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SFS PROJECT# FA25075

OVERVIEW

THE SCOPE OF THIS PROJECT IS RELOCATE (1) NOTIFICATION DEVICE AND (1) SMOKE DETECTOR. ALSO TO ADD (2) ADDITIONAL SMOKE DETECTORS. THIS WILL BE FOR A TENANT IMPROVEMENT.

CONTENTS

1. SIEMENS (FC922) FIRE ALARM CONTROL PANEL
2. SIEMENS (ZR-MC-C) CEILING HORN-STROBE
3. SIEMENS (OP921) SMOKE DETECTOR

Cerberus[®] PRO

252-Point and 504-Point Addressable Fire Alarm Control Panel Models FC922 | FC924

Architect & Engineer Specifications

- Addressable fire alarm control panel (FACP) intended for mid-size building applications
- Comprised of the following system components:
 - Operating units
 - Periphery boards
 - Power supplies
 - System enclosures 'Walk Test'
- System features:
 - Supports 252-to-504 addressable devices:
 - One (1) to four (4) 'Class B'; one (1) to two (2) 'Class A' for Model FC922
 - One (1) to eight (8) 'Class B'; one (1) to four (4) 'Class A' for Model FC924
- 10,000-event history-logging capability
- Includes one (1) 'Class A' or two (2) 'Class B' notification appliance circuits (NACs)
- Resettable and non-resettable 24VDC, [nominal] auxiliary power
- Connectivity to a leased-line / city-tie module
- Releasing module supports activation of releasing valves in pre-action / deluge systems / agent release
- Off-normal warning message prior to reset
- Fast and easy set-up with auto-configuration feature
- Networkable up to 32 panels using CV Web or up to 16 panels using SafeDLINK
- Cerberus[®] DMS Danger Management Station can monitor and control up to 32 Models FC922 and FC924 FACPs
- Supports multiple global displays
- Digital alarm communication transmitter (DACT)
- UL 864 10th Edition Listed, ULC-S527 Listed
- FM, CSFM & NYC Fire Department Approved

Product Overview

The Cerberus PRO 252-point (Model FC922) / 504-point (Model FC924) addressable FACP is designed to meet the fire-protection needs of mid-size buildings. This advanced FACP offers features typically required in mid-size buildings in a package that is easy to install and competitively priced.

Additionally, Models FC922 and FC924 are networkable, allowing the systems to fulfill the growing fire-protection needs of the building. The programming software for the 252/ 504-point fire systems is held in flash electrically erasable programmable read-only memory (EEPROM).

The following Cerberus PRO system components are used in the 252-point / 504-point FACP:

- Operating units
- Periphery boards
- Power supplies
- System enclosures

Other options are available to meet specific needs.

Models FC922 and FC924 are FM (#3010); CSFM(#7165-0067:0259) and FDNY (#6104) Approved.



Model FC922

Specifications

Operating Interface Unit

The Operating Interface Unit (Model FCM2018-U3 or Model FCM2019-U3) functions as the operating interface and central microprocessor for Models FC922 and FC924 with up to 10,000 event history log.

Either operating interface unit provides multi-use capability for each end-user to efficiently 'Acknowledge' events; to quickly control the NACs of the FACP, and to permit a manual reset of the respective system. Detailed data about the nature and location of the events can also be displayed, via a backlit, 2" —x— 4-3/4" (5.1 cm. —x— 12.1 cm.) LCD screen and the four-way navigation push button at the top of the FACP.

Note: For applications in **Canada** that require a Desigo operating unit with LEDs, Model FCM2035-U3 must be ordered.

Periphery Boards

The periphery boards (Models FCI2016-U1 and FCI2017-U1) serve as the main operating components for the 252 / 504-point FACP. Each module operates and monitors input-device identity; as well as controls the signaling-line circuits that communicate with smoke detectors and other field devices (i.e. —C-NET).



Power Supplies

All functions are supported by the power supplies (Model FP2011-U1 or Model FP2012-U1), which therefore eliminate the need for external power supplies.

Further, the 170-Watt power supply (Model FP2011-U1) and 300-Watt power supply (Model FP2012-U1) provide primary, 24VDC nominal power for normal operation to Models FC922 and FC924. Both power supplies are filtered and regulated. Model FP2011-U1 is rated at 6.5 Amps, and the rating for Model FP2012-U1 is 11.5A.

The 170-Watt power supply incorporates a 4.0A, non-resettable slow-blow fuse on the primary input, and includes a built-in AC-line filter for surge and noise suppression. Model FP2011-U1 mounts in the FACP enclosure, and there are no serviceable Cerberus PRO parts to be maintained.

The 300-Watt power supply incorporates two (2) 6.3A replaceable, non-resettable slow-blow fuses on the primary input and includes a built-in AC line filter for surge and noise suppression. Model FP2012-U1 mounts in the FACP's enclosure, and there are no serviceable Cerberus PRO parts to be maintained.

System Enclosures

The Cerberus PRO fire-alarm enclosures and their accessories provide a complete set of hardware for mounting all Cerberus PRO main-system and remote terminal cards and modules.

The hardware allows this Cerberus PRO system to be configured for a variety of applications, as well as for future system upgrades. Included in the enclosure series are back box and door sets; removable mounting plates and clear lenses, as well as blank plates for use with the enclosure doors.

All enclosures come with ground straps for the inner and outer doors, shield termination lugs, grounding lugs, and tie wrap lances for securing wire. All Cerberus PRO two height-unit (2HU) enclosures can also mount system back-up batteries to 33AH in capacity.

Models FC922 and FC924 utilize a two-height-unit enclosure. The following components comprise a complete two-height-unit enclosure:

- One (1) back box, (Model FHB2002-U1 / R1)
- One (1) or two (2) inner doors, (Models FHD2004-U1 or FHD2005-U1)
- One (1) outer door, (Model FHD2002-U3 / R3 or FHD2003-U3 / R3)
- One (1) or two (2) clear windows, (Model FHD2006-U1)

The approximate size for each two-height-unit enclosure is: 27.5" (70cm.) high; 21.5" (54.6cm.) wide, and 5.75" (14.6cm.) deep. The weight, without any attached components, is approximately 6.3 Lbs. (2858 g).

Note: One (1) window is installed for Model FHD2002-U3 / R3 outer door, and two (2) windows are required for Model FHD2003-U3 / R3

Additionally, the two-height-unit enclosure supports the following optional components:

- Enclosure trim kit (for flush-mounting)
- Battery bracket (to comply with seismic certification)
- DIN rail kit (provides connection between internal-system wiring and field wiring)

Optional Accessories

Digital Alarm Communication Transmitter (DACT)

The DACT is used to provide communication between Models FC922 and FC924 and with either a central or remote monitoring station. The Model FCA2015-U1 module mounts directly on the back enclosure and connects to the periphery boards. The DACT enables remote transmission of alarms and events via a public telephone line.

