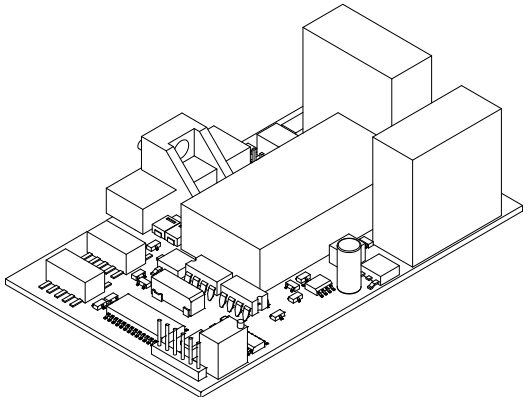
3-SDC1 Signature Data Circuit Card Installation Sheet



Description

This document describes how to install the 3-SDC1 Signature Data Circuit Card on the following equipment.

Model	Description
SFS1-CPU	EST3X fire alarm control unit (FACU) main board that supports two signaling line circuits (Signature loops)
3-SSDC1	Single Signature loop controller module with the option to add a second loop
3-SDDC1	Dual Signature loop controller module

The 3-SDC1 data circuit card provides one Class B, Class A, or Class X signaling line circuit that supports up to 125 detector and 125 module addresses. The card also provides resettable 24 VDC for powering conventional two-wire smoke detector circuits on Signature Series modules.

Installation

Install and wire this module in accordance with applicable national and local codes, ordinances, and regulations.

WARNING: Electrocution hazard. To avoid personal injury or death from electrocution, remove all sources of power and allow stored energy to discharge before installing or removing equipment.

Cautions

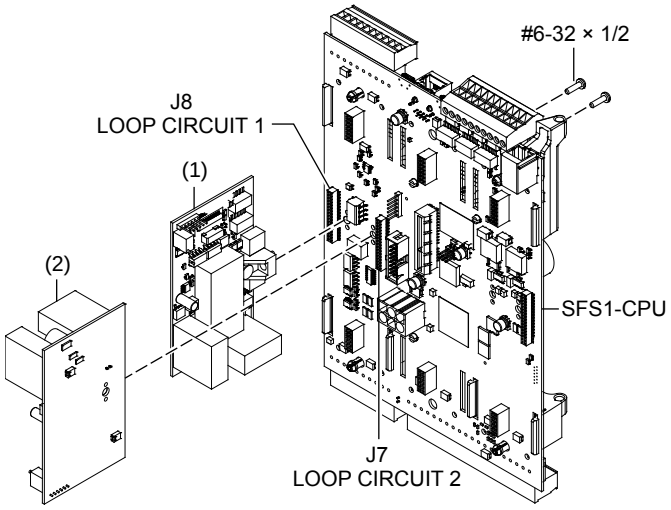
- Circuit boards are sensitive to electrostatic discharge (ESD). To avoid damage, follow ESD handling procedures.
- If removing an SFS1-CPU main board from the electronics chassis to install the 3-SDC1, first pull out the four plungers securing the main board to the electronics chassis. Failure to do so may result in damage to the main board.

Note: The 3-SDC1 card for LOOP1 on the SFS1-CPU main board is preinstalled.

To install the 3-SDC1 on an SFS1-CPU main board:

1. If replacing the 3-SDC1 card for LOOP1, remove the old card from J8 (LOOP CIRCUIT 1) on the SFS1-CPU main board, and replace it with the new one. See Figure 1.
2. Secure the card using the nylon screw provided.
3. If a second loop is required, plug an additional 3-SDC1 card into J7 (LOOP CIRCUIT 2), and then secure it with the nylon screw provided.

