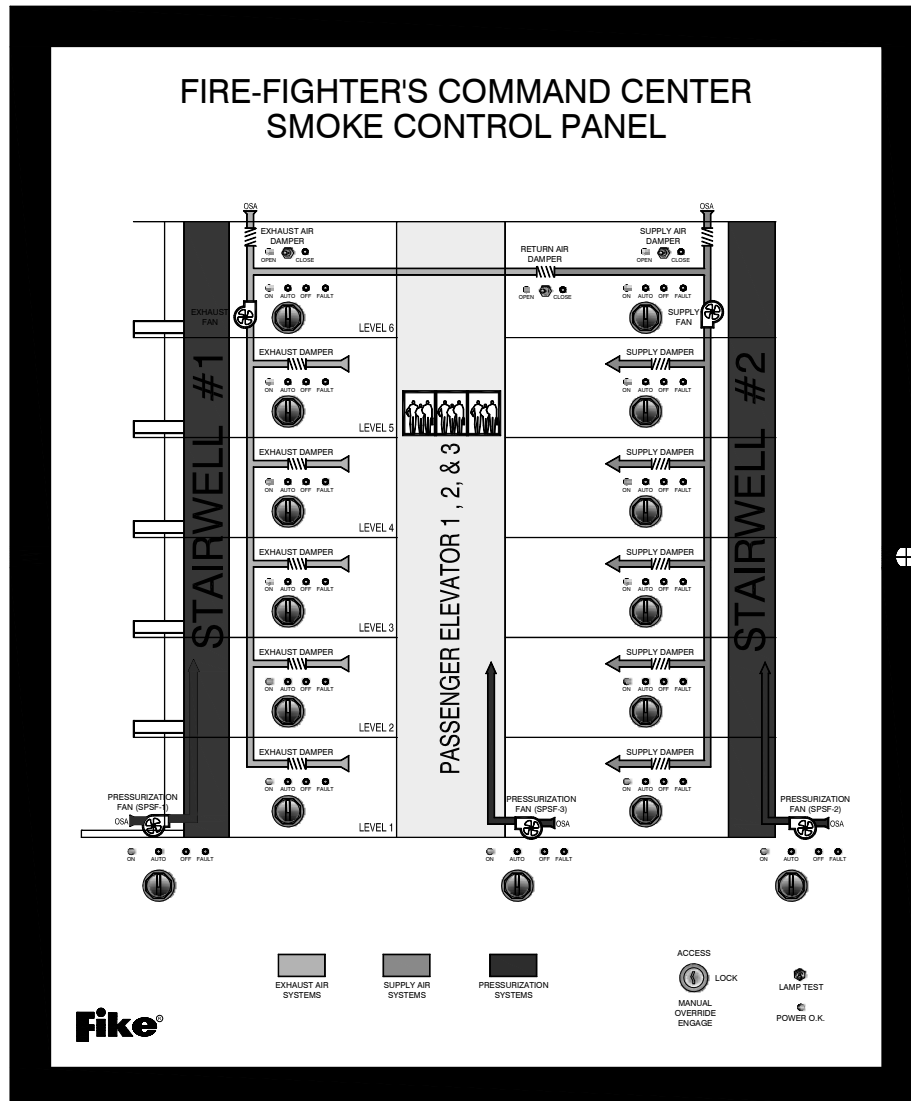


Fire-Fighter's Smoke-Control Station (FSCS Series)



DEVELOPED BY	Fike 704 SW 10 th Street P.O. Box 610 Blue Springs, Missouri 64013 U.S.A. Phone: (888) 628-FIKE (3453) (816) 229-3405 Fax: (866) 211-9239
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QUALITY	Fike has maintained ISO 9001 certification since 1996. Prior to shipment, we thoroughly test our products and review our documentation to assure the highest quality in all respects.
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WARRANTY	Fike provides a one-year limited manufacturer's warranty on this product. All warranty returns must be returned from an authorized Fike Distributor. Contact Fike's Marketing department for further warranty information. Fike maintains a repair department that is available to repair and return existing electronic components or exchange/purchase previously repaired inventory component (advance replacement). All returns must be approved prior to return. A Material Return Authorization (MRA) number must be indicated on the box of the item being returned. Contact the appropriate Regional Sales Manager for further information regarding product return procedures.
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LIMITATIONS OF LIABILITY	Installation in accordance with this manual, applicable codes, and the instructions of the Authority Having Jurisdiction is mandatory. Fike can not be held liable for any incidental or consequential damages arising from the loss of property or other damages or losses resulting from the use or misuse of Fike products beyond the cost of repair or replacement of any defective components. Fike reserves the right to make product improvements and change product specifications at any time. While every precaution has been taken during the preparation of this manual to ensure the accuracy of its content, Fike assumes no responsibility for errors or omissions.
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DOCUMENT HISTORY

Document Title: Fire-Fighter's Smoke Control Station (FSCS Series), Product Manual

Document Reorder Number: 06-447

Revision	Section	Date	Reason for Change
0	All Sections	10/08	Initial Release
1	Section 5.6	5/09	Added clarification on dip-switch functions
2	Sections 2.4 and 5.6	4/11	Deleted four-position switch and added baud rate selection

ABOUT THIS MANUAL

This manual provides sales representatives, designers, and system installers with the information necessary to sell, design, and install a Fike Firefighter's Smoke-Control Station graphic that complies with the Underwriters Laboratories, Inc. (UL) requirements for the UL 864 UUKL Ninth Edition Smoke Control Listing. To comply with the listing, you must follow the requirements and restrictions placed on the layout of the FSCS as detailed in this and other Fike Smoke-Control system documentation. This manual also serves as the Operations Manual for the FSCS.

The first-time installer and/or user should thoroughly read and understand the instructions contained within this manual before using this device. These instructions must be followed to avoid damage to the equipment itself or adverse operating conditions caused by improper installation and programming.

For a general overview of all of the Fike components used to form a complete smoke-control system (including design examples), refer to Fike document 06-467, "Smoke-Control Application Guide".

PRODUCT SUPPORT

If you have a question or encounter a problem not covered in this manual, you should first try to contact the distributor who installed the Fike system. Fike has a worldwide distribution network. Each distributor sells, installs, and services Fike equipment. Look on the back of the cabinet door, there should be a sticker with an indication of the distributor who installed the system. If you can not locate the distributor, please call Fike Customer Service for locating your nearest distributor, or go to our web-site at www.fike.com. If you are unable to contact your installing distributor or you simply do not know who installed the system, you can contact Fike Technical Support at (888) 628-FIKE (3453) Option 2, Monday through Friday, 8:00 am to 4:30 pm CST.

SAFETY INFORMATION

Important safety admonishments are used throughout this manual to warn of possible hazards to persons or equipment.

Caution

Cautions are used to indicate the presence of a hazard which will or may cause damage to the equipment if safety instructions are not followed or if the hazard is not avoided.

Note: Provides information on installation, operation, maintenance, performance or general tips that are important but not hazardous to anything or anyone.

TERMS USED IN THIS MANUAL

Acknowledge - To confirm that a message or signal has been received, such as by the pressing of a button or the selection of a software command.

Authority Having Jurisdiction - The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.

Configure - The control board is 'set-up' to properly recognize and supervise a device as the design requires.

Dedicated Smoke-Control System - Smoke-control systems and components that are installed for the sole purpose of providing smoke control, and upon activation these systems operate specifically to perform the smoke-control function.

Fire Alarm Control Unit (Panel) - A system component that receives inputs from automatic and manual fire alarm devices and might supply power to detection devices and to a transponder(s) or off-premises transmitter(s). The control unit might also operate releasing circuits or solenoids, provide transfer of power to the notification appliances, or transfer of condition to relays or devices connected to the control unit. The fire alarm control unit can be a local fire alarm control unit or a master control unit.

Fire Alarm Signal - A signal from a fire alarm-initiating device such as a manual fire alarm box, automatic fire detector, waterflow switch, or other device in which activation is indicative of the presence of a fire or fire signature.

Fire Alarm System - Components and circuits arranged to monitor and annunciate the status of fire alarm or supervisory signal-initiating devices and to initiate the appropriate response to those signals.

Fire Fighters' Smoke Control Station (FSCS) - A system that provides graphical monitoring and manual overriding capability over smoke-control systems and equipment at designated location(s) within the building for the use of the fire department.

Nondedicated Smoke-Control System - Smoke-Control systems and components that share components with some other system(s), such as the building HVAC system, and upon activation cause the HVAC system to change its mode of operation in order to achieve the smoke-control objectives.

Nonpower-Limited - The amount of current flowing through the circuit is unlimited vs. being limited, or power-limited. A designation given for wiring purposes.

Power-Limited - The amount of current flowing through the circuit is limited vs. being unlimited, or non-power limited. A designation given for wiring purposes.

Reset - A control function that attempts to return a system or device to its normal, non-alarm state.

RS232 - A data communication standard produced by the Electronics Industry Association (EIA). This was developed to provide a standard for interface between data terminal equipment and data circuit - terminating equipment employing Serial Binary Data Interchange.

RS485 - A data communication standard produced by the Electronics Industry Association (EIA). This standard was developed to insure compatibility between units provided by different manufacturers, and to allow for reasonable success in transferring data over specified distances and/or data rates.

Smoke-Control System - An engineered system that uses mechanical fans to produce pressure differences across smoke barriers to inhibit smoke movement.

Smoke-Control Zone - A space within a building enclosed by smoke barriers, including the top and bottom, that is part of a zoned smoke-control system.

Zone - A defined area within a protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent, an area in which a form of control can be executed, a particular area being protected. This term is used to create the relationship between activation inputs to notification outputs and peripherals.

Zoned Smoke-Control System - A smoke-control system that includes smoke exhaust for the smoke zone and pressurization for all contiguous smoke-control zones.

1.0 PRODUCT OVERVIEW

The front end of every smoke-control system is the Fire-Fighter's Smoke-Control Station (FSCS). Fike's FSCS graphic panel (Exhibit 1) provides a user-friendly interface to the HVAC system for responding Fire-Fighters' to use to manually control the operation of fans, dampers, and other equipment (dedicated and non-dedicated) installed for the purpose of controlling smoke movement within the building.

Each FSCS is custom made to suit the needs of the customer and the project scope. It is designed to graphically depict the physical building arrangement, smoke-control systems and equipment, and the areas of the building served by the equipment. If the graphic layout is too large to fit on a single panel, multiple panels may be used.

LED indicators are used to indicate the operational status of individual smoke control equipment (i.e., individual fans, damper, etc.) or entire smoke control zones. Manual override switches can either be installed in the FSCS or within the associated Fire Alarm panel to provide a means for responding fire-department personnel to override automatic control of the smoke control system. Distinct background colors can be used to highlight critical smoke control areas like stairways, elevator shafts, main fresh air ducts, and main exhaust ducts.