Releasing Module

The releasing module (Model XCI2001-U1) supports activation of releasing valves in pre-action / deluge systems (including double-interlock pre-action systems, or Sinorix® Engineered Fire Suppression systems). Activation can be event-controlled or performed by addressable manual pull stations. The releasing module is installed on the periphery board and supports `Class B' releasing circuits.

When installed on Models FC922 / FC924, the releasing module contains an integral manual-disconnect switch for releasing circuits. This essential feature protects the releasing circuits from accidental discharge during maintenance.

Leased-Line / City-Tie Module

The Leased-Line / City-Tie module (Model FCI2020-U1) is used as an optional module, providing a local-energy output for municipal call-box connection.

Model FCI2020-U1 also gives a reverse-polarity output for leased-line connection. Model FCI2020-U1 is installed on the periphery board for Models FC2025 and FC2050 FACP's. When used for connection to a municipal call box, the city-tie function supports Alarm-event transmission. When used for leased-line connection, the module supports two (2) leased telephone lines for transmitting *Alarm*, *Trouble* and *Supervisory* events.

Battery Disconnect Module

The Battery Disconnect Module (Model FCA2032-U1) is specifically designed to disconnect the backup battery on the Cerberus PRO 252 / 504-point addressable FACP when its voltage drops below 19VDC. Model FCA2032-U1's cut-off capability prevents the battery from operating beyond its normal power level for basic system operation.

Hardware Migration Kit

The Cerberus PRO 922/924 panel offers support for Siemens legacy addressable and conventional systems. Model FHA2056-series kits are specifically designed for the seamless transition of an existing Siemens FS-250 (FireSeeker) or MPC6000 control panel into a fully operational 50 | 252 or 504-point addressable Cerberus PRO fire-alarm FACP, [FC901 | FC922 or FC924], respectively.

Each shipment of the Model FHA2056-series kits contains the following pieces of equipment:

- One (1) outer door
- One (1) inner door
- One (1) hinge-assembly bracket
- One (1) back plate
- One (1) inner-door bracket

NOTE: The five (5) items that comprise one (1) Model FHA2056-series hardware-migration kit cannot be ordered individually.

Model FHA-MIQKIT-04/-05 offers support for legacy MXL and MXL-IQ peripherals using the FCL2004 device interface module.

Hardware Migration Kit (cont.)

This allows the user to configure a Cerberus PRO panel to communicate to older addressable devices, offering a seamless migration solution to the latest technology system.

Network Module

The C-WEB network module (Model FN2001-U1) is used to network up to 16 FACP's, or one (1) fire terminal, via the C-NET system bus.

Model FN2001-U1 is plugged into the Operating Units (Models FCM2018-U3 /R3 and FCM2019-U3 /R3). Model FN2001-U1, which connects to a system input / output bus, has ground-fault monitoring, as well as an integrated degrade-mode feature. Redundant networking is done with one (1) network module per FACP [Simple-Loop Trouble]. There is electrical isolation between the system bus and FACP.

Remote Display Terminals

The Remote Display Terminals (Models FT2014-U3 /R3 and FT2015-U3 /R3) are remote annunciators that show the existing status of Models FC922 / FC924. The remote display terminals (Models FT2014-U3/R3 and FT2015-U3/R3) are remote annunciators which can be configured as global displays, and indicate real-time system status.

Light-emitting diodes (LEDs) will illuminate for any given *Alarm, Supervisory and Trouble* Cerberus PRO-system event. The LCD screen will give details of the event in alphanumeric form. The display screen can be scrolled, via the four-way navigation button, to reveal additional events.

Model FT2014-U3 /R3 is a display-only remote annunciator that has one (1) button used to silence the local sounder. Model FT2015-U3 /R3 has three (3) control buttons for 'acknowledging' events, 'silencing' audible circuits and 'resetting' the system. Additionally, there are three (3) user-programmable buttons available. Model FT2015-U3 /R3 has an integral key switch that enables the control buttons to operate.

The remote display terminals are remotely connected to Models FC922 and FC924, via the RS-485 interface. Models FC922 and FC924 require the Model FCA2016-U1 RS-485 module to provide communication to the remote display terminals. Model FCA2016-U1 supports Style 4 or Style 6 wiring. Up to eight (8) modules can be supported on a RS-485 bus.

The remote display terminals require 24VDC [nominal] power, and the necessary power can be provided from this Cerberus PRO FACP or from another UL / ULC Listed, 24VDC power source.

Note: A Model FHD2012-U1 inner door can be optionally purchased in UL markets. The inner door mounts with the optional Model FT201x Series Remote Display terminals. Having a Model FHD2012-U1 inner door installed can assist in preventing unauthorized access to the RDT.

S-series License Keys

The S1 license key (Model FCA2033-A1) allows for virtual monitoring and control between a 252 / 504-point addressable fire-only panel and a personal computer.

The S2 license key (Model FCA2034-A1) is a BACnet output, and is used for monitoring-only purposes by a 3rd-party system for life-safety objects.

The S3 license key (Model FCA2035-A1) is a combination license key that allows for virtual monitoring and control, as well as for distribution of BACnet (monitoring-only).

S-series License Keys (cont.)

A four-digit personal identification number (PIN) must be used in order to prevent unauthorized access.

Tabular Annunciators

Tabular annunciators allow system events sent from Cerberus PRO addressable panels to be displayed remotely in real-time.

The Model FT2008 series of tabular annunciators has 16 zones, and the Model FT2009 series uses 96 LEDs for 32 zones.

Up to two(2) light-emitting diodes (LEDs) can be used per zone. Tabular annunciators provide outputs for system and zone status, and are orderable in either black or red.

Remote Peripheral Module

The Remote Peripheral Module (Model FCA2018-U1) provides a means of connecting a Desigo FACP to a parallel printer (Model PAL-1) for creating hard copies of system-status and configuration reports.

Model FCA2018-U1 is a supervised, intelligent module that has built-intransient protection and plain-decimal addressing.

Model FCA2018-U1 is remotely connected to the Model FCA2016-U1 RS-485 communication bus from any Desigo Fire Safety system enclosure. Model FCA2018-U1 uses 'Class B' (Style 4) or 'Class A' (Style 6) wiring, and provides two (2) RS-232 serial ports and a one (1) parallel port, thus connecting to Model PAL-1.

LED Annunciator Driver

The Model FT2007-U1 LED Annunciator Driver provides custom graphic annunciators on addressable Cerberus PRO FACP's. This optional system module provides 96 highly programmable outputs to drive LED indicators. There are 16 inputs to accommodate user-system commands: *Silence, Unsilence, Reset, Acknowledge* and *Lamp Test*.

Model FT2007-U1 is supervised via aRS-485 interface. A maximum eight (8) modules are allowed on each RS-485 communication bus.