Figure 1: Installing the 3-SDC1 on an SFS1-CPU main board

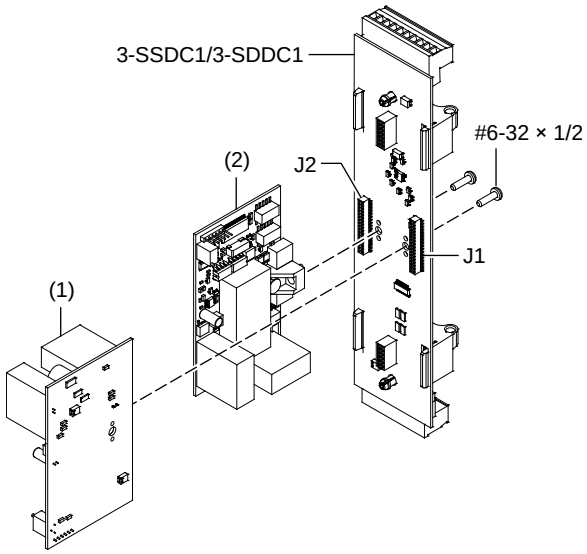


(1) 3-SDC1 for LOOP1 (2) 3-SDC1 for LOOP2

To install the 3-SDC1 on a Signature loop controller module:

1. Plug the 3-SDC1 for signaling line circuit LOOP1 into J1 on the Signature loop controller module. See Figure 2.
2. Secure the card using the nylon screw provided.
3. If a second loop is required, plug an additional 3-SDC1 card into J2 on a 3-SDDC1 board, and then secure it with the nylon screw provided.

Figure 2: Installing the 3-SDC1 on a Signature loop controller module



(1) 3-SDC1 for LOOP1 (2) 3-SDC1 for LOOP2

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Wiring

Connect signaling line circuit field wiring as shown in Figure 3 through Figure 6.

Notes

- Maintain 0.25 in. (6 mm) separation between power-limited and nonpower-limited wiring at all times. Keep nonpower-limited wiring in the shaded area shown in Figure 6. Secure the wiring to the cabinet using nylon cable ties.
- Wiring is supervised and power-limited.
- The signaling line circuit on LOOP2 (TB2) is wired the same as the signaling line circuit on LOOP1 (TB1).
- SLC pathways that provide signaling outputs to more than one fire notification zone must prevent a single break, single ground, or wire-to-wire fault from adversely affecting more than one zone.

  Exception: SLC pathways installed for survivability from attack by fire in accordance NFPA 72.
- If shielding is used it must be continuous, free from earth ground, terminated at the shield terminal only, and taped throughout the entire circuit.
- If notification appliances are used on the data line for more than one zone, each zone must have isolation so that a break, ground, or wire-to-wire fault does not affect more than one zone.