Automatic inputs for the smoke-control system come from the basic fire initiating devices (i.e., smoke detectors, heat detectors, etc.) that are connected to the fire alarm system. Communication between the FSCS and the associated control panel for smoke control is accomplished via the panel's RS485 peripheral bus.

Note: A firefighter's smoke-control station (FSCS) shall be provided for all smoke-control systems as required by NFPA 92A and 92B.

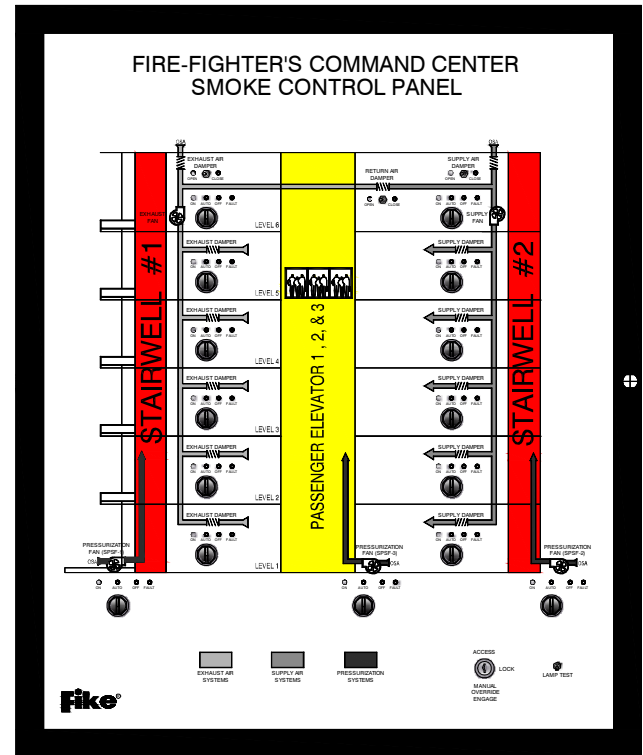


Exhibit 1: Fire-Fighter's Smoke Control Station (FSCS Series)

Features:

- Communicates on the associated control panel's RS485 peripheral bus
- Configurable via on-board RS232 port or via associated control panel using C-Linx Software
- Surface, Flush or Semi-flush mountable
- Local piezo sounds for annunciation of system status changes
- Access key switch for lock-out of smoke-control switches
- Immediate visual status of smoke-control components in compact area
- Bi-directional communication with associated control panel. Control panel must be configured to supervise FSCS modules for bi-directional communication to occur.
- Integrated LED Test Switch function

1.1 COMPATIBILITY

The Firefighter's Smoke-Control Station (FSCS) is compatible with the following Fike intelligent control panels: CyberCat 254 and CyberCat 1016, firmware version 4.XX or higher.

1.2 LISTINGS AND APPROVALS

<u>Approval Agency</u>	<u>File Number</u>
Underwriters Laboratories	S2203
Factory Mutual Approvals	3032723
California State Fire Marshall (CSFM)	7165-0900:137 (non high-rise) 7170-0900:148 (high-rise)
COA	6018

1.3 AGENCY STANDARDS AND COMPLIANCE

This Fire Alarm product complies with the following standards:

- NFPA 70 – NEC, Article 300 Wiring Methods
- NFPA 70 – NEC, Article 760 Fire Protective Signaling Systems
- NFPA 72 – National Fire Alarm Code
- NFPA 92A – Smoke-Control Systems
- NFPA 92B – Smoke Management Systems
- UL 864 – Control Units and Accessories for Fire Alarm Systems (UUKL Ninth Edition Smoke Control)

1.4 RELATED FIRE ALARM STANDARDS

- NFPA 1 – Fire Prevention Code
- NFPA 77 – Static Electricity
- NFPA 101 – Life Safety Code
- Applicable Local and State Building Codes
- Requirements of the Local Authority Having Jurisdiction

1.5 RELATED DOCUMENTATION

Further details about the products referenced in this document can be found in the following manuals.

Document Title	Part Number
CyberCat 254/1016 Product Manual	06-326
Smoke-Control Application Guide	06-470

Table 1: Related Documentation

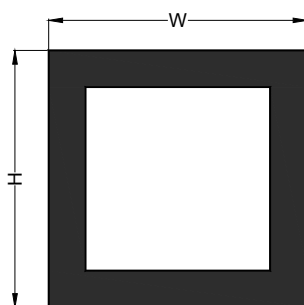
2.0 COMPONENTS

A complete Fire-Fighter's Smoke-Control Station (FSCS) requires five main components, which must be ordered individually to suit your project requirements:

1. Door Assembly
2. Back Box & optional trim ring
3. LEDs (Light Emitting Diodes)
4. Control Switches
5. Electronic Control Hardware

2.1 DOOR ASSEMBLIES

The door assembly is available in four sizes; two of which can be chosen as vertical or horizontal mount for a total of six choices.



DOOR FRONT VIEW

Door Assemblies	
P/N	Dimensions (W x H) / Weight
10-2690-B	14" x 14" (36cm x 36cm) / 14 lbs. (6.4 kg)
10-2691-B	24" x 24" (61cm x 61cm) / 25 lbs. (11.3 kg)
10-2692H-B	36" x 24" (91.5cm x 61cm) / 38 lbs. (17.2 kg)
10-2692V-B	24" x 36" (61cm x 91.5cm) / 38 lbs. (17.2 kg)
10-2693H-B	36" x 30" (91.5cm x 76cm) / 52 lbs. (23.6 kg)
10-2693V-B	30" x 36" (76cm x 91.5cm) / 52 lbs. (23.6 kg)

Table 2: Door Assemblies

Door assemblies include the door frame, Lexan viewing window with mylar artwork, (1) Smoke Control Module, (1) Switch/LED Driver Module, Lamp Test switch and LED, and security access key for smoke-control switch operation. **Back box, trim ring, additional electrical components, switches and LEDs must be ordered separately.**

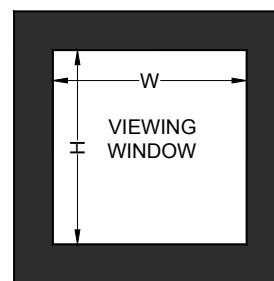
Each door is equipped with a key-lock to provide security access to internal electronics and panel switches. The door is made of 16 gauge steel and is finished with textured black paint. The door assembly can be hinged on the right side, left side, or bottom of the back box depending upon the size of the graphic panel and how the associated back box is installed.

A metal back plate is provided with each door assembly. The back plate provides a mounting surface for the Smoke-Control Module(s). The back plate is mounted to the threaded studs supplied in the back box.

2.1.1 DOOR ASSEMBLY VIEWING WINDOW

The door assembly viewing window is available in black or white Lexan with the user-defined layout silk-screened onto the Lexan. Holes are drilled in the Lexan for placement of each LED. The entire viewing window and LEDs are covered with a clear Lexan sheet for protection. Holes for manual override switches are drilled completely through the Lexan viewing window and are accessible from the face of the door.

The maximum number of LEDs and switches that can be installed into the viewing window Lexan can vary depending upon the door assembly selected and the graphical layout. Please contact Fike to determine the maximum number of LEDs and switches available for your customized application.



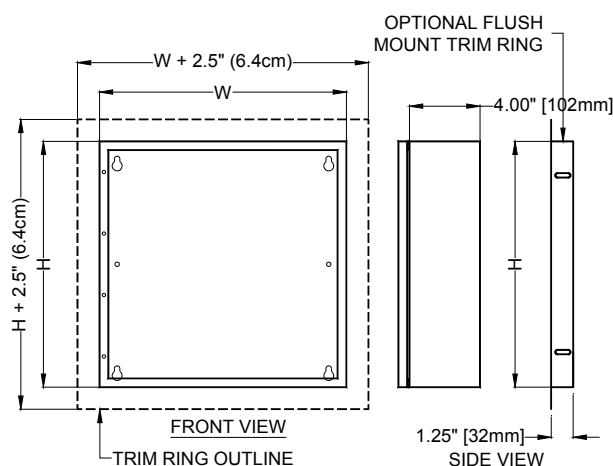
DOOR FRONT VIEW

Viewing Window	
P/N	Dimensions (W x H)
10-2690-B	10" x 10" (25.4cm x 25.4cm)
10-2691-B	20" x 20" (51cm x 51cm)
10-2692H-B	32" x 20" (81.3cm x 51cm)
10-2692V-B	20" x 32" (51cm x 81.3cm)
10-2693H-B	32" x 26" (81.3cm x 66cm)
10-2693V-B	26" x 32" (66cm x 81.3cm)

Table 3: Viewing Window Specs

2.2 BACK BOX

The back box is available in four sizes; two of which can be chosen as vertical or horizontal mount for a total of six choices.



Back Box	
P/N	Dimensions (W x H) / Weight
10-2588-B	14" x 14" (36cm x 36cm) / 13 lbs. (5.9 kg)
10-2589-B	24" x 24" (61cm x 61cm) / 25 lbs. (7.6 kg.)
10-2590H-B	36" x 24" (91.5cm x 61cm) / 32 lbs. (9.8 kg.)
10-2590V-B	24" x 36" (61cm x 91.5cm) 32 lbs. (9.8 kg.)
10-2591H-B	36" x 30" (91.5cm x 76cm) / 50 lbs.(15.2 kg)
10-2591V-B	30" x 36" (76cm x 91.5cm) / 50 lbs (15.2 kg)
Back boxes can be surface, flush, or semi-flush mounted.	

Table 4: Back Boxes

The back box is made of 16 gauge steel and is finished with textured black paint. The back box can be surface mounted with no additional hardware required.

The back box is equipped with welded studs for mounting of electronic control hardware after box installation is complete. The back box is NOT equipped with electrical knock-outs. Installer must create electrical knockouts for connection of conduit and wiring in the field.

Each Back-box is designed to be used with following compatible door assemblies:

Back Box P/N	Door Assembly P/N
10-2588-B	10-2690-B
10-2589-B	10-2691-B
10-2590H-B	10-2692H-B
10-2590V-B	10-2692V-B
10-2591H-B	10-2693H-B
10-2591V-B	10-2693V-B

2.2.1 FLUSH TRIM RING

An optional flush trim ring must be ordered if recess mounting the back box. The trim ring allows the installer to adjust how deep the back box is set into the wall.

Back Box Trim Rings	
P/N	Description
10-2611-B	Trim ring for 10-2588 back box
10-2612-B	Trim ring for 10-2589 back box
10-2613-B	Trim ring for 10-2590 back boxes
10-2614-B	Trim ring for 10-2591 back boxes

Table 5: Back Box Trim Rings

Note: The back box should never be mounted deeper than flush with the finished wall. This will prevent the door from opening.