Graphics Input / Output Driver

The Graphics Input / Output (I/O) Driver (Model FT2003-U1) is a fire-system accessory on the RS-485 (Model FCA2016-U1) interface circuit. Model FT2003-U1, which serves as a combination standalone remote display / operating unit, provides the ability to build a graphic annunciator for the Desigo Fire Safety 252 / 504-point addressable FACP's.

Model FT2003-U1, which comes without an enclosure or display panel, consists of an indicator printed circuit board (PCB) and a driver PCB that are screwed together.

Each I/O driver has 32 outputs to drive highly programmable LEDs, and also contains 16 inputs to accommodate user-defined system commands, such as: *Acknowledge; Silence or Reset*.

NAC Expansion Module

The NAC expansion module (Model FCI2011-U1) provides either of the following additional NACs to a Cerberus PRO 252 / 504-point FACP:

- one (1) 'Class A', or
- two (2) 'Class B' NACs

Each NAC is rated at 3 Amps. Each NAC expansion module is monitored for open-line and short-circuit conditions.

Temperature and Humidity Range

Models FC922 and FC924 are UL 86410th Edition and ULC-S527 Listed for indoor dry locations within a temperature range of 120+/- 3°F (2°C) to 32+/- 3°F (0+/- 2°C) and a relative humidity of 93+/- 2% at a temperature of 90+/- 3°F (32+/- 2°C).

Details for Ordering

MODEL OR TYPE	PART NUMBER	PRODUCT
FCI2020-U1	S54400-A57-A1	Leased-Line / City -Tie Module
FCM2018-U3	S54400-C40-A2	Operating Interface Unit
FP2011-U1	500-450222	170-Watt Power Supply
FP2012-U1	S54400-Z60-A1	300-Watt Power Supply
FT2007-U1	S54400-A142-A1	LED Annunciator Driver
FT2008-U1	S54400-A143-A1	16-Zone Tabular Annunciator, Black
FT2008-R1	S54400-A144-A1	16-Zone Tabular Annunciator, Red
FT2009-U1	S54400-A145-A1	32-Zone Tabular Annunciator, Black
FT2009-R1	S54400-A146-A1	32-Zone Tabular Annunciator, Red
FT2014-U3	S54400-B80-A1	Remote Display Terminal, Black
FT2014-R3	S54400-B73-A1	Remote Display Terminal, Red
FT2015-U3	S54400-B88-A1	Remote Display Terminal, Black
FT2015-R3	S54400-B16-A1	Remote Display Terminal, Red
FTI2001-U1	S54400-A58-A1	Fire Terminal Board
FCA2015-U1	S54400-A63-A1	Digital Alarm Communication Transmitter
FN2001-U1	S54400-A60-A1	C-WEB Network Module
FCA2016-U1	S54400-A39-A1	RS-485 Interface
FCA2018-U1	S54400-A65-A1	Remote Peripheral Module
FCA2032-U1	S54400-B145-A1	Battery Disconnect Module
FCA2033-U1	S54400-P154-A1	License Key (S1) for remote access remote view remote operation
FCA2034-U1	S54400-P155-A1	License Key (S2) for BACnet output (monitoring only)
FCA2035-U1	S54400-P156-A1	License Key (S3) for remote access remote view remote operation BACnet output
FCI2011-U1	S54400-A54-A1	NAC Expansion Module
FCI2016-U1	S54400-A55-A1	252-Pt. Periphery Board
FCI2017-U1	S54400-A56-A1	504-Pt. Periphery Board
XC12001-U1	S54400-A69-A1	Releasing Module
FCM2019-U3	S54400-C41-A2	Operating Interface Unit [with LED]
FCM2022-U3	S54400-C44-A2	Blank Option Module
FCM2023-U3	S54400-C45-A2	LED Option Module [Red / Yellow bi-color LED; one (1) Yellow LED]
FCM2034-U3	S54400-C138-A1	LED Option Module: [Red / Yellow bi-color LED; one (1) Yellow LED]

Details for Ordering (cont.)

MODEL OR TYPE	PART NUMBER	PRODUCT
FN2006-U1	S54400-A61-A1	Single-Mode Fiber-Optic Module
FN2007-U1	S54400-A62-A1	Multi-Mode Fiber-Optic Module
FHB2001-U1	S54400-B47-A1	One-Height-Unit Back Box, Black
FHB2001-R1	S54400-B47-A2	One-Height-Unit Back Box, Red
FHB2002-U1	S54400-B48-A1	Two-Height-Unit Back Box, Black
FHB2002-R1	S54400-B48-A2	Two-Height-Unit Back Box, Red
FHD2001-U3	S54400-B45-A1	One-Height-Unit Outer Door, Black
FHD2001-R3	S54400-B40-A1	One-Height-Unit Outer Door, Red
FHD2002-U3	S54400-B32-A1	Two-Height-Unit Outer Door [with one (1) window], Black
FHD2002-R3	S54400-C53-A1	Two-Height-Unit Outer Door [with one (1) window], Red
FHD2003-U3	S54400-C42-A1	Two-Height-Unit Outer Door [with two (2) windows], Black
FHD2003-R3	S54400-B46-A1	Two-Height-Unit Outer Door [with two (2) windows], Red
FHD2004-U1	S54400-B52-A1	Inner door, Black
FHD2005-U1	S54400-B53-A1	Inner door, Solid Black
FHD2006-U1	S54400-C46-A1	Clear-lens window
FHD2012-U1	S54400-C135-A1	Optional inner door [for housing a Model FT201-series display terminal], Black
FHA2056-U1	S54400-B18-A1	Cerberus PRO Hardware Migration Kit, Black
FHA2056-R1	S54400-B19-A1	Cerberus PRO Hardware Migration Kit, Red
FHAMIQKIT-04	S54400-C24-A1	MXL-IQ Mechanical Migration Kit, Black
FHAMIQKIT-05	S54400-C25-A1	MXL-IQ Mechanical Migration Kit, Red
FHAMIQKIT-03	S54400-K1-A1	One (1) PMI cable & One (1) Expansion Cable
FHAMIQKIT-01	S54400-A66-A1	One (1) FCL2004 Module with PMI Cable
FHAMIQKIT-02	S54400-A67-A1	One (1) FCL2004 Module with Expansion Cable
FCL-MXLPLATE	S54400-B153-A1	Mounting Bracket for FCL2004 (2HU/USCG)
FH2072-UA	S54433-A5- A1	Universal Battery Cabinet
FTH2073-UA	S54433-A6- A1	Universal Annunciator Cabinet
FH2072-UA	S54433-A5- A1	Universal Battery Cabinet
FTH2073-UA	S54433-A6- A1	Universal Annunciator Cabinet