Figure 3: Class B wiring

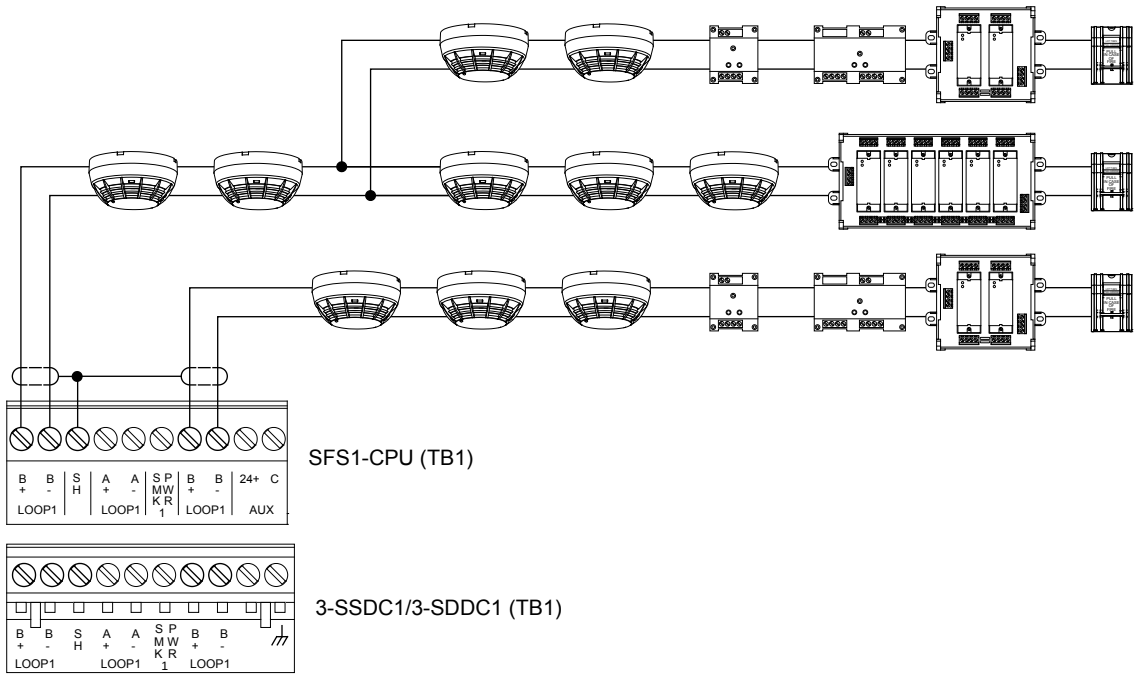
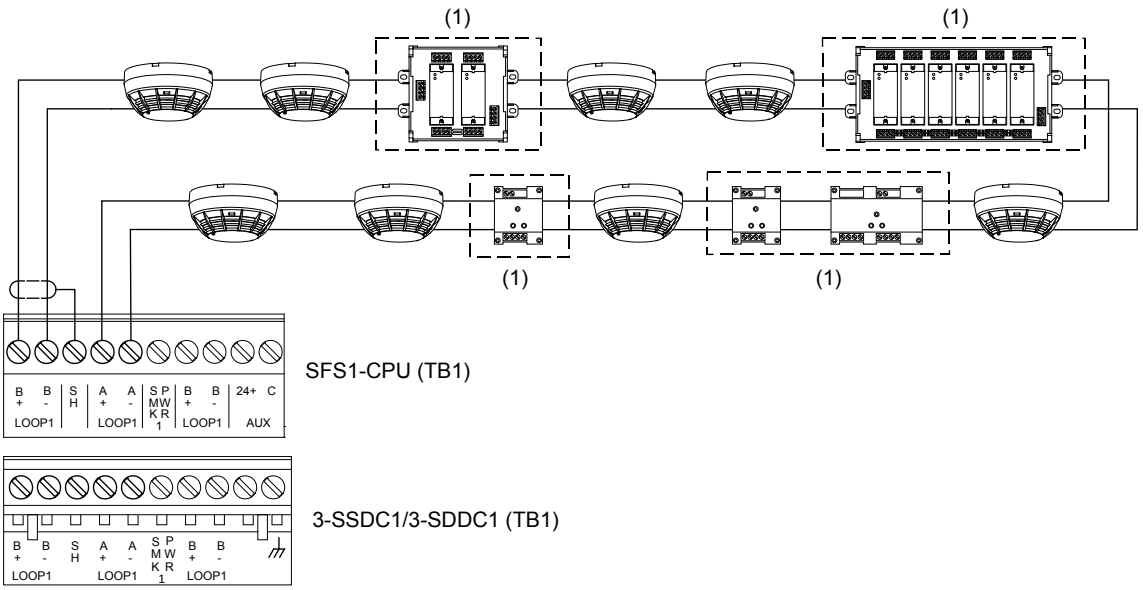


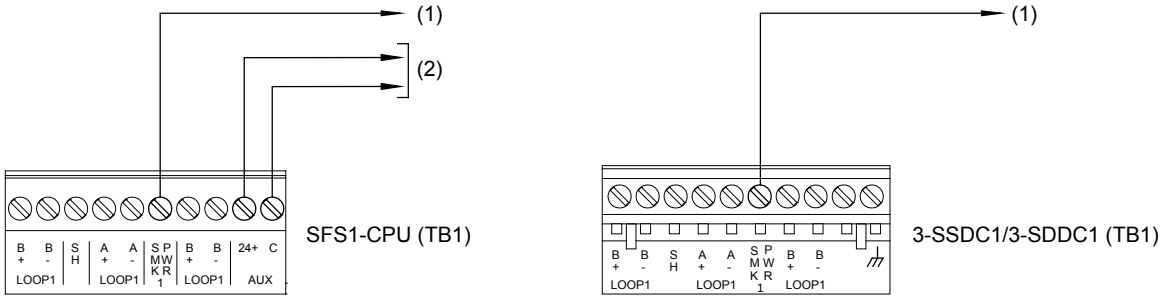
Figure 4: Class A [1] and Class X [2] wiring



Legend
(1) For Class X wiring, un-isolated devices must be mounted in a cabinet with isolators on the incoming and outgoing wiring.