2.3 LEDs (LIGHT EMITTING DIODES)

Each FSCS shall be provided with status indicators (LEDs) for all smoke control equipment, smoke control zones, or a combination of the two. The LEDs shall provide positive indication of the smoke control system status to responding firefighting personnel.

Selection of LED colors (Table 6) is based on the functionality of your FSCS panel and the requirements of the local AHJ and adopted codes. LEDs are factory installed based on custom artwork supplied by the distributor.

LEDs	
P/N	Description
02-12216	Red Light Emitting Diode
02-12218	Green Light Emitting Diode
02-12219	Yellow Light Emitting Diode
02-12220	White Light Emitting Diode

Table 6: Light Emitting Diodes

Note: The total number of each LED color must be indicated when ordering the FSCS door assembly.

2.3.1 POWER O.K. LED

Each FSCS shall be provided with a green Power O.K. LED (Exhibit 2) that stays lit continuously to indicate the presence of 24VDC power. The LED will turn off if power to the FSCS is lost.

POWER O.K.



Exhibit 2: Power O.K. LED

2.4 CONTROL SWITCHES

Each FSCS can be provided with control switches that give the responding firefighting personnel complete control capability over the operation of the smoke control system. To meet the different control requirements, several different switch styles are available as follows.

2.4.1 ACCESS CONTROL SWITCH, P/N 02-11912

This is a two-position key switch (Exhibit 3) that is provided on each FSCS panel. In the LOCK position, the switch limits access to the FSCS control switch functions. The switch must be turned to the ACCESS position before the FSCS override switches can be used.



Exhibit 3: FSCS Access Control Switch

Switch Position	Switch Setting	LED (color)	Function
1	LOCK	N/A	With the key switch in the LOCK position, the smoke-control system will not respond to the activation of manual override switches on the FSCS.
2	ACCESS	N/A	With the key switch in the ACCESS position, the smoke-control system will initiate the programmed smoke-control strategy upon activation of a manual override switch on the FSCS.

Table 7: Access Control Switch Functions

2.4.2 LAMP TEST SWITCH, P/N 02-12244

This is a momentary toggle switch (Exhibit 4) that is provided on each FSCS graphic panel to allow simultaneous testing of all panel LEDs.



Exhibit 4: Lamp Test Switch

2.4.3 TWO-POSITION TOGGLE SWITCH, P/N 02-12245

This switch (Exhibit 5) is meant to provide **ON-OFF** or **OPEN-CLOSE** control capability over individual pieces of smoke-control equipment (e.g., dedicated stairwell pressurization fans, elevator hoistway pressurization fans, etc.) which can only be controlled from the FSCS.



Exhibit 5: Two-Position Toggle Switch

Switch Position	Switch Setting	LED (color)	Function
1	ON	ON (Green)	On LED flashes when the switch is in position 1 and the associated feedback point(s) are correct. Upon confirmation of feedback point(s), the LED will illuminate steady. LED turns off when the switch is in any other position.
2	OFF	OFF (Red)	Off LED flashes when the switch is in position 2 and the associated feedback point(s) are correct. Upon confirmation of feedback point(s), the LED will illuminate steady. LED turns off when the switch is in any other position.
N/A	N/A	FAULT (Yellow)	Fault LED illuminates steady if associated feedback point(s) fail to respond within programmed response time. LED turns off when the fault event is cleared.

Table 8: Two-Position Toggle Switch Functions

2.4.4 THREE-POSITION ROTARY SELECTOR SWITCH, P/N 02-12172

This switch (Exhibit 6) can be used to provide **ON-AUTO-OFF** or **OPEN-AUTO-CLOSE** control capability over individual pieces of smoke-control equipment (e.g., supply fans, exhaust fans, VAV boxes, dampers, etc.) which can be controlled from other locations within the building.

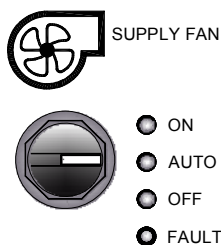


Exhibit 6: Three-Position Rotary Selector Switch

Switch Position	Switch Setting	LED (color)	Function
1	ON	ON (Green)	On LED flashes when the switch is in position 1 and the associated feedback point(s) are correct. Upon confirmation of feedback point(s), the LED will illuminate steady. LED turns off when the switch is in any other position.
2	AUTO	AUTO (White)	Auto LED will illuminate when the switch is in position 2 and the associated feedback point(s) are correct. LED turns off when the switch is in any other position.
3	OFF	OFF (Red)	Off LED flashes when the switch is in position 3 and the associated feedback point(s) are correct. Upon confirmation of feedback point(s), the LED will illuminate steady. LED turns off when the switch is in any other position.
NA	NA	FAULT (Yellow)	Fault LED illuminates steady if associated feedback point(s) fail to respond within programmed response time. LED turns off when the fault event is cleared.

Table 9: Three-Position Rotary Switch Functions

2.4.5 THREE-POSITION TOGGLE SWITCH, P/N 02-12171

This switch (Exhibit 7) can be used to provide **ON-AUTO-OFF** or **OPEN-AUTO-CLOSE** control capability over individual pieces of smoke-control equipment (e.g., supply fans, exhaust fans, VAV boxes, dampers, etc.) which can be controlled from other locations within the building.

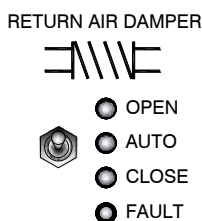


Exhibit 7: Three-Position Toggle Switch

Switch Position	Switch Setting	LED (color)	Function
1	ON	ON (Green)	On LED flashes when the switch is in position 1 and the associated feedback point(s) are correct. Upon confirmation of feedback point(s), the LED will illuminate steady. LED turns off when the switch is in any other position.
2	AUTO	AUTO (White)	Auto LED illuminates when the switch is in position 2 and the associated feedback point(s) are correct. LED turns off when the switch is in any other position.
3	OFF	OFF (Red)	Off LED flashes when the switch is in position 3 and the associated feedback point(s) are correct. Upon confirmation of feedback point(s), the LED will illuminate steady. LED turns off when the switch is in any other position.
NA	NA	FAULT (Yellow)	Fault LED illuminates steady if associated feedback point(s) fail to respond within programmed response time. LED turns off when the fault event is cleared.

Table 10: Three-Position Toggle Switch Functions

2.5 SMOKE-CONTROL MODULE

P/N 10-2663

The Smoke-Control Module (Exhibit 8) provides the interface between the FSCS graphic panel and Fike's CyberCat 254 and CyberCat 1016 control panels. Each module can control and monitor up to six smoke control zones or individual pieces of smoke-control equipment (e.g., fans or dampers). The module is capable of distributing control and power (24VDC) to a single 10-2665, Switch/LED Driver Module. The module is equipped with an on-board piezo to provide local notification of system status changes.

The Smoke-Control Module interfaces to the associated control panel via the panel's RS485 peripheral bus. The associated control panel must be configured to supervise the smoke-control module for supervision to occur. Modules that are supervised will initiate a trouble event at the associated control panel upon loss of RS485 communication or 24VDC power.

Power for the module is provided via a separate power loop from the associated control panel or a battery backed 24VDC, regulated, power-limited, power supply listed for Fire Protective Signaling Use.

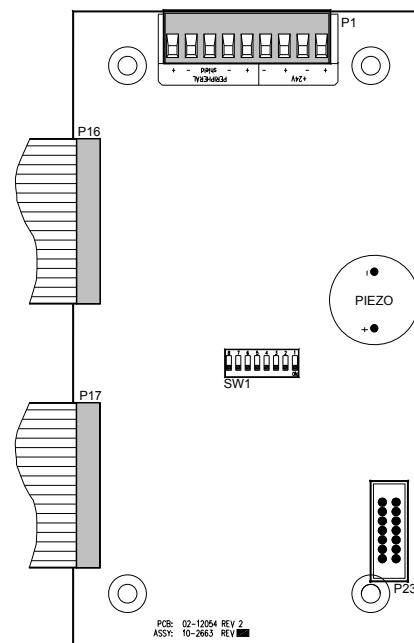


Exhibit 8: Smoke-Control Module, P/N 10-2663

Operating Voltage Range:		15 – 30VDC
Maximum Current:	Alarm	112 mA (all LEDs on)
	Standby	58 mA (all LEDs off)
**Operating Temperature		0° to 49° C (32° to 120° F) 93% RH
Terminal Blocks Accept 14 – 26 AWG		
All Connections are Supervised and Power Limited		
RS485 Wiring:	4000 ft. (1219m) to last device 96Ω max. Belden 9841 or equal	
Approximate Dimensions:	6.75" (17.15cm) H x 3.73" (9.47cm) W	

Table 11: Smoke Control Module Specs

Note: 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 component be installed in an environment with a nominal room temperature of 15-27° C / 60-80° F.

Note: If power is supplied from a source other than the control panel, a ground fault condition could occur.

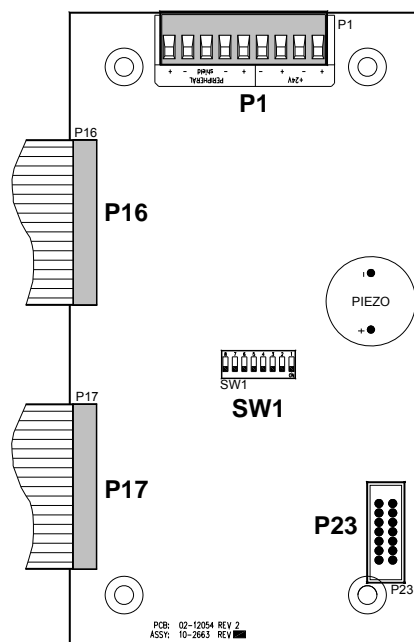


Exhibit 9: Smoke-Control Module Terminal Designations

Terminal Block	Terminal Labels	Function	Wiring Requirements
P1	+24V (+ -)	24VDC power input from associated control panel, previous device, or battery backed, regulated, power-limited, power supply listed for fire protective signaling line use.	Belden 9841 or equal. Maximum 4,000 ft. (1,219m)
	(+ -)	24VDC power output (feed through)	
	Peripheral (+ - shield) (shield - +)	RS485 communication circuit from associated control panel or previous device. RS485 communication circuit to next device or 100 ohm termination resistor if last device on peripheral buss circuit.	
P16, P17	N/A	Connection point for 34-pin ribbon cables required to provide communication between Smoke Control Module (P/N 10-2663) and Switch/LED Driver Module (P/N 10-2665).	
P23	N/A	Fike Use Only	
SW1	1 – 6	Dip switch block used to set the smoke control module's binary address (2 – 32) on the peripheral buss.	
Piezo	N/A	Each smoke control module is equipped with an integral buzzer to provide indication of system events. Buzzer operation will vary depending upon system events as follows: Loss of 24VDC power – RS485 communication failure – Smoke Control Switch Activation – FSCS panel trouble – (e.g., access control switch returned to LOCK position with a smoke control switch active.)	