Electronics Package

MODEL OR TYPE	PART NUMBER	PRODUCT
FC922-US	S54400-C14-A1	252-Point Fire System with 170 Watt Power Supply and standard operator interfaces.
		Includes: <ul style="list-style-type: none"> ▪ FP2011-U1 (1 Qty.) ▪ FCI2016-U1 (1 Qty.) ▪ FCM2018-U3 (1 Qty.)
FC924-US	S54400-C15-A1	504-Point Fire System with 170 Watt Power Supply and standard operator interfaces.
		Includes: <ul style="list-style-type: none"> ▪ FP2011-U1 (1 Qty.) ▪ FCI2017-U1 (1 Qty.) ▪ FCM2018-U3 (1 Qty.)
FC922-UE	S54400-C16-A1	252-Point Fire System with 170 Watt Power Supply and standard operator interfaces. (with 24-zone LEDs)
		Includes: <ul style="list-style-type: none"> ▪ FP2011-U1 (1 Qty.) ▪ FCI2016-U1 (1 Qty.) ▪ FCM2019-U3 (1 Qty.)
FC924-UE	S54400-C17-A1	504-Point Fire System with 170 Watt Power Supply and standard operator interfaces. (with 24-zone LEDs)
		Includes: <ul style="list-style-type: none"> ▪ FP2011-U1 (1 Qty.) ▪ FCI2017-U1 (1 Qty.) ▪ FCM2019-U3 (1 Qty.)
FT924-US	S54400-C18-A1	Network Terminal w/ standard operator interface
		Includes: <ul style="list-style-type: none"> ▪ FT12001-U1 (1 Qty.) ▪ FCM2018-U3 (1 Qty.)
FT924-UE	S54400-C19-A1	Network Terminal w/ standard operator interface (with 24-zone LEDs)
		Includes: <ul style="list-style-type: none"> ▪ FT12001-U1 (1 Qty.) ▪ FCM2019-U3 (1 Qty.)
FC922-UT	S54400-C20-A1	252-Point Fire System with 300 Watt Power Supply and standard operator interfaces
		Includes: <ul style="list-style-type: none"> ▪ FP2012-U1 (1 Qty.) ▪ FCI2016-U1 (1 Qty.) ▪ FCM2018-U3 (1 Qty.)
FC924-UT	S54400-C21-A1	504-Point Fire System with 300 Watt Power Supply and standard operator interfaces
		Includes: <ul style="list-style-type: none"> ▪ FP2012-U1 (1 Qty.) ▪ FCI2017-U1 (1 Qty.) ▪ FCM2018-U3 (1 Qty.)

Electronics Package (Cont.)

MODEL OR TYPE	PART NUMBER	PRODUCT
FC922-UF	S54400-C22-A1	252-Point Fire System with 300 Watt Power Supply and standard operator interfaces(with 24-zone LEDs)
		Includes: <ul style="list-style-type: none"> ▪ FP2012-U1 (1 Qty.) ▪ FCI2016-U1 (1 Qty.) ▪ FCM2019-U3 (1 Qty.)
FC924-UF	S54400-C23-A1	504-Point Fire System with 300 Watt Power Supply and standard operator interfaces(with 24-zone LEDs)
		Includes: <ul style="list-style-type: none"> ▪ FP2012-U1 (1 Qty.) ▪ FCI2017-U1 (1 Qty.) ▪ FCM2019-U3 (1 Qty.)
Canadian-Specific Applications:		
FCM2035-U3	S54400-C140-A1	Enhanced Operating Unit (with LEDs)

Note: Refer to Data Sheet# 9800 for **Canadian-Specific** Electronics Package.

Related Documentation

Product	Datasheet Number
Cerberus PRO Operating Interface Units	9801
Cerberus PRO System Periphery Boards	9802
Cerberus PRO Fire Terminal and Equipment	9803
Cerberus PRO Digital Alarm Communicator Transmitter (DACT)	9804
C-WEB Network Module	9805
170-Watt and 300-Watt Power Supplies	9806
Cerberus PRO Fire-Alarm Enclosures and Equipment	9807
NAC Expansion Module	9808
Releasing Module	9809
Leased-Line / City-Tie Module	9810
Cerberus PRO Remote Peripheral Module	9811
Cerberus PRO Remote Display Terminals	9812
Single / Multi-Mode Fiber-Optic Modules	9814
LED / Blank Option Modules	9816
Battery Disconnect Module	9819
S-series license keys	9820
Cerberus PRO Marine Fire and Detection Equipment	9822
Cerberus PRO LED Annunciator Driver	9824
Cerberus PRO 16 & 32 -Zone Tabular Annunciators	9825
Cerberus PRO Migration Hardware Kit	9826

NOTICE – The information contained in this data-sheet document is intended only as a summary, and is subject to change without notice. The product(s) described here has/have a specific instruction sheet(s) that cover various technical, limitation and liability information.

Copies of install-type, instruction sheets – as well as the *General Product Warning and Limitations* document, which also contains important data, are provided with the product, and are available from the Manufacturer.

Data contained in the aforesaid type of documentation should be consulted with a fire-safety professional before specifying or using the product.

Any further questions or assistance concerning particular problems that might arise, relative to the proper functioning of the equipment, please contact the Manufacturer.

SIEMENS

Cerberus® PRO

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'08 Series Notification Appliances

ZH & ZR – Strobes, Horns, & Horn / Strobes

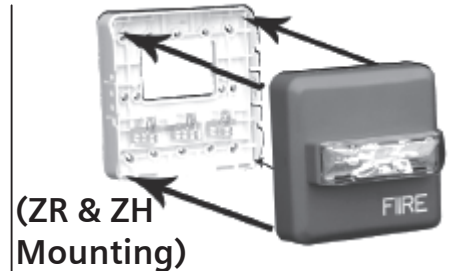
Application: Indoor



ZH Series



ZR Series



(ZR & ZH Mounting)

Product Overview

- Strobes can be synchronized using the Siemens DSC sync modules, FS-250 panel, XLS panel, or PAD-3 power supply with built-in sync protocol
- Selectable Continuous Horn or Temporal (Code-3) Tones with 90 or 95 dBA selectable setting (ZH)
- Ceiling-mount models feature field-selectable Candela settings of 15/30/75/95cd and 115/177cd
- Wall-mount models feature field-selectable Candela settings of 15/30/75/110cd and 135/185cd
- Base plate is protected by a disposable cover, and the appliances can quickly snap onto the base after the walls are painted
- Strobes produce 1 flash per second
- "Special Applications" listed with Siemens panels
- EZ Mount Universal Mounting Plate (ZBB) – uses single plate for ceiling and wall mount installations
- EZ Mount design – with separate base plate – provides ability to pre-wire the base and test the circuit wiring before the walls are covered
- UL Listed & ULC Listed;
FM, CSFM & NYMEA Approved
- ADA / NFPA compliant

