

SCS Series

Smoke Control Station-SCS-8, SCE-8, SCS-8L, SCE-8E

General

The SCS-8 Smoke Control Station and optional SCE-8 Smoke Control Expander, SCS-8L Smoke Control Lamp Driver, and SCE-8L Smoke Control Lamp Driver Expander are used with the PROTECTWELL PTW-3300 Fire Alarm Control Panels (FACPs), PTW-NCA Network Control Annunciator displays, to provide the capability to control and display the status of AHU fans or dampers. Each SCS can control and monitor eight AHU fans or dampers. The SCS-8L and SCE-8L must be installed in a UL Listed Graphic Annunciator backbox. The SCE is used with the SCS, expanding the capability to control and monitor a total of 16 AHU fans or dampers. Only one SCE can be used for each SCS and a maximum of 32 pairs can be used with each PROTECTWELL control panel. With the maximum configuration of 32 pairs, the system has the capability to control and monitor 512 separate AHU fans or dampers. The SCS can be used with the legacy Intelligent Network Annunciator (INA) Release 2.8 (or higher) and with the legacy panel series (without NCA display option) in HVAC mode only.

Features

The SCS-8/SCE-8 or SCS-8L/SCE-8L is capable of two modes of operation: Firefighter's Smoke Control Station (FSCS) or Heating, Ventilation, and Air Conditioning (HVAC).

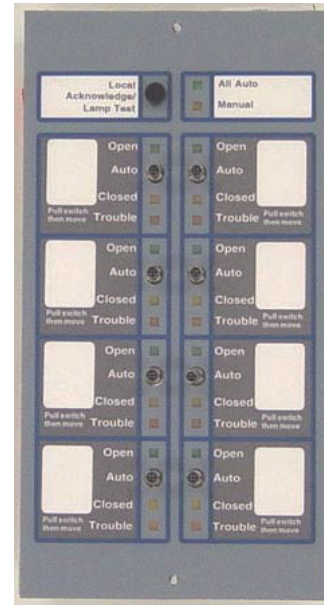
In the FSCS mode, the SCS/SCE has the capability to: help maintain a tenable environment in evacuation routes; help restrict the movement of smoke from the fire area; help provide conditions in non-smoke areas that will assist fire officials conduct search and rescue operations and to find and combat the fire; and assist in protecting life and property.

In the HVAC mode, the SCS/SCE has the capability to monitor and control the building heating, ventilating and air conditioning. The HVAC mode is not consistent with UL and NFPA standards for smoke control. This mode should be used for fan shutdown and building heating, ventilating, and air conditioning purposes only.

Communication to the SCS is accomplished over a two-wire serial interface employing an EIA-485 communication standard. Power for the SCS is provided via a separate 24 VDC regulated power loop. If power is lost, a trouble signal will result at the control panel.

Each SCS has **two rotary decimal switches** for addressing and **eight dipswitches** for mode configuration. Each SCS-8/SCE-8 module has **eight independent switch groups** that consist of the following:

- Miniature locking toggle switch, three-position ON/AUTO/OFF.
- Four annunciator protocol points (two control and two monitor).
- ON/OPEN indicator (Green).
- OFF/CLOSED indicator (Yellow).
- Trouble LED (Amber).



SCS-8

Each SCS-8/SCE-8 also has **two LEDs and one momentary switch** with the following functions:

- ALL AUTO LED (Green).
- MANUAL LED (Amber).
- LOCAL ACKNOWLEDGE/LAMP TEST momentary switch.

Each SCS-8L/SCE-8L module has eight independent switch groups as well, however, since the SCS-8L/SCE-8L is a lamp driver version of the SCS-8/SCE-8 each switch group consists of contacts for connection of a three-position switch and contacts for connection of three lamps or LEDs. Each SCS-8L module also has contacts for connection of two LEDs and one momentary switch. The SCS-8L/SCE-8L modules must be installed in a UL approved Custom Graphic Annunciator panel.

Temperature and humidity ranges: This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F); and at a relative humidity (non-condensing) of 85% at 30°C (86°F) per NFPA. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F).

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Fan and Damper Operation with the SCS/SCE

For a fan or damper to be used in a smoke control system, the system must not only be able to control the device, but it must be able to verify what state it is in (ON/OFF or OPEN/CLOSED). The capability to control a fan or a damper is accomplished through the use of an **intelligent control module**. The control module is used to control the ON/OFF state of a fan or the OPEN/CLOSED state of a damper. The capability to monitor the state of a fan or a damper is accomplished through the use of an intelligent monitor module. The monitor module is used to monitor the ON/OFF state of a fan or the OPEN/CLOSED state of a damper. The figure below shows a general layout of the components necessary to control and monitor a fan.