Table 12: Smoke-Control Module Terminal Designations/Functions

2.6 SWITCH/LED DRIVER MODULE P/N 10-2665

The Switch/LED Driver Module (Exhibit 10) is used in conjunction with the smoke-control module to provide connection points for all control switches and LEDs incorporated into the FSCS panel layout. The module is factory mounted to the backside of the panel door assembly. The LEDs and switches are factory installed and connected to the module's terminal blocks as required to suit the layout of the custom FSCS display.

2.7 ADDITIONAL PARTS

The actual number of switches and LEDs that can be incorporated into the FSCS viewing window will vary depending upon the door assembly selected and the graphic layout required. Table 13 provides an estimate of the number of switches and LEDs based on the maximum number of modules (Control & Switch/LED) that can be incorporated into the FSCS enclosure. Please contact Fike to determine the maximum number of switches and LEDs available for your customized application.

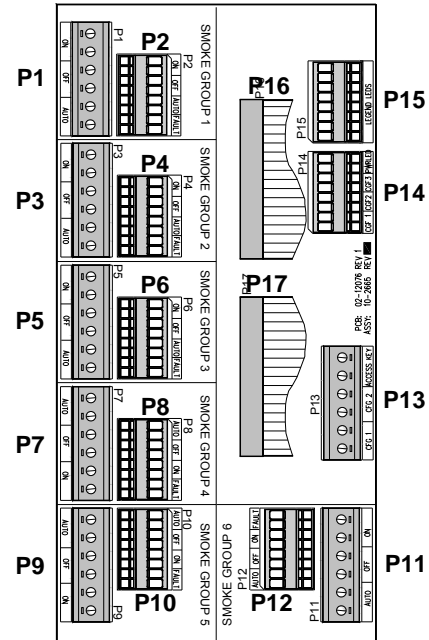
Maximum Switch/LEDs				
Panel Size	Qty. 10-2663	Qty. 10-2665	Switch	LEDs
14" x 14" (36cm x 36cm)	1	1	6	26
24" x 24" (61cm x 61cm)	4	4	24	104
36" x 24" (91.5cm x 61cm)	6	6	36	156
24" x 36" (61cm x 91.5cm)	6	6	36	156
36" x 30" (91.5cm x 76cm)	8	8	48	208
30" x 36" (76cm x 91.5cm)	8	8	48	208

Table 13: Additional Parts

2.8 REPLACEMENT/SPARE PARTS

P/N	Description
10-1903	34-pin ribbon cable, Cntrl-Driver, 24" long
10-1950	34-pin ribbon cable, Cntrl-Driver, 48" long
02-2840	Standoff for Smoke Control Module
02-3002	Plastic Standoffs for Driver Module
02-11912	Access Control Key Lock assembly
02-4983	Replacement Key
02-3002	Plastic Standoffs for Driver Module
02-12244	Lamp-test Toggle Switch
02-12245	Two-position Toggle Switch
02-12171	Three-position Toggle Switch
02-12172	Three-position Rotary Selector Switch
02-12173	Contact Block, Selector Switch
10-2663	Smoke-Control Module
10-2665	Switch/LED Driver Module

Table 14: Replacement/Spare Parts



**Exhibit 10: Switch/LED Driver Module
Terminal Designations**

See Table 16 for identification of Switch/LED driver module terminal designations/functions.

Terminal Blocks Accept 14 – 26 AWG	
All Connections are Supervised and Power Limited	
Approximate Dims:	3.5" (8.9cm) W x 7" (17.8cm) L x 0.75" (1.9cm) D

Table 15: Switch/LED Driver Module Specs

Terminal Block	Terminal Labels	Function	Wiring Requirements
P1, P3, P5, P7, P9, P11	On Off Auto	Each terminal provides connection points for three programmable switch inputs for each smoke control group. Each switch input can be programmed to control the operation of up to 25 control relays used for smoke control functions. The operation and activation of individual smoke control system components (e.g., fans, dampers) can be sequenced via programming in the order necessary to prevent physical damage to equipment.	
P2, P4, P6, P8, P10, P12	On Off Auto Fault	Each terminal provides four programmable LED outputs for each smoke control group. Each LED output can be programmed to provide positive status indication of the proper operation of smoke control system components. Each LED can be configured to turn "ON" or "OFF" based on the activation (any or all) of up to 50 network devices. The LEDs can also be programmed to indicate the "AUTO" or "FAULT" status of the smoke control group.	
P13	CFG 1 CFG 2	These terminals provide a connection point for user defined switch inputs. Each can be configured to perform any of the following system functions as required to suite the scope of the project: Reset – performs a system wide reset to restore system to normal operation. Deactivates control functions, flashes device LEDs and momentarily interrupts all resettable auxiliary power outputs. Any latching events will be cleared; however, if events are still present after reset, the system will immediately return to the appropriate operational state for the event. Silence – will deactivate any notification appliance circuit that is programmed as silenceable and deactivates all internal panel audibles (piezo) system wide. Acknowledge – will deactivate all internal panel audibles (piezo) system wide, while leaving all notification appliance circuits active system wide. Drill – will activate all outputs assigned to respond to the drill function. Drill function is deactivated by pressing RESET. LED Test – will temporarily turn on all LEDs system wide.	
	Access Key	Provides a connection point for the FSCS panel access control switch. This is a two-position key switch that prevents the smoke control system from responding to FSCS control switch functions unless the manual override engage switch is in the "ACCESS" position.	
P14	CFG 1 CFG 2 CFG 3	These terminals provide a connection point for three programmable LEDs. Each LED can be programmed to indicate the following system functions: Panel Silence – LED will illuminate when the SILENCE command has been issued from any system panel or peripheral device. Panel Drill – LED will illuminate when the DRILL command has been issued from any system panel or peripheral device. Panel Walktest – LED will illuminate when the WALKTEST command has been issued from any system panel or peripheral device. Panel Comm OK – LED will illuminate steady during normal operation to indicate proper communication with the associated control panel via the RS485 communication bus. LED will turn off to indicate loss of RS485 communication. Panel Power OK – LED will illuminate steady during normal operation to indicate presence of 24VDC power. LED will turn off to indicate loss of power.	
	PWRLED	LED will illuminate steady during normal operation to indicate presence of 24VDC power. LED will turn off to indicate loss of power.	
P15	LEGEND LEDs	Terminal provides four continuously powered LED connection points, which can be used to indicate device function in a legend if required.	
P16, P17		Connection point for 34-pin ribbon cables required to provide communication between Switch/LED Driver Module (P/N 10-2665) and Smoke Control Module (P/N 10-2663).	

Table 16: Switch/LED Driver Module Terminal Designations/Functions

3.0 PANEL LAYOUT CONSIDERATIONS

The FSCS shall provide status indication, fault indication, and manual control of all smoke-control system components. While the graphic layout of the FSCS panel is custom designed to suit your specific project requirements, certain features (i.e., LED colors and switch configurations) must meet the requirements outlined in NFPA 92A, NFPA 92B, and the International Fire Code (IFC), where applicable. These requirements are summarized in the following sections.

3.1 PHYSICAL ARRANGEMENT

The FSCS should be designed to depict the physical building arrangement, location of the smoke control systems and equipment within the building, and areas served by the equipment. Where zoned smoke control is used, a sufficient number of smoke control components to convey the intended operation of the smoke control systems and equipment should be shown. These components would normally include: major ducts showing how they are connected together and the direction of air flow, all fans in excess of 2000 ft³/min. (57m³/min), all dampers or groups of VAV boxes that are part of the smoke control system.

Note: If the graphic layout is too large to fit on a single panel, multiple panels may be used.

3.2 STATUS INDICATORS (LEDs)

The current status of the smoke control system shall be visually indicated at the FSCS. Status and fault indicators shall be provided for each smoke control zone, each piece of equipment capable of activation for smoke control, or a combination of these approaches. Status indicators shall be arranged and labeled to convey the intended system objectives as follows:

On-Auto-Off status indicators shall be provided for each dedicated smoke control system fan and for non-dedicated fans with a capacity greater than 2000 ft³/min (57 m³/min). “ON” status shall be sensed by a pressure difference, an airflow switch, or some other proof of airflow.

Open-Auto-Close status indicators shall be provided for each damper. Damper(s) shall be equipped with two end-limit “proof sensors” to indicate when the damper is fully open or closed. Both indicators should be off when the damper is positioned between the open and closed positions.

Note: The “Auto” position can be eliminated for equipment controlled only from the FSCS.

Fault indicators shall be provided for each piece of equipment to signal an equipment failure. For example: if the fans do not turn on within 60 seconds, or the dampers fail to reach their desired position within 75 seconds, the fault indicator should turn on.

Note: Each FSCS panel is provided with a “Lamp-Test” momentary toggle switch for testing all LEDs on the FSCS panel.

3.2.1 STATUS INDICATOR COLORS

The following list identifies the status indicator colors (LEDs) that must be used on the FSCS.

- Fans, dampers and other operating equipment in their normal status – WHITE
- Fans, dampers and other operating equipment in their off or closed status – RED
- Fans, dampers and other operating equipment in their on or open status – GREEN
- Fans, dampers and other operating equipment in a fault status – YELLOW
- Zone or device in alarm – RED

3.3 MANUAL CONTROLS (OVERRIDES)

Manual controls used for the purpose of initiating the smoke control sequence may be located either in the local control panel or in the FSCS panel. Where manual controls are provided in the FSCS panel, switch operation shall be access key protected against unauthorized use. For example: with the key access in the “LOCK” position, operation of a smoke-control switch will not affect the smoke-control system. However, with the key access in the “ACCESS” position, operation of an override switch will initiate the programmed smoke-control sequence.

3.3.1 CONTROL PRIORITIES

Activation of a manual override switch must have the highest priority control over the smoke-control systems and equipment and must be able to override or bypass any other manual or automatic control (e.g., start/stop or hand-off-auto switches, freeze detection devices, and duct smoke detectors) that is being used in the system; except when these controls are intended to protect against electrical overloads, provide personal safety, prevent major system damage, or participate in fire suppression.

Activation of a manual override switch shall not be required to bypass HAND-OFF-AUTO or START/STOP switches on fan motor controllers of nondedicated smoke-control system fans, where fan motor controllers are located in rooms accessible only to authorized personnel, or where use of the switch to turn the fan on or off will cause an off-normal indication at the building's main control center during normal operation.

3.3.2 MANUAL CONTROL ARRANGEMENT

Controls shall be arranged and labeled to convey the intended system objectives. Controls shall be provided for each smoke control zone, each piece of equipment capable of activation for smoke control, or a combination of these approaches as follows.