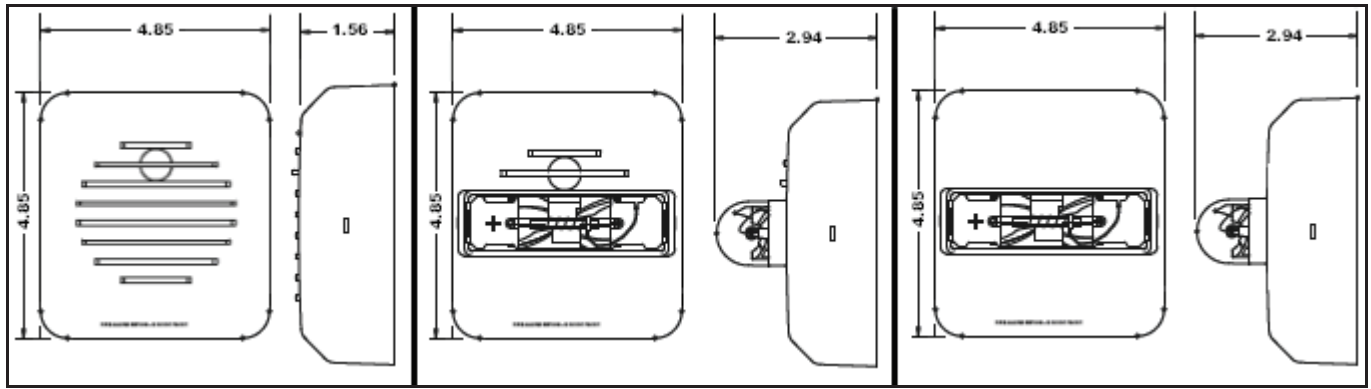
Specifications

- **General**
 - Audible/Visual notification appliances shall be listed for indoor use only
 - Appliances shall be listed under UL Standard 1971 (Standard for Safety Signaling Devices for Hearing Impaired) and UL Standard 464 (Fire Protective Signaling)
 - Appliances shall use a universal back plate, which shall allow mounting to a single-gang, double-gang, 4-inch-square, 4"-octal, or a 3-1/2"-octal backbox
 - Two-wire appliance wiring shall be capable of directly connecting to the mounting back plate
 - Continuity check shall occur for entire NAC circuit prior to attaching any audible / visual-notification appliances
 - Dust cover shall fit and protect the mounting plate
 - Dust cover shall be easily removed when the appliance is installed over the back plate
 - Removal of an appliance shall result in a trouble condition by the Fire Alarm Control Panel (FACP)

Specifications – (continued)

- **Strobes**
 - Strobe appliances shall produce a minimum flash rate of 60 flashes per minute (1 flash per second) over the Regulated Input Voltage Range, and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens
 - Strobes shall be available with two or four field-selectable settings in one unit, and shall be rated – per UL 1971 – for up to:
 - 15/30/75/110cd for wall mounted
 - 135/185cd for wall mounted
 - 15/30/75/95cd for ceiling mounted
 - 115/177cd for ceiling mounted
 - Strobes shall operate over an extended temperature range of 32°F to 120°F (0°C to 49°C), and be listed for maximum humidity of 95% RH
 - Strobe inputs shall be polarized for compatibility with standard reverse-polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP)
- **Audibles and Audible / Strobe Combinations**
 - Horns and horn / strobes shall be listed for Indoor use under UL Standard 464
 - Horns shall be able to produce continuous synchronized output or a temporal code-3 synchronized output
 - Horns shall have at least 2 sound-level settings of 90 and 95 dBA
- **Synchronization Modules**
 - The strobe portion, when synchronization is required, shall be compatible with DSC sync modules, FS-250 panel, XLS panel, or PAD-3 power supply with built-in sync protocol
 - The strobes shall not drift out of synchronization at any time during operation
 - Audibles and strobes shall be able to synchronize on a 2-wire circuit with the capability to silence the audible, if required
 - Strobes shall revert to a non-synchronized flash-rate, if the sync module or Power Supply should fail to operate (i.e. – contacts remain closed)
 - All notification appliances shall be listed for Special Applications:
 - Strobes are designed to flash at 1-flash-per-second minimum over their “Regulated Input Voltage Range”
 - **Note:** NFPA-72 specifies a flash rate of 1-to-2 flashes per second, and ADA Guidelines specify a flash rate of 1-to-3 flashes per second
 - All candela ratings represent minimum-effective Strobe intensity, based on UL Standard 1971
 - Series ZH Strobe products are listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%)
 - Series ZH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only)

Mounting Diagram



(Shown In Inches)

Mounting Options

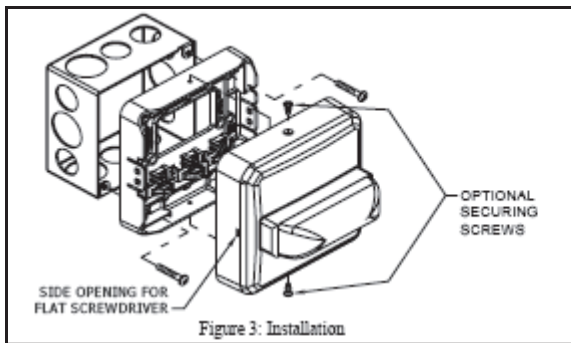


Figure 3: Installation

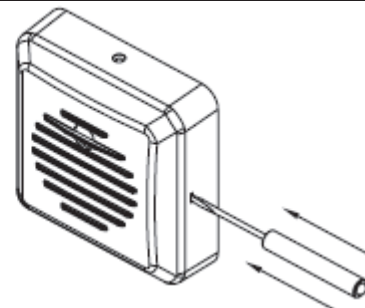


Figure 4: Removal (See step 8 below)

1. Install mounting plate as shown in figure 1 to a single-gang, double-gang, 4" square, 4" octagon, or a 3 1/2" octagon backbox with the provided pan head screws. To remove dust cover, place thumb and index finger on top edges of cover and pull off cover.
2. Connect field wiring per figures 2 and 3.
3. Address wires back into backbox.
4. Place dust cover over mounting plate to protect the terminals while performing wiring continuity check..
5. Remove dust cover before snapping or installing the appliance onto the mounting plate per fig 3.

6. Important: Device only has one mounting orientation. Match the top of the base to the top of the device.
7. If it is desired to further secure the device to the base, then two optional screws are provided. To install these screws punch out the screw holes located at the top and bottom of the device.
8. To remove the appliance, push a small flat-bladed screwdriver into the side opening. The screwdriver must clear the snap release opening by 1/4" to disengage the snap. Do not pry off housing with the screw driver. Apply pressure with screw driver, inserted in either side opening, as shown in Fig 4 to release the housing.

Technical Data

		ZH and ZH-MC Horn Reverberant dBA per UL464 [ZH-MC and ZH at 24V]		
		16.0V	24V	33.0V
Continuous Horn	High	83	87	90
	Low	77	81	83
Code 3 Horn or March Time*	High	79	82	86
	Low	72	76	79

*Available in sync mode only

In (Amps)	ZH Horn Current Draw	
	Horn Setting	16-33 Volts
DC	High*	0.044
	Low*	0.018
FWR	High*	0.075
	Low*	0.045

*Current Draw is the same for the Continuous Horn, Code 3 Horn and March Time Settings.

