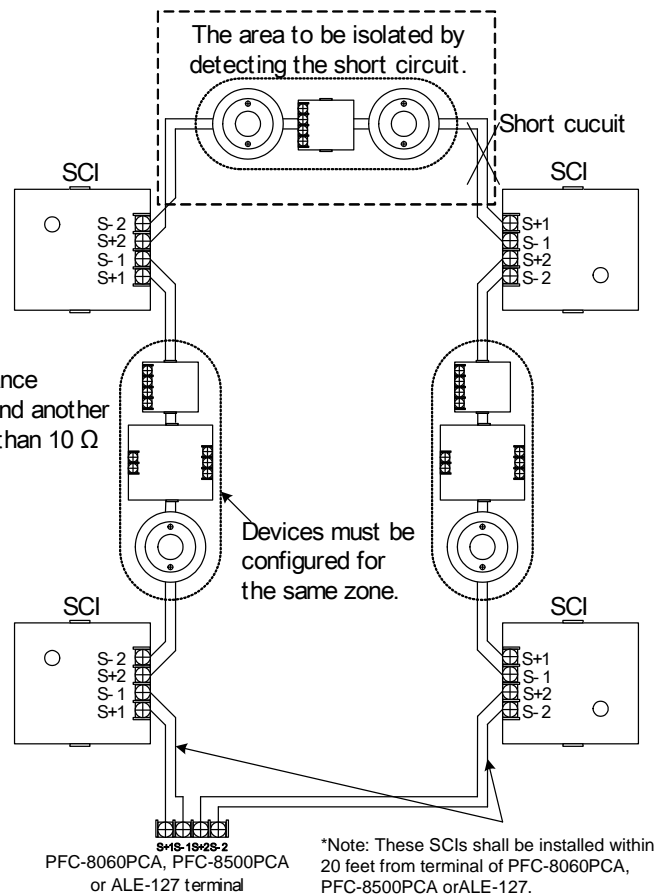


Figure 2: Class A (Style 6) Wiring Diagram

### 3. Class A (Style 7) Wiring

Note: For Class A (Style 7), each device close nipped with the SCI and all the wirings between SCIs and addressable devices must be installed in conduits.

#### \* Class A (Style 7) Wiring

1. The wiring resistance between two Short Circuit Isolators must not exceed 10 ohms.

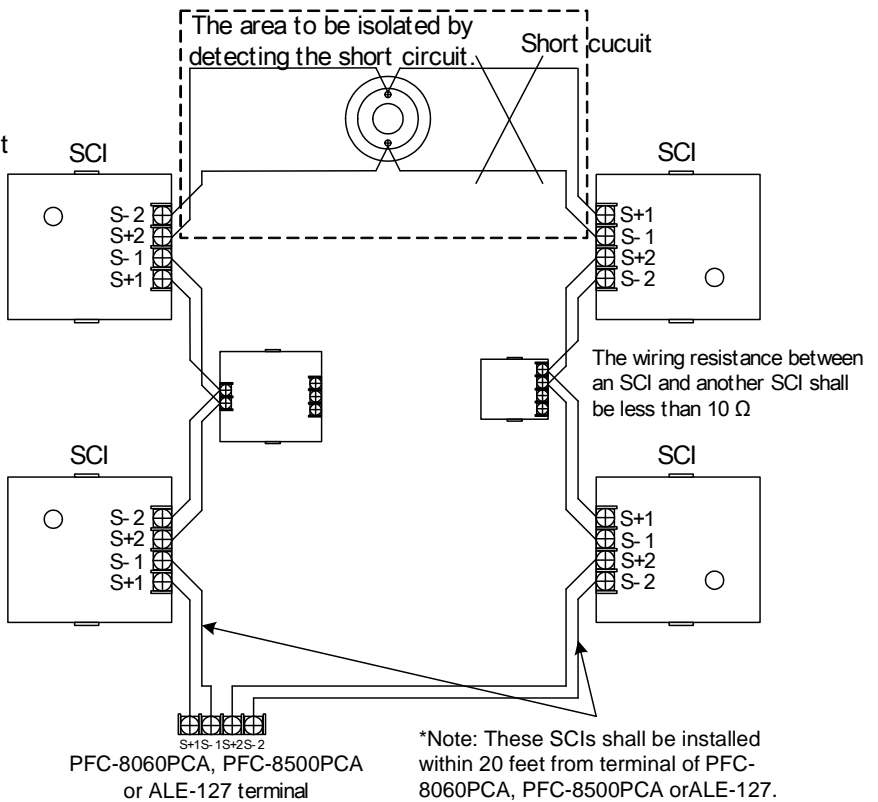
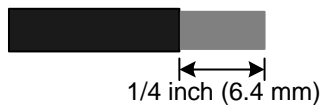