3.3.2.1 ZONED SMOKE CONTROL

Zoned smoke-control systems rely upon system programming to properly sequence all devices in the zone. **PRESSURE-AUTO-EXHAUST** control shall be provided for each smoke-control zone. This approach will aid fire fighters in readily understanding the operation of the smoke-control system and will help avoid problems caused by manually activating smoke-control equipment in the wrong sequence or failure to not activate critical equipment at all.

3.3.2.2 INDIVIDUAL EQUIPMENT CONTROL

The following control options shall be provided if control over individual pieces of equipment is to be used.

ON-OFF or **OPEN-CLOSE** control over all smoke-control and other critical equipment associated with a fire or smoke emergency and that can be controlled only from the FSCS.

ON-AUTO-OFF control over each individual piece of operating equipment that can also be controlled from other sources within the building (e.g., stairway pressurization fans; smoke exhaust fans; HVAC supply, return, and exhaust fans in excess of 2000 ft³/min. (57m³/min); elevator fans; atrium supply and exhaust fans; and any other operating equipment used or intended for smoke-control purposes).

OPEN-AUTO-CLOSE control over all individual dampers relating to smoke-control and that are also controlled from other sources within the building. HVAC terminal units, such as VAV mixing boxes that are all located within and serve one designated smoke-control zone, can be controlled collectively in lieu of individually. HVAC unit coil face bypass dampers that are arranged so as not to restrict overall airflow within the system can be exempted.

3.4 PANEL ARTWORK SUBMISSION

Once the smoke-control system is identified, approved and graphically translated, the preliminary artwork shall be submitted to Fike for creation of production level artwork. Drawing templates are available from Fike to assist you in creating the preliminary artwork. Panel production will not commence until the production level artwork is approved and signed off by the responsible parties (e.g., distributor of record, end user, AHJ, etc.). If changes are required after panel production has begun, extra charges may be incurred.

4.0 WIRING LIMITATIONS

RS485 Circuit - The associated fire alarm control panel's RS485 circuit can drive up to 32 devices including the control panel. The number of smoke control modules that can be installed on the system is dependent upon the number of devices installed on the associated control panels RS485 circuit. The RS485 circuit can not be T-Tapped; it must be wired in a continuous fashion. The maximum wire distance from the control panel to the module is 4,000 feet (1,219 m) of Belden 9841 shielded twisted low capacitance cable. For plenum applications, use Belden 82841, 82842, or 89841. Limit the total wire resistance to 96 ohms maximum. Do not run the RS485 cable adjacent to, or in the same conduit as 120volts AC service, noisy electrical circuits that are powering mechanical bells or horns, audio circuits above 25 volts RMS, or motor control circuits.

24VDC Power Circuit - Power for the smoke control module is provided via a separate power loop from the associated control panel or battery backed 24VDC, regulated, power-limited, power supply listed for Fire Protective Signaling Use. Each module must be accounted for in the control panels power and battery calculations. Utilize the power information provided in Section 2.5 for these calculations. If the control panel is configured to supervise the module(s), a loss of power will register as a communication failure at the control panel.

Note: If module power is supplied from a source other than the control panel, a ground fault condition could occur.

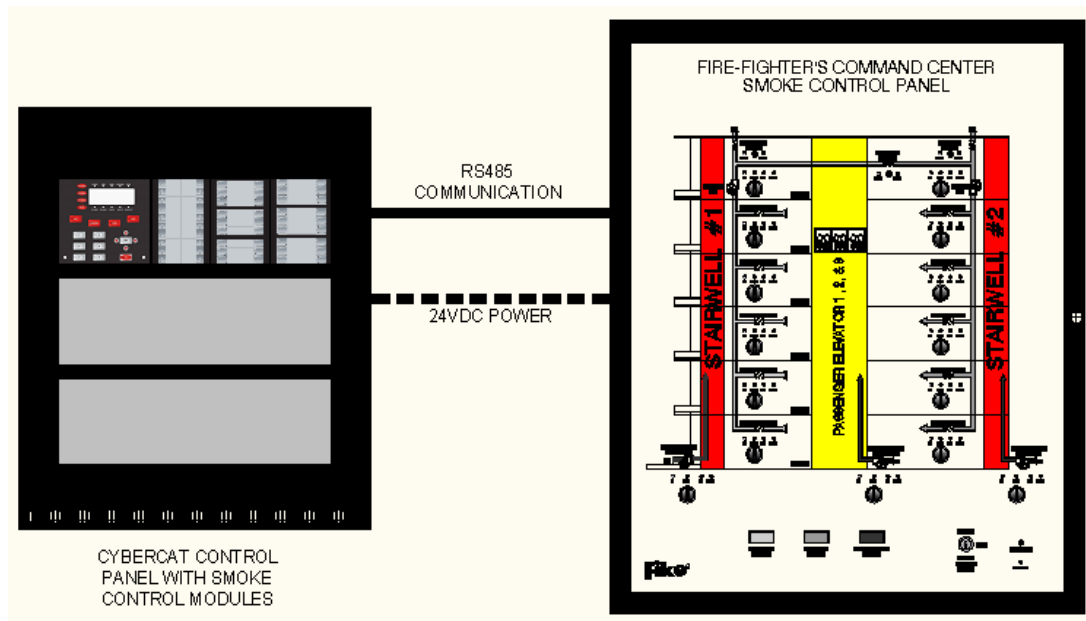


Exhibit 11: FSCS Panel Wiring Limitations

5.0 INSTALLATION

The following installation instructions are to be used by the field technician to connect the FSCS to the associated control panel. The instructions must be strictly adhered to, too prevent potential damage to the control panel and the associated equipment.

Caution

1. *The control panel and associated equipment contains static sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.*
2. *Never remove or install boards, internal cables or components with power applied. Failure to follow the steps above can result in irreparable damage to the system components. This damage may adversely affect the operation of the control unit but its effect may not be readily apparent.*

5.1 SELECT PANEL MOUNTING LOCATION

The FSCS should be located in a secure room to prevent unauthorized personnel from tampering with it. Were acceptable to the authority having jurisdiction, the FSCS should be located within a specific location or room, separated from the public areas by a marked and locked door. If the FSCS is located in a separate room, the physical design of the room should be acceptable to the authority having jurisdiction. The FSCS should be located in close proximity to other fire fighters' systems as can be provided within the building.

Additional environmental items to consider when selecting the panel mounting location includes the presence of vibration, dust, moisture, electromagnetic interference, radio frequency interference and temperature, each of which can adversely effect the successful operation and useful life of the equipment. Fike recommends that the FSCS be installed in an environment with a nominal room temperature of 15°-27°C / 60°-80°F, with a relative humidity of 85 percent. Do not install in an environment that exceeds these temperature and humidity ratings.

5.2 INSTALL BACK BOX

The back box and optional flush mount trim-ring are typically installed prior to receiving the door assembly and electronics. The back box is not equipped with electrical knock-outs. Installer must create electrical knockouts for connection of conduit and wiring in the field. Knockouts should be created using a knockout punch on the sides, top or bottom of the enclosure only.

Caution

Do not install electronic components in the back box until enclosure is free from drywall dust, debris, and necessary conduit knockouts have been punched into the enclosure.

Note: Do not install conduit from the back of the box unless you get approval from Fike on an acceptable location.

The back box has mounting holes provided on one side for securing the door assembly. Prior to installing the back box, verify whether the door assembly is to be hinged on the enclosures left side or right side and install the box accordingly.

The back box can be surface or flush mounted as required to suite project requirements (Exhibits 12 through 15). For surface mounting, utilize the mounting key holes supplied in the back of the enclosure and secure the box to the wall with suitable anchors. For flush mounting, an optional flush mount trim-ring is required. Cut the opening in the wall to fit the back box dimensions and install the flush mount trim-ring securing with suitable anchors. Insert the back box into the trim-ring opening and secure with suitable anchors. The trim ring allows the installer to adjust how deep the back box is set into the wall.

Note: The back box is not fire rated; do not install in fire-rated walls.

Note: The back box should never be mounted deeper than flush with the finished wall. This will prevent the door from opening.