Technical Data – (continued)

UL Listed Models and Ratings					
Models*	Operating Voltage (Special Application) [Per UL 1971] (VDC/VRMS)	Voltage Range [Per ULC-S526-02] (VDC/VRMS)	Horn	Mounting	Strobe Candela (cd)
ZR-MC	16.0-33.0	20.0-31.0	—	Wall	15/30/75/110
ZR-HMC	16.0-33.0	20.0-31.0	—	Wall	135/185
ZR-MC-C	16.0-33.0	20.0-31.0	—	Ceiling	15/30/75/95
ZR-HMC-C	16.0-33.0	20.0-31.0	—	Ceiling	115/177
ZH-MC	16.0-33.0	20.0-31.0	X	Wall	15/30/75/110
ZH-HMC	16.0-33.0	20.0-31.0	X	Wall	135/185
ZH-MC-C	16.0-33.0	20.0-31.0	X	Ceiling	15/30/75/95
ZH-HMC-C	16.0-33.0	20.0-31.0	X	Ceiling	115/177
ZH	16.0-33.0	20.0-31.0	X	Wall or Ceiling	— —

*Available in red and white

UL Current Ratings (ZR Strobe Only)													
Maximum RMS Current (AMPS)													
		MC				HMC		MC-C				HMC-C	
		15cd	30cd	75cd	110cd	135cd	185cd	15cd	30cd	75cd	95cd	115cd	177cd
DC	16-33VDC	0.064	0.098	0.175	0.233	0.318	0.445	0.069	0.111	0.200	0.264	0.318	0.445
FWR	16-33VRMS	0.108	0.164	0.268	0.368	0.482	0.684	0.117	0.180	0.297	0.398	0.482	0.684

UL Current Ratings ZH Horn/Strobe														
Maximum RMS Current (AMPS)														
		Horn Setting	MC				HMC		MC-C				HMC-C	
			15cd	30cd	75cd	110cd	135cd	185cd	15cd	30cd	75cd	95cd	115cd	177cd
DC	16-33VDC	High*	0.078	0.113	0.195	0.259	0.371	0.506	0.087	0.131	0.222	0.292	0.371	0.506
		Low*	0.070	0.107	0.188	0.246	0.324	0.455	0.075	0.121	0.213	0.277	0.324	0.455
FWR	16-33VRMS	High*	0.141	0.200	0.302	0.406	0.521	0.722	0.149	0.216	0.331	0.436	0.521	0.722
		Low*	0.123	0.179	0.290	0.391	0.497	0.699	0.131	0.195	0.319	0.421	0.497	0.699

* Current Draw is the same for the Continuous Horn; Code 3 Horn and March Time Settings

Details for Ordering – (Including Mounting Options & Agency Approvals)

Agency Approvals

Model Number	Part Number	Description	Mounting Options*	UL	ULC	FM	CSFM
ZH-R	500-636159	Z Horn: Red	B,D,E,F	X	X	X	X
ZH-W	500-636160	Z Horn: White	B,D,E,F	X	X	X	X
ZH-MC-R	500-636161	Z Horn: Multi Candela (Wall), Red	B,D,E,F	X	X	X	X
ZH-MC-W	500-636162	Z Horn: Multi Candela (Wall), White	B,D,E,F	X	X	X	X
ZH-HMC-R	500-636163	Z Horn: Hi Multi Candela (Wall), Red	B,D,E,F	X	X	X	X
ZH-HMC-W	500-636164	Z Horn: Hi Multi Candela (Wall), White	B,D,E,F	X	X	X	X
ZH-MC-CR	500-636165	Z Horn: Multi Candela (Ceiling), Red	B,D,E,F	X	X	X	X
ZH-MC-CW	500-636166	Z Horn: Multi Candela (Ceiling), White	B,D,E,F	X	X	X	X
ZH-HMC-CR	500-636167	Z Horn: Hi Multi Candela (Ceiling), Red	B,D,E,F	X	X	X	X
ZH-HMC-CW	500-636168	Z Horn: Hi Multi Candela (Ceiling), White	B,D,E,F	X	X	X	X
ZR-MC-R	500-636169	Z Strobe: Multi Candela (Wall), Red	B,D,E,F	X	X	X	X
ZR-MC-W	500-636170	Z Strobe: Multi Candela (Wall), White	B,D,E,F	X	X	X	X
ZR-HMC-R	500-636171	Z Strobe: Hi Multi-Candela (Wall), Red	B,D,E,F	X	X	X	X
ZR-HMC-W	500-636172	Z Strobe: Hi Multi-Candela (Wall), White	B,D,E,F	X	X	X	X
ZR-MC-CR	500-636173	Z Strobe: Multi Candela (Ceiling), Red	B,D,E,F	X	X	X	X
ZR-MC-CW	500-636174	Z Strobe: Multi Candela (Ceiling), White	B,D,E,F	X	X	X	X
ZR-HMC-CR	500-636175	Z Strobe: Hi Multi Candela (Ceiling), Red	B,D,E,F	X	X	X	X
ZR-HMC-CW	500-636176	Z Strobe: Hi Multi Candela (Ceiling), White	B,D,E,F	X	X	X	X
ZBB-R	500-636193	Accessory – (Includes base, dust cover, mounting screws and installation sheet)					
ZBB-W	500-636194	Accessory – (Includes base, dust cover, mounting screws and installation sheet)					

X = listed / approved

* = Refer to catalog sheet #: 2585 for detailed mounting options

Notice: This marketing catalog sheet is not intended to be used for system design or installation purposes. For the most up-to-date information, refer to each product's installation instructions.

Cerberus[®] PRO Detectors and Peripherals

Photoelectric Smoke Detector [with *ISOtechnology*[™]]

Model OP921

Architect & Engineer Specifications

- UL 268 7th Edition Listed
- Built-in *ISOtechnology*[™]
- 252 Isolation devices per SLC
- Each detector is self-testing:
 - Self-monitored for sensitivity with UL Listed limits
 - complete diagnostics performed every 10 seconds
- Compatible with Model 8720 | DPU (device programmer / loop tester)
- Polarity insensitive via *SureWire*[™] technology
- Functions with Model DB-11-series mounting bases
- Tri-color detector-status light-emitting diode (LED) with 360 ° view
- Field-selectable application-sensitivity profiles
- Remote sensitivity-measurement capability
- Utilizes advanced, microprocessor-based signal processing
- Extended temperature-and-humidity operating range
- Automatic environment compensation
- Superior electromagnetic interference (EMI) and radio-frequency interference (RFI) immunity
- Restriction of Hazardous Substances (RoHS compliant)
- UL Listed | FM, CSFM Approved
 - UL 268: 'Open Area Smoke Detection'
 - UL 268A (Duct) - 'In-duct housing' use
 - UL 268A (Duct) - 'Direct-in-Duct' use
 - ULC-S529: 'System Smoke Detector'
 - ULC-S530: 'Heat Actuated Fire Detection'
 - FM 3230
 - CSFM | File: 7272-0067:0258

Product Overview

The Photoelectric Smoke Detector (Model OP921) uses state-of-the-art microcontroller circuitry and surface-mount technology for maximum reliability. Model OP921 incorporates an optical sensor using a light-scattering detection principle. The device utilizes advanced software algorithms to analyze the signals providing highly stable and accurate smoke detection.