Figure 3: Class A (Style 7) Wiring Diagram

Note:

- 1) SLC loop wiring (S+1, S-1, S+2 and S-2) are power limited.
- 2) Wiring for terminals S+1, S-1, S+2, S-2 are supervised.
- 3) When multiple zones are configured to Notification Appliance Circuits (NACs), those NACs must be protected by SCIs per zone.
- 4) All wiring is between #14 (2.08 mm<sup>2</sup>) (max.) and #22 (0.32 mm<sup>2</sup>) (min.).
- 5) Wire Preparation

Strip all wires 1/4 inch from their edges as follows:



Note:

- a) Stripping too much insulation may cause ground fault
- b) Stripping too little may cause a poor connection and subsequently an open circuit

### 3. Installation Instruction

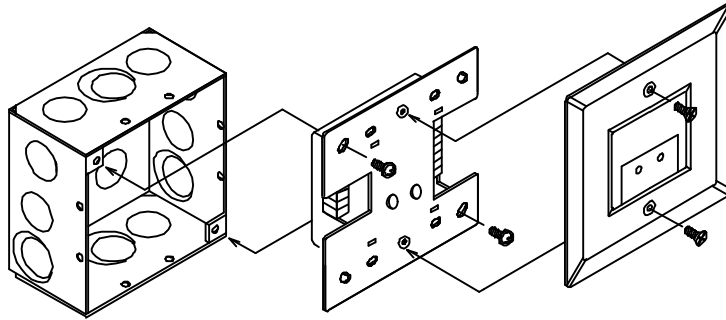


Figure 4: Installation in Electrical Enclosure

### 4. Specifications

No.	Item	Specification
1	Rated voltage range of SLC input power (S+, S-)	22.0 to 24.0V
2	Maximum SLC 24 VDC standby current (S+, S-)	250 $\mu$ A
3	Maximum SLC 24 VDC active current (S+, S-)	1.80mA
4	Internal Resistance	0.1 $\Omega$
5	Wiring resistance or wiring after a SCI in Class B (style 4)	10 $\Omega$
6	Wiring resistance or wiring between a SCI and another SCI in Class A (style 6 and 7)	10 $\Omega$
7	Maximum no. of SCI on an SLC loop in Class B style 4	16 units
8	Maximum no. of SCI on an SLC loop in Class A (style 6 and 7)	64 units
9	Maximum no. of addressable device connected to a SCI	50 units
10	Operating temperature range	32 to 120°F (0 to 49°C)
11	Operating humidity range	0 to 93% (non-condensing)
12	Dimensions	4.17"(106mm) (H) x 4.17"(106mm) (W) x 1.14"(29mm) (D)
13	Applicable electrical box for installation	2-1/2"(64mm)deep 2-gang box Standard 4"square box 1-1/2"(38mm)deep box

These instructions do not purport to cover all the details or variations in the equipment described, nor provide for every possible contingency to be met in connection with installation, operation and maintenance.

Specifications subject to change without prior notification

For Technical Assistance contact Potter Electric Signal Company at 800-325-3936

Actual performance is based on proper application of the product by a qualified professional.

Should further information be desired or should particular problems arise, which are not covered sufficiently for the purchaser's purpose, the matter should be referred to Potter-Nohmi or a distributor in your region.



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