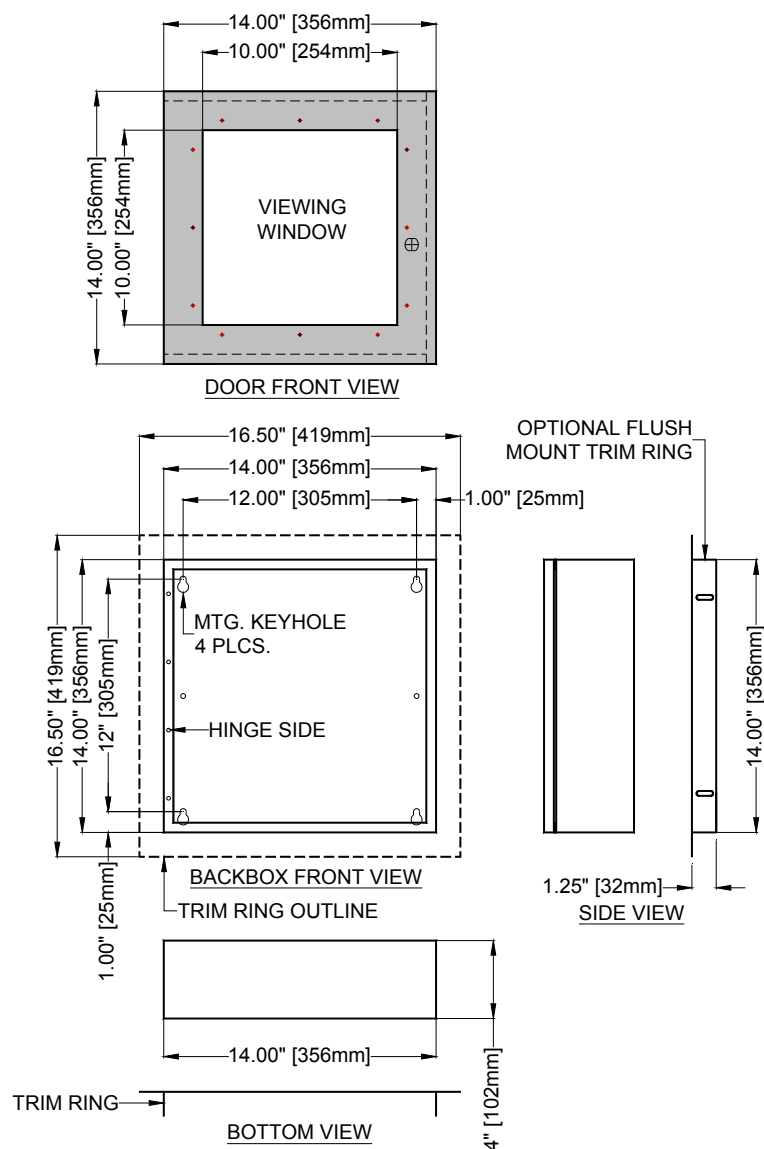


Exhibit 12: Door Assembly and Back Box Dimensions, P/N 10-2690

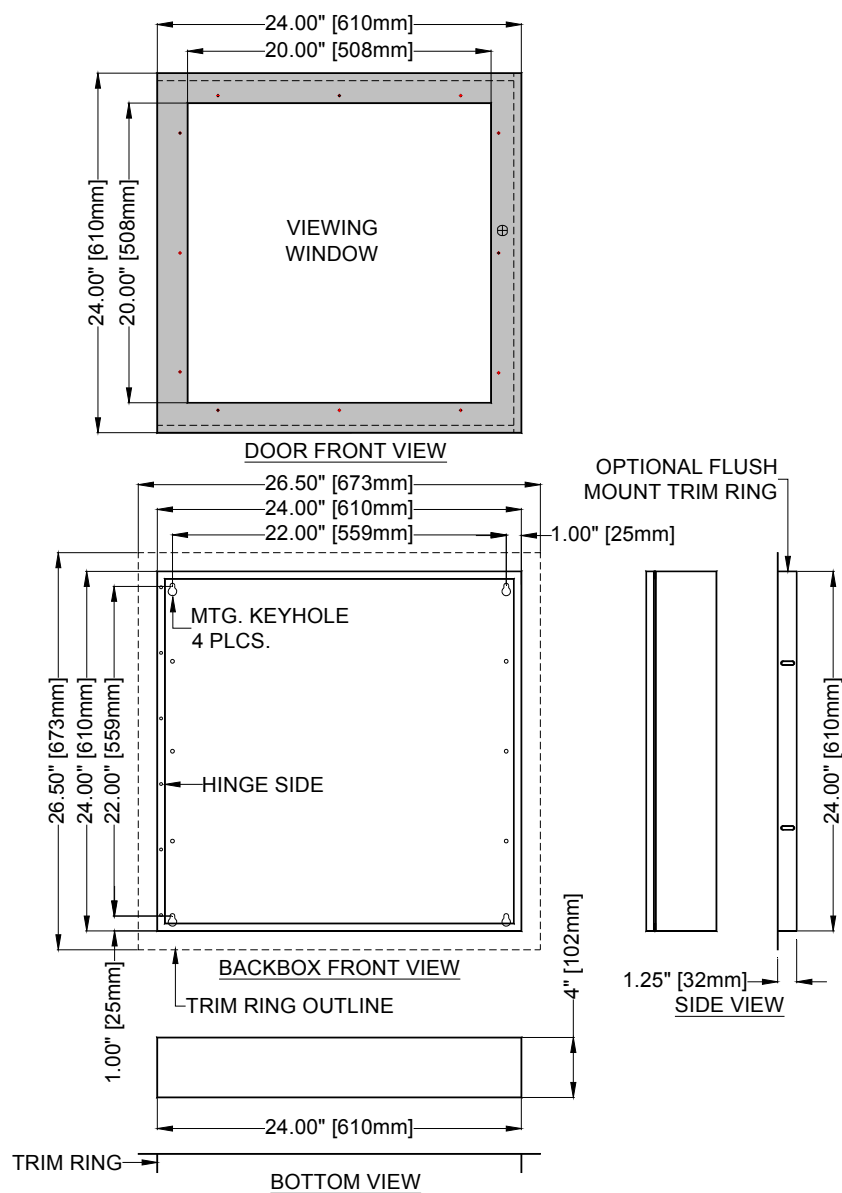


Exhibit 13: Door Assembly and Back Box Dimensions, P/N 10-2691

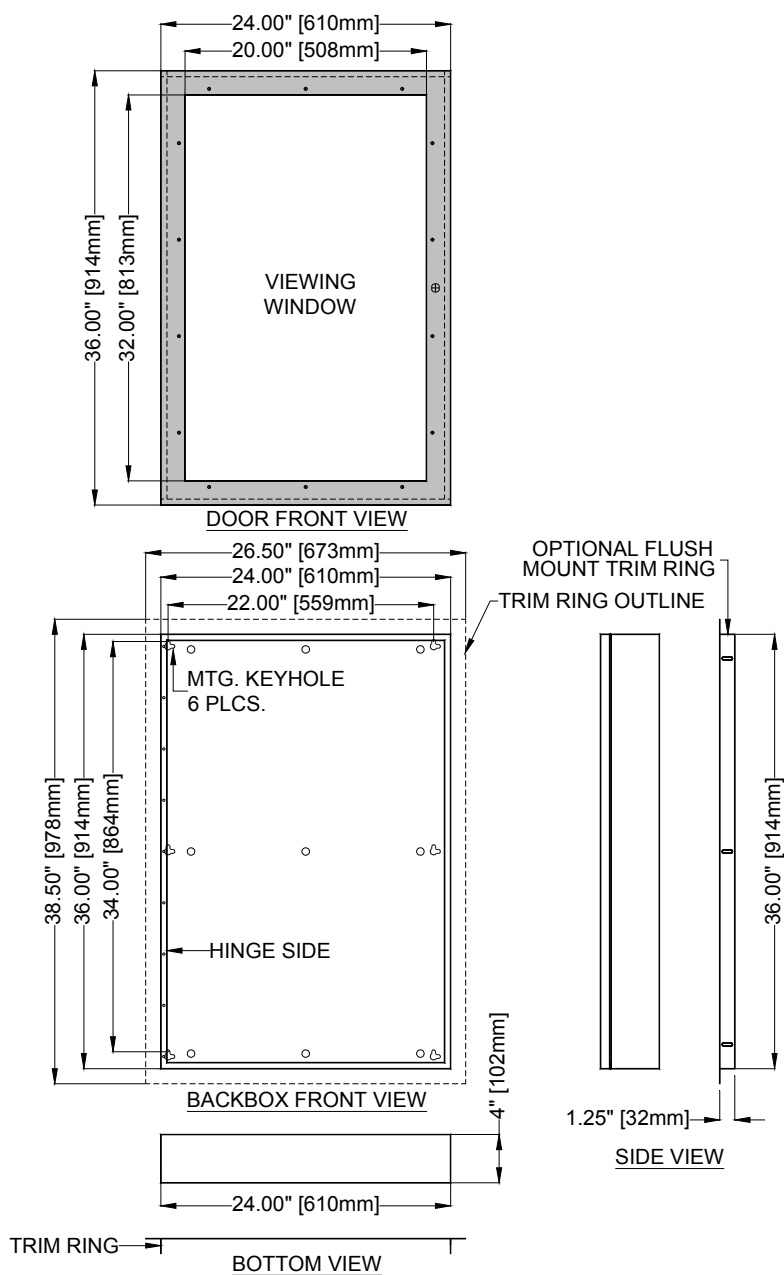


Exhibit 14: Door Assembly and Back Box Dimensions, P/N 10-2692

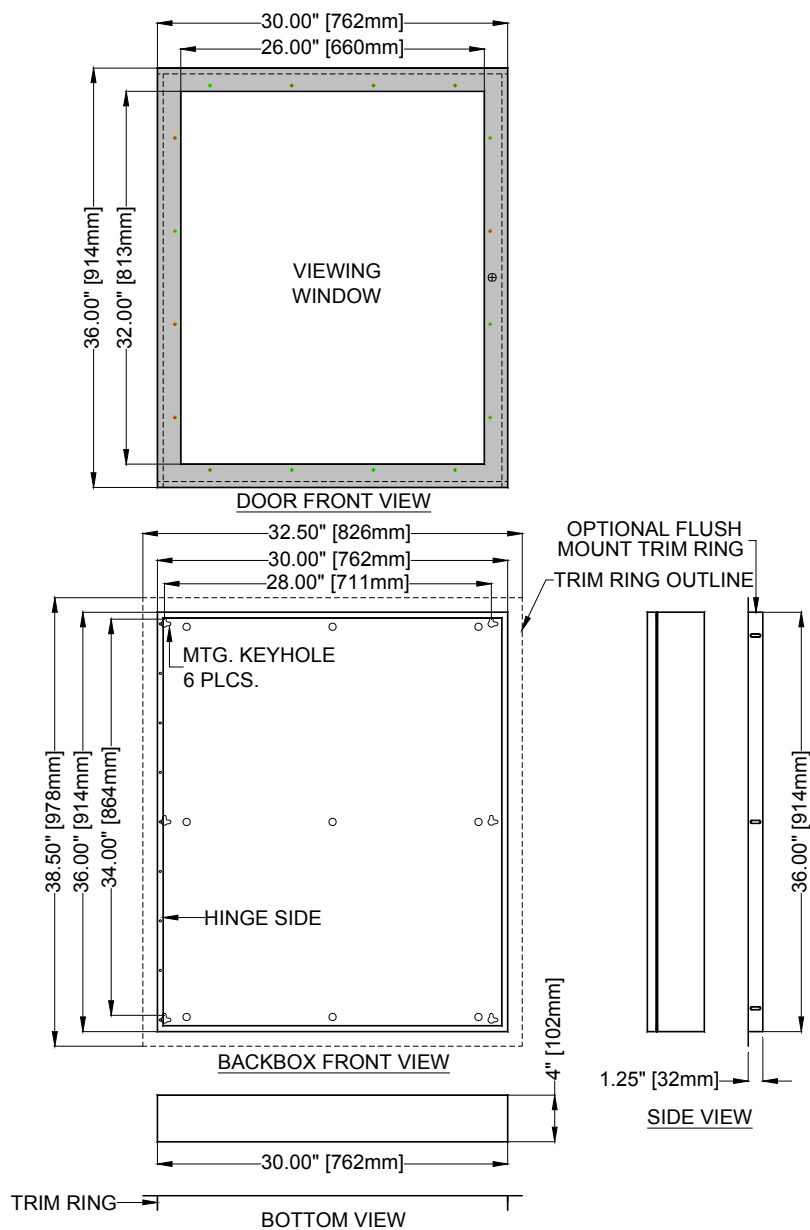


Exhibit 15: Door Assembly and Back Box Dimensions, P/N 10-2693

5.3 PULL FIELD WIRING INTO BACK-BOX

Unless otherwise detailed in this manual or in other documents relating to this module, the designer, installation and service technician shall utilize published standards and references such as: NFPA 70 National Electrical Code; NFPA 72 National Fire Alarm Code; and other standards which may be relevant to the Local Authority Having Jurisdiction (AHJ) for field wiring installation requirements.

⚠ Caution

If connecting the graphic panel to an existing system, disconnect AC power, batteries, and RS485 circuit from control panel and wait 60 seconds prior to module installation. Failure to do so can damage circuits.