Model OP921 is UL 268 7th edition listed incorporating advanced built-in *ISOtechnology*[™] - True Class-X SLC operation (use is optional) greatly improving system reliability and circuit integrity while providing advanced addressable fault finding.

Each detector fits into one (1) wall-or-ceiling footprint, and only occupies one (1) address on the signal-line circuit (SLC)

Model OP921 is a plug-in, two-wire, addressable photoelectric smoke detector whose value is increased with built-in *ISOtechnology* feature. Model OP921 is Underwriters' Laboratories Listed [UL268A Listed for direct in-air duct usage].

Each detector utilizes a dust-resistant photoelectric smoke chamber and microprocessor-based electronics with a low-profile plastic housing. Every Model OP921 fire detector is shipped with a protective dust cover.

Operation

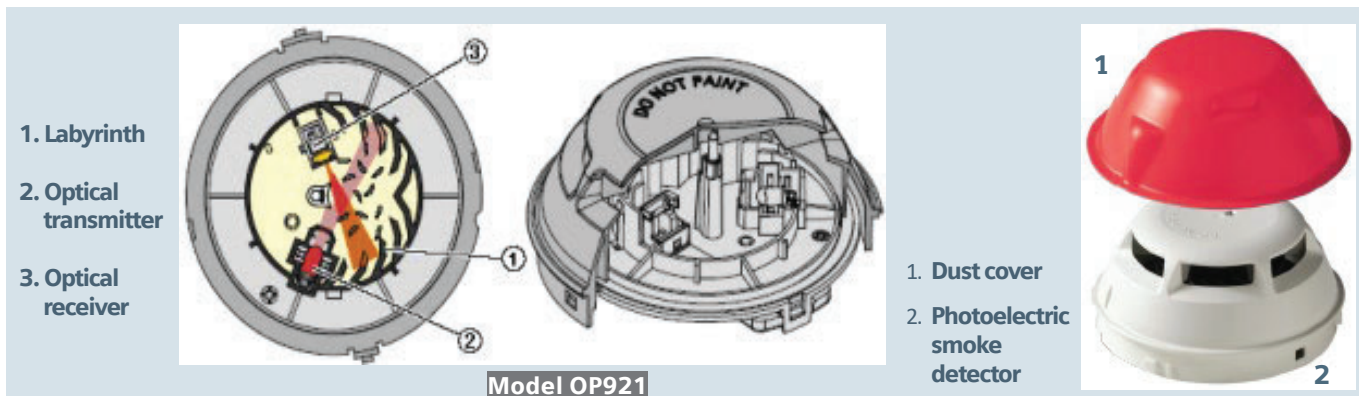
Model OP921 is a wide-spectrum, photoelectric smoke detector that incorporates an infrared light-emitting diode (IRLED), as well as a light-sensing photodiode. Under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered through the smoke chamber in a controlled pattern.

The smoke chamber is designed to manage light dissipation and extraneous reflections from dust particles or other non-smoke, airborne contaminants in such a way as to maintain stable, consistent detector operation. When smoke enters the detector chamber, light emitted from the IRLED is scattered by the smoke particles and is received by the photodiode (see: images on page 2).



Model OP921
Photoelectric Smoke Detector





Sensitivity Settings

Application Parameter Sets

Model OP921 provides (2) pre-programmed sensitivity parameter sets that can be selected by the Siemens fire-alarm control panel in order to match the expected application or environmental conditions:

- Standard
- Air-Duct

Standard: This application parameter set, which is ideal for normal office | hotel-lobby-type applications, is the default setting.

Air-Duct: This application parameter set is used when the detector is used a UL268A (DI) compliant, direct in-air duct application without a duct housing.

Model OP921 does not require a field sensitivity test. Model OP921 is UL Listed as a self-testing device and complies with NFPA 72 as a self-monitoring detector and control-panel arrangement. This parameter set is also used when Model OP921 is used in air-duct housings (Models FDBZ492 and FDBZ492-HR).

A quick visual inspection is sufficient to indicate the condition of Model OP921 at any time. If more detailed information is required, a printed report can be provided from the compatible FACP, indicating the status and settings assigned to each individual detector. When Model OP921 moves to 'Alarm' mode, the detector will flash **RED** and continue flashing until the system is reset at the FACP.

At that same time, any user-defined, system-alarm functions programmed into the system are activated.

Model OP921 contains a tri-color LED indicator, capable of flashing any one (1) of three (3) distinct colors: **GREEN** | **YELLOW** | **RED**.

During each flash interval, the microprocessor-based detector monitors the following scenarios:

- Smoke sensitivity is within the range indicated on the nameplate label
- Smoke in its sensing chamber
- Internal sensors and electronics are functional

Based on the results of the monitoring, the LED indicator flashes the following:

FLASH COLOR	CONDITION	FLASH INTERVAL [in seconds]
GREEN* :	Normal supervisory operation. Smoke sensitivity is within rated limits.	10
YELLOW :	Detector is in trouble and needs replacement.	4
RED :	'Alarm' condition	1
NO FLASH :	Detector is not powered.	—

* denotes LED can be turned OFF

Please follow the corresponding description of the panel used.

A quick visual inspection is sufficient to indicate the condition of the detector at any time. If more detailed information is required, a printed report can be provided from the respective Cerberus PRO Modular | FireFinder XLS/IV | FC/FV9-series FACP that indicates the status and settings assigned to each individual detector.

Installation

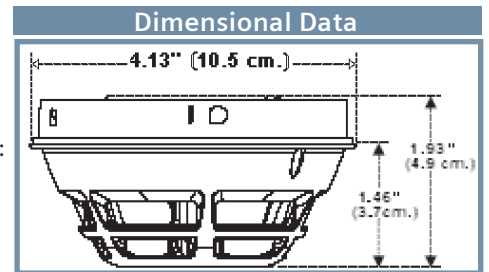
All Model OP921 intelligent, addressable detectors use a surface-mounting base (Model DB-11 or DB-11E), which mounts on a 4-inch (10.2 cm.) octagonal, square or single-gang electrical back box. The base utilizes screw-clamp contacts for electrical connections and self-wiping contacts for increased reliability.

The Model DB-11 detector base can be used with the optional Siemens Model LK-11 detector locking kit, which contains 50 detector locks and an installation tool to prevent unauthorized removal of the detector head. Model DB-11 has aesthetically conducive plugs to cover the outer mounting-screw holes.