The intelligent control and monitor modules are controlled by the FACP. The SCS communicates with the FACP over the **EIA-485 data line**. Each SCS must be set for a specific address on the EIA-485 circuit, different from that of other devices on the EIA-485 data line. There are 32 valid EIA-485 addresses in the FACP and each address provides 64 protocol points for the purpose of communication with the FACP. The SCS monitors and controls the intelligent monitor and control modules through the FACP by using the 64 points.

Each switch group on the SCS is responsible for controlling and monitoring one fan or damper. This is accomplished by using four EIA-485 protocol points (of the 64 available). For each of the four protocol points used, an appropriate control or monitor module must be present at the fan or damper.

Each switch group on an SCS-8/SCE-8 consists of two LEDs for annunciation of fan or damper status, one LED for annunciation of trouble conditions, and an ON/AUTO/OFF (OPEN/AUTO/CLOSED) three-position switch for control of a fan or damper (through the intelligent control and monitor modules). The status of the control and monitor modules depends on the setting of the three-position switch. If the switch is in the AUTO position and there is an alarm condition in the FACP, then the control and monitor modules will function according to the automatic programming in the control panel.

If the switch is in the ON (OPEN) position, the SCS-8 sends a signal over the EIA-485 which overrides the automatic programming to ensure the ON/OPEN condition of the fan or damper.

If the switch is in the OFF (CLOSED) position, then the SCS-8 sends a signal over the EIA-485 overriding the automatic programming to ensure the OFF/CLOSED position of the fan or damper.

Product Line Information

NOTE: See panel data sheets and manuals' lists of compatible devices for appropriate intelligent control and monitor modules.

SCS-8: Smoke Control Master Module. Eight switches expandable to 16 with SCE-8.

SCE-8: Smoke Control Expander Module expands the SCS-8 switches to 16.

SCS-8L: Smoke Control Lamp Driver Master Module. Eight switches expandable to 16 with SCE-8.

SCE-8L: Smoke Control Lamp Driver Expander Module expands the SCS-8 switches to 16.

SCS8L-CBL24: 24" (60.96 cm) long cable used to connect SCS-8L/SCE-8L outputs to lamps or LEDs.

SCS8L-CBL48: 48" (121.92 cm) long cable used to connect SCS-8L/SCE-8L outputs to lamps or LEDs.

RS-SCS Series: UL-Listed Custom Graphic Annunciator panel for use with the SCS-8L/SCE-8L.

BGR-SCS Series: UL-Listed Custom Graphic Annunciator panel for use with the SCS-8L/SCE-8L.

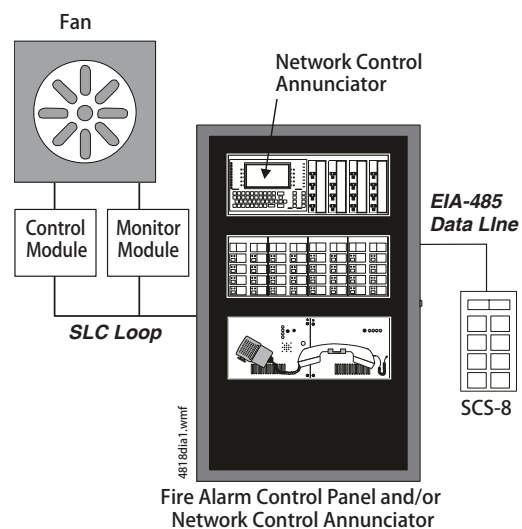
CE-SCS Series: UL-Listed Custom Graphic Annunciator panel for use with the SCS-8L/SCE-8L.

LDM-R32: Relay driver module for the SCS-8L.

ABS-4D: Annunciator Surface Box. Mounts four modules. Attractive window with key-lock door, 12.0" (30.48 cm) x 19.938"(50.641 cm) x 3.5" (8.89 cm). Door adds 1.25" (3.175 cm) to depth.

ADP-4B: The Annunciator Dress Panel-4B (black) provides for the cabinet mounting of one to four modules. The ADP-4B hinge-mounts to a CAB-4 Series cabinet. Modules mount directly to threaded studs on the ADP-4B. NOTE: The SCS-8 does not mount in a DP-DISP.

Controlling and Monitoring a Fan



NOTE: For full FSCS support with PTW-3300 panel, the SCS must connect to the PTW-NCA EIA-485 port.