1. Pull RS485 and 24vdc power wiring into back-box utilizing created knockouts. Leave sufficient wire to make connections at module terminals without straining board components.
2. Short conductors at one end and measure the total wire resistance. Compare measured value to the listed circuit limitations for the particular panel that the module is being tied to. If values are within the circuit limitations, proceed to next step.

⚠ Caution

*If megger testing of field wiring is required, all field devices **MUST** be disconnected from the circuit prior to testing. Megger testing could damage electronic components.*

5.4 INSTALL DOOR ASSEMBLY AND BACK PLATE

The door assembly and back plate are typically shipped together and are installed after the back box installation is complete and all dust and debris has been removed from the enclosure. The following steps should be taken to install the door assembly and back plate to the back box.

1. Remove the door assembly and back plate from the packaging and check for shipping damage.
2. Install the back plate onto the mounting studs provided in the back of the enclosure. Secure in place with supplied mounting hardware.
3. Install door assembly on to back box by aligning door hinge with mounting holes provided in the back box and secure with supplied mounting hardware as shown in Exhibit 16. Door assemblies are typically hinged on the left side, unless specified differently when ordered. Due to the size and weight of the door assembly, larger graphic panels will require two individuals to install the door assembly.

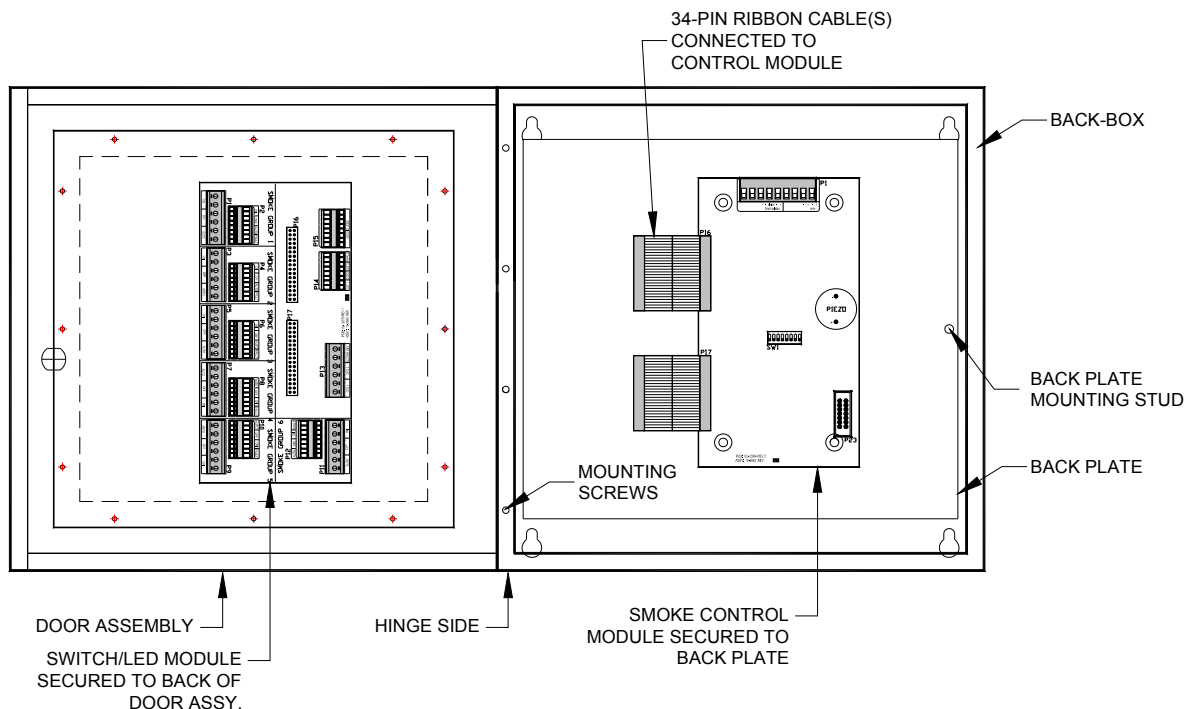


Exhibit 16: Door Assembly and Back Plate Installation

5.5 CONNECT RIBBON CABLES

The ribbon cables are typically connected to the Smoke Control Module(s) when shipped from the factory. Final connections to the Switch/LED Interface Boards are made after the door assembly has been mounted to the back-box.

Connect the 34-pin ribbon cable(s) from Smoke Control Module(s) to Switch/LED Interface Board(s) as shown in Exhibit 17. Each ribbon cable is keyed with a red stripe. For proper operation, cable must be connected to the Interface Board so that the red key stripe is secured to position 1 on the terminal block.

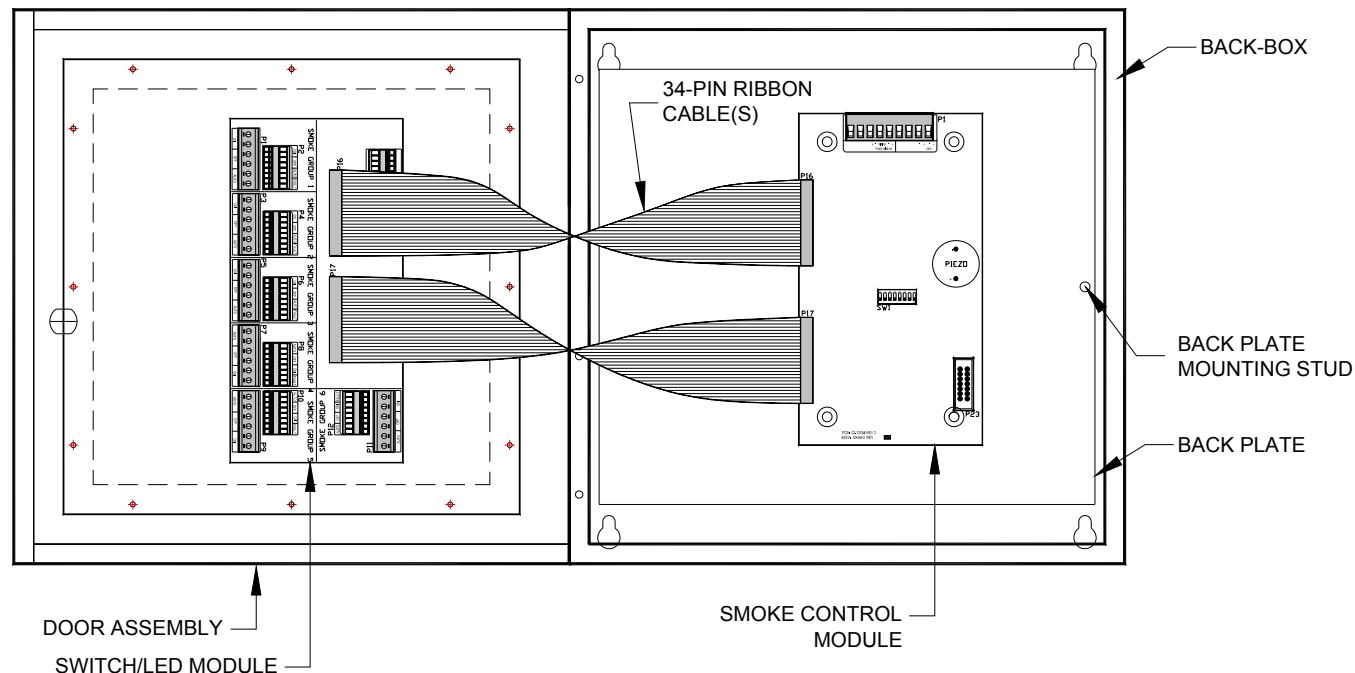


Exhibit 17: Ribbon Cable Connections

5.6 SET BINARY ADDRESS ON SMOKE CONTROL MODULE

Each Smoke Control Module requires a unique address for identification on the RS485 peripheral bus. DIP-switch SW1 is used to set the address for the device (Exhibit 18). A maximum number of 31 devices can be connected to the RS485 peripheral bus circuit. The device addresses do not need to be sequential and can be set to any number between 02 and 32. Note that 00 is not a valid address and 01 is reserved for the control panel. See Table 17 for DIP-switch settings for each binary address (ID number).

Binary Value	1	2	4	8	16	32
Dip Switch #	1	2	3	4	5	6
Address						
0	NOT VALID					
1	ON	◀ PANEL ONLY				
2		ON				
3	ON	ON				
4			ON			
5	ON		ON			
6		ON	ON			
7	ON	ON	ON			
8				ON		
9	ON			ON		
10		ON		ON		
11	ON	ON		ON		
12			ON	ON		
13	ON		ON	ON		
14		ON	ON	ON		
15	ON	ON	ON	ON		
16					ON	
17	ON				ON	
18		ON			ON	
19	ON	ON			ON	
20			ON		ON	
21	ON		ON		ON	
22		ON	ON		ON	
23	ON	ON	ON		ON	
24				ON	ON	
25	ON			ON	ON	
26		ON		ON	ON	
27	ON	ON		ON	ON	
28			ON	ON	ON	
29	ON		ON	ON	ON	
30		ON	ON	ON	ON	
31	ON	ON	ON	ON	ON	
32						ON

Table 17: Binary Addressing

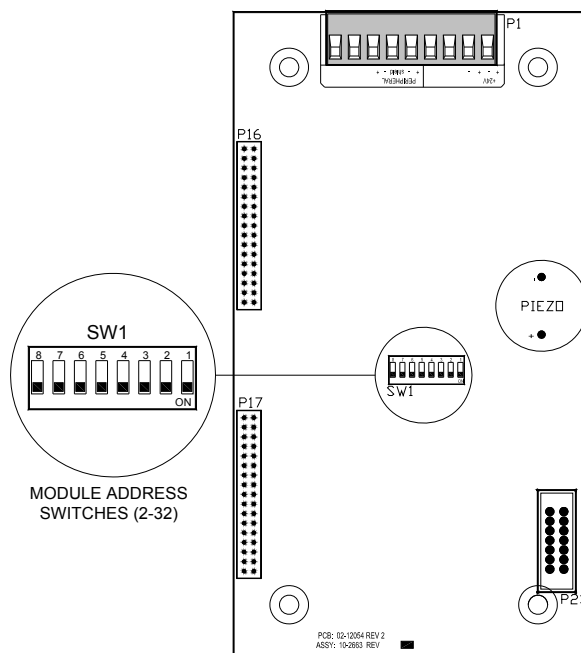


Exhibit 18: Smoke-Control Module Binary Addressing

The functionality of DIP-switch 7 varies depending upon the module's firmware version as described below:

Firmware version 1.17

In the 'ON' position, all lamps connected to the Switch/LED module will cycle ON and OFF until the switch is turned off.

Firmware version 1.20

Sets the peripheral bus communication speed that will be used by the Smoke-Control Module to communicate with the host control panel. In the 'OFF' position, the module will communicate at 9600 bps (standard). In the 'ON' position, the card will communicate at 38400 bps (fast). The selected communication speed set on the module must match the host control panel settings. In addition, all devices connected to the same peripheral bus must use the same communication speed setting.