Model OP921 may be installed on the same initiating circuit with the Siemens Model 'H'-series detectors [when used with Cerberus PRO Modular | FireFinder XLS/IV | FC/FV9-series FACP] –

Each detector, which is shipped with a protective dust cover, consists of the following:

- Built-in **ISOtechnology** for True-Class-X SLC performance
- Dust-resistant photoelectric chamber
- Microprocessor-based electronics with a low-profile plastic housing



All Model OP921 intelligent, addressable detectors are approved for operation with the Underwriters' Laboratories-specified temperature range of 32° to 100°F (0° to 38°C). (See: installation manual P/N – A6V10323928 for further details)

Application Data

- XTRI series interface modules
- HTRI series interface modules
- HMS & XMS series manual stations
- HFP-11, HFPT-11 detection devices
- HCP output-control module
- HZM conventional zone module

Installation of Model OP921 smoke detectors require a two-wire circuit. In many retrofit cases, existing wiring may be used. 'T-tapping' is permitted only for Style 4 (Class B) wiring. Model OP921 is polarity insensitive, which can greatly reduce installation and debugging times. When operating in NFPA 72 Class-X applications SLC polarity must be maintained to support up to 252 isolation ready devices per loop. When used in mixed mode a maximum of 30 non-isolated devices between isolation devices (wired in polarity-insensitive mode). See control panel install document for further details.

Model OP921 detectors can be applied within the maximum 30-foot center spacing (900 sq. ft. areas) as referenced in NFPA 72. This application guideline is based on ideal conditions – specifically, smooth ceiling surfaces, minimal air movement, and no physical obstructions between potential fire sources and the actual detector. Do not mount detectors in close proximity to ventilation or heating and air conditioning outlets. Exposed joists or beamed ceilings may also affect safe spacing limitations for detectors.

Should questions arise regarding detector placement, observe NFPA 72 guidelines. Good fire-protection-system engineering and common sense dictate how and when fire detectors are installed and used. Contact your local Siemens – Fire Safety distributor or sales office whenever you need assistance applying Model OP921 in unusual applications. Be sure to follow NFPA guidelines and UL Listed / ULC Listed installation instructions – included with every Siemens – Fire Safety detector – and local codes as for all fire protection equipment.

Field-Device Programmer / Test Unit

Model OP921 is compatible with the Siemens field-device programmer / test unit (Model 8720 | DPU), which is a compact, portable menu-driven accessory for electronically programming and testing these addressable detectors promptly and reliably. For instance, the field technician selects the accessory's program mode, and enters the desired address.

Model DPU eliminates the need for cumbersome, unreliable mechanical programming methods (e.g. – dials and rotary switches), and reduces installation and service costs by electronically programming and testing the detector prior to installation. When set in 'test' mode, Model DPU will perform a series of diagnostic tests without altering the address or other stored data, allowing technicians to determine if the detector is operating properly.

Each field-device programmer / test unit operates on AC power or rechargeable batteries, providing flexibility and convenience in the programming / testing of fire-safety equipment from practically any location. Additionally, with the use of a Model DPU unit, there is no longer a cause for concern with any vibration, corrosion and other deteriorating conditions that can accompany the vitality of electro-mechanical-addressing mechanisms.

Each detector fits into one (1) wall-or-ceiling footprint, and only occupies one (1) address on the signal-line circuit (SLC).

Technical Data	
OPERATING TEMPERATURE:	+32° – +100°F (0° – +38°C)
RELATIVE HUMIDITY:	0 – 95% (non-condensing)
AIR PRESSURE:	No effect
AIR VELOCITY:	0 – 4,000 feet-per-minute (fpm) (0 – 20 meters-per-second)
INPUT VOLTAGE RANGE:	16VDC – 30VDC
'ALARM' CURRENT, MAX.:	410µA
'STANDBY' CURRENT, MAX.:	250µA
MAXIMUM SPACING:	30-ft. centers (900 sq. ft.), per NFPA 72
DETECTOR WEIGHT:	0.317 Lbs. (0.144 kg.)
MECHANICAL PROTECTION GUARD:	UL and ULC Listed (with STI Guard Model STI-9604)
SENSITIVITY RANGE:	1.41 - 3.76 % ft obs. (Nominal 2.0% / ft. obs.)

Panel Compatibilities		
MODEL OR TYPE	DATA SHEET	PANEL
XLS	6300	FireFinder® (fire)
XLSV	6340	FireFinder (fire w/ voice)
Cerberus PRO Modular	8300	System Overview
FC901	9813	Cerberus PRO 50-point addressable
FC922	9815	Cerberus PRO 252-pt. addressable (fire)
FC924		Cerberus PRO 504-pt. addressable (fire)
FV922	9821	Cerberus PRO 252-point addressable (fire w/ Intelligent Voice Communication [IVC])
FV924		504-pt. addressable (fire w/ Intelligent Voice Communication [IVC])

Details for Ordering		
MODEL OR TYPE	PART NUMBER	PRODUCT
OP921	S54320-F4-A2	Photoelectric Smoke Detector
Compatible Devices:		
MODEL OR TYPE	PART NUMBER	PRODUCT
ABHW-4B	S54320-F13-A1	Buzzer Version Audible Base (standard 3,000 Hz tone)
ABHW-4BZ	S54320-F13-A2	Audible Base
ABHW-4S	S54320-F14-A1	Sleeping Room Version, 520 Hz Low Frequency Audible Base
ABHW-4SZ	S54320-F14-A2	Audible Base
DB-11	500-094151	Detector Mounting Base
DB-11E	500-094151E	Detector Base, small
DB2-HR	S54370-F12-A1	Detector Mounting Base with Relay
RL-HC	500-033230	Remote Alarm Indicator: 4" (10.2 cm) octagon-box mount, red
RL-HW	500-033310	Remote Alarm Indicator: single-gang box mount, red
FDBZ492	S54319-B22-A1	Addressable Air-Duct Housing
FDBZ492-HR	S54319-B23-A1	Addressable Air-Duct Detector with Relay
LK-11	500-695350	Base Locking Kit
See: www.STI-USA.com for further details on ordering Model STI-9604		
In Canada order:		
MODEL OR TYPE	PART NUMBER	PRODUCT
DB-11C	500-095687	Detector Mounting Base, ULC Listed

NOTICE – The information contained in this data-sheet document is intended only as a summary, and is subject to change without notice. The product(s) described here has/have a specific instruction sheet(s) that cover various technical, limitation and liability information.

Copies of install-type, instruction sheets – as well as the *General Product Warning and Limitations* document, which also contains important data, are provided with the product, and are available from the Manufacturer.

Data contained in the aforesaid type of documentation should be consulted with a fire-safety professional before specifying or using the product.

Any further questions or assistance concerning particular problems that might arise, relative to the proper functioning of the equipment, please contact the Manufacturer.

SIEMENS

Cerberus® PRO

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