Notes
[1] For Class A wiring, isolator modules and isolator detector bases are required to prevent wire-to-wire shorts on the signaling line circuit wiring from adversely affecting other segments of the loop. Do not install more than 50 addressable devices between isolators, per NFPA 72.
[2] For Class X wiring, isolator modules and isolator detector bases are required to prevent wire-to-wire shorts on the signaling line circuit wiring from adversely affecting any devices of the loop.

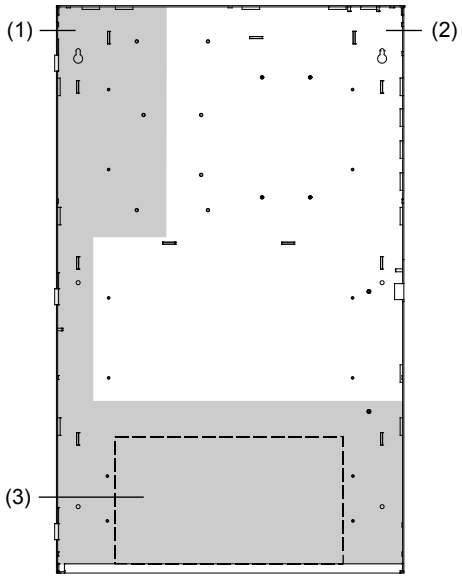
Figure 5: Smoke power and SFS1-CPU AUX wiring



Legend
(1) Smoke power to SIGA-UM or SIGA-MAB for a two-wire smoke detector
(2) To external equipment with compatible ratings

SFS1-CPU Notes
- Smoke power on LOOP2 (TB2) on the SFS1-CPU is not available unless a second 3-SDC1 card is installed.
- AUX power wiring used for fire functions cannot be shared with any device performing ancillary functions.
- AUX power on loops 1 and 2 on the SFS1-CPU is nonisolated and not used for loop smoke power.
- AUX power on LOOP2 (TB2) on the SFS1-CPU is available whether or not a second 3-SDC1 card is installed.

Figure 6: Power-limited and nonpower-limited wiring



(1) Nonpower-limited wiring area
(2) Power-limited wiring area
(3) Battery area

Specifications

3-SDC1 for an SFS1-CPU main board

Quantity	2 [1]
Voltage	19.0 VDC nom., 24 VDC max.
Current with full loop of devices for one circuit	
Standby	120 mA at 24 VDC
Alarm	132 mA at 24 VDC
Circuit	
Designation	Class B, Class A, Class X
Capacity	125 detector and 125 module addresses per circuit, Signature Series
Resistance	100 Ω max.
Capacitance	0.5 µF max.
Smoke power output	
Voltage	24 VDC max.
Current	85 mA
AUX power output	24 VDC, resettable or continuous 1.0 A each circuit, 1.0 A total
Wire size	12 to 18 AWG (1.0 to 4.0 mm²) max.
Compatible devices	Refer to the FACU's compatibility list
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Relative humidity	0 to 93% noncondensing

[1] One 3-SDC1 is preinstalled. A second card is optional.

3-SDC1 for 3-SSDC1 and 3-SDDC1 controllers

Quantity	
3-SSDC1	One 3-SDC1 card
3-SDDC1	Two 3-SDC1cards
Voltage	19.0 VDC nom., 24 VDC max.
Current with full loop of devices for one circuit	
Standby	144 mA at 24 VDC
Alarm	204 at 24 VDC
Current with full loop of devices for two circuits	
Standby	264 mA at 24 VDC
Alarm	336 mA at 24 VDC
Smoke power	
Voltage	24 VDC max.
Current	19.95 mA
Circuit	
Designation	Class B, Class A Class X
Capacity	125 detector and 125 module addresses per circuit, Signature Series
Resistance	100 Ω max.
Capacitance	0.5 µF max.
Wire size	12 to 18 AWG (1.0 to 4.0 mm²) max.
Compatible devices	Refer to the FACU's compatibility list
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Relative humidity	0 to 93% noncondensing

Regulatory information

Environmental class	UL: Indoor dry

Contact information

For contact information, see www.edwardsfiresafety.com.