Caution

Turning DIP-switch 8 on will clear the modules configuration. Use C-Linx to resend the configuration to the module.

5.7 CONNECT FIELD WIRING

1. Disconnect AC power and batteries from the Control panel and wait 60 seconds prior to connecting field wiring. Failure to do so can damage circuits.
2. Disconnect all RS485 connections from the Control panel.
3. Connect the RS485 circuit wiring to terminal block P1, terminals 1 (P1+) and 2 (P1-) as shown in Exhibit 19. If using shielded cable, connect shield to terminal 3 (Shield).
4. Remove the 100-ohm resistor and connect outgoing RS485 circuit wiring to terminal block P1, terminals 4 (P1+) and 5 (P1-) as shown in Exhibit 19. If last device on the circuit, leave the EOL resistor in place.
5. Connect the 24VDC wiring to terminal block P1, terminals 6 (-) and 7 (+) as shown in Exhibit 19.
6. Connect outgoing 24VDC wiring (if applicable) to terminal block P1, terminals 8 (-) and 9 (+) as shown in Exhibit 19.

Caution

1. Power must be turned off when connecting 24 VDC power to the module to avoid damaging the equipment.
2. Do not over tighten screw terminals. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

5.8 POWER-UP FSCS PANEL

Before applying power to the FSCS panel, verify that all boards, cables and components are properly installed then reapply AC power and batteries (in that order). Green Power O.K. LED should be illuminated. Reconnect all RS485 connections to the control panel. Verify field wiring voltages; if voltages measure outside of the values stated in this manual at any time, immediately power down and determine cause of fault.

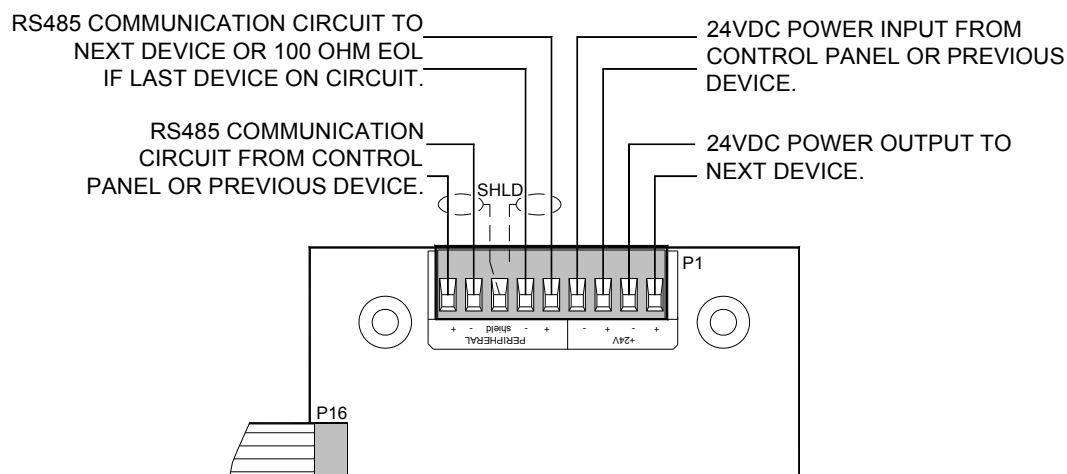


Exhibit 19: RS485 and Power Wiring Connections

6.0 PROGRAM SMOKE CONTROL MODULE(S)

Each Smoke Control Module must be programmed through the associated control panel using a lap top computer and Fike's C-Linx software. Refer to Fike document 06-448, "C-Linx Software Manual" for programming instructions. Programming cable 10-1874A is used to download the configuration to the module via the panel's P3, RS232 port.

Programming Feature	Possible Settings (Defaults shown bold)
Peripheral Address	2-32
Local Buzzer	Enabled /Disabled
Graphic Switch Configuration (P13)	No function assigned / Reset / Silence / Acknowledge / Drill / LED Test
Graphic LED Configuration (P14)	No function assigned / Panel Silence / Panel Drill / Panel Walktest / Panel Comm OK / Panel Power OK
Smoke Group	1 – 6
Switch Configuration Options (P1, P3, P5, P7, P9, P11)	
Switch Inputs	On / Auto / Off
Switch Functions	No function assigned / Smoke Control
Relay (selection table)	
Relay Action	None / On / Auto / Off
Action Start	Action starts with confirmation address Or Delay time / Action starts with confirmation address AND delay timer
Confirmation Address	Panel: 1 - 128 Loop: 0 – 4 Address: 0 – 254
Relay Address	Panel: 1 - 128 Loop: 0 – 4 Address: 0 – 254
Delay (timer)	0 – 255 seconds
Delay (timer) Start	Delay timer starts immediately / Delay timer starts after confirmation address activates
LED Configuration Options (P2, P4, P6, P8, P10, P12)	
LED Outputs	On / Off / Auto / Fault
LED Functions	No function assigned / On – Any network device / On – All network device / Off – Any network device / Off – All network device / Auto LED function / Fault LED function
Timer	0 – 255 seconds
Device Assignments (max. 50)	Panel: 1 - 128 Loop: 0 – 4 Address: 0 – 254

Table 19: Programming Options

7.0 SMOKE-CONTROL SYSTEM ACTIVATION

The smoke-control system can be activated either automatically via detection devices connected to the Fire Alarm system or manually via override switches that can be located in the fire alarm panel, in the FSCS panel, or a combination of the two. Under normal (non-active) operation, the FSCS AUTO LEDs for all components will be illuminated. A general description of both activation methods is described below.

7.1 AUTOMATIC ACTIVATION

Automatic smoke-control is initiated when devices connected to the associated fire alarm panel detect a fire condition. The integral piezo on the FSCS panel will activate to annunciate the fire condition. The smoke-control system shall automatically initiate the programmed smoke-control strategy within 10 seconds from acknowledgement of the fire condition. The fire alarm panel shall issue commands to controlled devices to condition them to their smoke-control state. The FSCS panel turns on appropriate status LEDs to indicate the current status of fans, dampers, and/or zones. Equipment or zones activated by the automatic activation shall remain active until overridden by a manual override switch or until the fire alarm condition clears and the fire alarm panel is reset.

The total response time for individual components to reach their desired state after the smoke-control strategy has been initiated shall not exceed 60 seconds for fans, and 75 seconds for dampers. Failure of any component associated with the smoke-control system to reach its desired state within the allotted time shall be indicated on the FSCS by the activation of a FAULT LED.

7.2 MANUAL ACTIVATION

Manual smoke-control is initiated when a firefighter turns the manual override engage key from the LOCK to the ACCESS position and proceeds to activate a manual override switch. The integral piezo on the FSCS panel will activate to annunciate the switch activation. The smoke-control system shall automatically initiate the programmed smoke-control strategy within 10 seconds after manual override switch activation. The fire alarm panel shall issue commands to controlled devices to condition them to their smoke-control state.

The FSCS panel turns on appropriate status LEDs to indicate the current status of fans, dampers, and/or zones. Equipment or zones activated by the manual activation shall remain active until overridden by a manual override switch or until the fire alarm condition clears and the fire alarm panel is reset.

The total response time for individual components to reach their desired state after the smoke-control strategy has been initiated shall not exceed 60 seconds for fans, and 75 seconds for dampers. Failure of any component associated with the smoke-control system to reach its desired state within the allotted time shall be indicated on the FSCS by the activation of a FAULT LED.

8.0 TESTING AND PLACING INTO SERVICE

The FSCS shall be tested against the smoke control strategy developed for your specific project during the design stage. A testing plan and acceptance criteria should be established and agreed upon by all parties associated with the implementation and operation of the smoke control system. Prior to testing, the operation and completeness of all systems and components associated with the smoke control system shall be verified. This may include one or more of the following subsystems:

1. Fire Alarm System
2. Energy Management System
3. Building Management System
4. HVAC Equipment
5. Electrical Equipment
6. Temperature Control Systems
7. Normal Power
8. Standby Power
9. Automatic Suppression Systems
10. Automatic operating doors and closers
11. Dedicated smoke-control systems
12. Nondedicated smoke-control systems
13. Emergency elevator operation

Final acceptance testing shall be performed in accordance with the requirements of NFPA 72, NFPA 92A, NFPA 92B and other applicable codes and standards adopted by the local authority having jurisdiction.

9.0 MODIFICATIONS

Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

If modifications are made to the smoke-control system (e.g., dampers, fans, ductwork, etc.) or the zone boundaries have been changed since the last test, acceptance testing shall be conducted on the modified portion of the system.

10.0 SERVICING

Inspection, Testing, and Maintenance shall be performed by qualified individuals. Fike provides a training class for Factory Authorized Sales outlets. The training class provides Certification for Installation, Service and Maintenance of this product. The certified individual performing the service must have also read this entire manual and understand the basics of Fire Alarm Systems codes and standards. Before proceeding with any testing, notify all building occupants and any parties monitoring the Fire Alarm System. Notification must also be performed at the conclusion of the testing.

11.0 MAINTENANCE

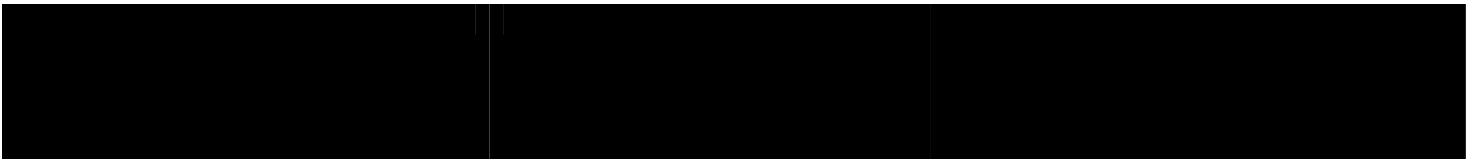
In order to have an optimum Fire Protection System completely functional at all times, it is recommended to follow NFPA 72, NFPA 92A, and NFPA 92B Guidelines. A permanent record shall be maintained documenting all inspections, testing and maintenance. The components of the FSCS that have a shelf life are as follows:

Battery (Lithium-Ion Coin Cell), P/N 02-4040 – Replace every 5 years. *Please dispose of batteries properly.*

Caution

Replacement of coin cell battery requires removing power (24VDC) from the smoke control module prior to battery removal. Removing both sources will result in loss of module configuration. Connect to card and download the device configuration prior to replacing battery.

Other components may periodically require replacement or service as necessary. Indication for such service will be determined from troubleshooting and scheduled service.



704 SW 10th Street
P.O. Box 610
Blue Springs, Missouri 64013

Tel: (816) 229-3405
Fax: (816) 229-0314
www.fike.com