



AVENGER

FIRE ALARM PRODUCT CATALOG
2022



Avenger Systems is an independently owned fire detection and suppression company based in the United States and operating in most regions around the world. Avenger Systems is committed to providing our customers with the highest quality, cost-effective products, solutions and excellent customer service, while focusing on our customers, strategic partners, employees and state of the art technologies.

Avenger Systems is a progressive and reliable organization, providing superior fire detection and suppression solutions with outstanding customer support.

Our Vision: Avenger Systems was founded with the passion, vision and determination to provide our customers with superior-quality, cost-effective fire detection and suppression system solutions with exceptional customer support that exceeds most company's expectations. Our foundation is truly our people.

Our Culture: Avenger Systems corporate culture fosters creativity, hard work, collaboration and success.

Our Technology: Building on our past success in the fire and suppression markets, Avenger Systems utilizes state-of-the-art technologies to enable our customers to compete in all type of projects from small to the very large with software that is simple to use and yet powerful in its abilities.



TABLE OF CONTENTS

ANALOG ADDRESSABLE SYSTEM

OASIS CONTROL PANELS	8
Oasis Network Vision Annunciator	12
8 CHANNEL RELAY PANEL MODULE.....	13
8 CHANNEL CONVENTIONAL ZONE MODULE.....	13
4 CHANNEL NAC PANEL MODULE	14
MEDIA GATEWAY PANEL MODULE	14
16 CHANNEL I/O INTERFACE	15
SUPREME CONTROL PANELS	16
SUPREME-RS CONTROL PANELS.....	18
E-NET COMMUNICATION CARD.....	20
L@TI-VIEW	21
EVIEW SERIAL ANNUNCIATOR.....	22
EMATRIX MIMIC ANNUNCIATORS.....	24
ADDRESSABLE PHOTOELECTRIC SMOKE SENSOR	26
ADDRESSABLE FIXED TEMPERATURE / RATE OF RISE HEAT DETECTOR	28
ADDRESSABLE MULTI-CRITERIA SENSOR - SMOKE / HEAT	30
ADDRESSABLE MULTI-CRITERIA SENSOR - SMOKE / HEAT / CO / COHB	32
ADDRESSABLE DUCT SENSORS.....	34
ADDRESSABLE SENSOR BASES	36
ADDRESSABLE SENSOR BASES WITH BUILT-IN ISOLATORS.....	37
ADDRESSABLE LOW FREQUENCY SOUNDER BASE.....	38
ADDRESSABLE SOUNDER BASE	39
ADDRESSABLE FAST RESPONSE MONITORING MODULE WITH PIGTAILS	40
ADDRESSABLE FAST RESPONSE MINIATURE MONITORING MODULE.....	41
ADDRESSABLE FAST RESPONSE MONITORING MODULES (CLASS A/B)	42
ADDRESSABLE DUAL CHANNEL FAST RESPONSE MONITORING MODULES	43

ADDRESSABLE CZM - CONVENTIONAL ZONE INPUT MODULE	44
ADDRESSABLE DUAL RELAY MODULES.....	45
ADDRESSABLE SUPERVISED OUTPUT MODULES.....	46
SHORT CIRCUIT ISOLATOR MODULE	47
HANDHELD PROGRAMMER	48

RELEASING SYSTEMS

SUPREME XT RELEASING CONTROL PANEL.....	52
XT+ Multi-Area Addressable Releasing Control Units	54
RELEASING SYSTEM PERIPHERALS	56

CONVENTIONAL SYSTEM

SUPREME CP CONVENTIONAL FIRE CONTROL PANELS	60
SUPREME CP ANNUNCIATORS	62
CONVENTIONAL MANUAL PULL STATIONS.....	63
CONVENTIONAL PHOTOELECTRIC SMOKE DETECTORS	64
CONVENTIONAL HEAT DETECTORS	66
CONVENTIONAL SENSOR BASES	67

NOTIFICATION APPLIANCES

WALL MOUNT EVACUATION HORN, STROBE, HORN/STROBE	70
CEILING MOUNT EVACUATION STROBE, HORN/STROBE.....	72
SYNCHRONIZATION CONTROL MODULE.....	74
FIRE ALARM BELLS	75

OASIS

2-16 LOOP ANALOG ADDRESSABLE FIRE ALARM CONTROL PANELS



Standard Features

- UL Listed (Tenth Edition)
- Supports Hochiki Protocol
- 2 to 8 loop or 2 to 16 loop versions
- 400mA loop current
- 4 programmable NACs Class B or 2 Class A with internal synchronization
- 5.25 A or 10.25 A power supply options
- 3 programmable inputs and 5 programmable relay outputs
- 7 inch, full-color resistive touch screen with intuitive user interface
- Up to 24 programmable soft function keys
- Up to 64 user login accounts
- Hard-wired fire and trouble routing inputs and outputs Modular and expandable electronics
- 400 sub-address points per loop (800 per loop module)
- Option to invert inputs and outputs
- 5000 programmable cause and effects; over 50,000 inputs and outputs
- Can be networked with programmable functionality
- Programming via USB port to PC or memory stick

Product Overview

The all new Oasis product range of fire alarm control equipment combines the very latest hardware and software to produce a control and indication system, which is powerful and sophisticated, yet simple to use and understand. The flexibility of the Oasis platform is such that it can be re-configured to realize many other control and indication applications, with direct integration into intelligent buildings.

Moving away from the simple, price driven competitive model used by most manufacturers today, the Oasis concept is designed to add value to System Designers, Integrators, Service Providers, and end users. Developed from the "ground up" and using some of the most advanced technology available, Oasis is designed as one of the most powerful, intelligent, and technically robust fire alarm products available. Not only do the products and services offered under the Oasis brand provide solutions to the most technically challenging applications in life safety, Oasis will deliver added value, market advantage, and a competitive edge to your business.





Optional Panel Peripherals

- **LatiView Graphics**
L@tiView enables the creation of a 2D map of any site or building to monitor fire safety and detection, and automatically switches to an area where a fire device has been activated to allow immediate viewing and investigation of an event.
- **Dual Loop Panel Module (S758)**
The Dual Loop Panel Module monitors loop device status and provides status to the panel processor. It holds device configurations and operates in a standalone manner when catastrophic failures occur.
- **16 Channel I/O Interface Card (S560)**
The 16 Channel I/O Interface enhances the versatility of the alarm system by providing additional input and output capabilities to the Oasis Fire Alarm Control Panel. Inputs or outputs can be selected for up to 16 individual channels, and are configured in the same way as devices connected to addressable loops of the panel. The 16 Channel I/O Interface can be configured to contribute or act upon cause and effect logic.
- **Media Gateway™ Panel Module (S788)**
The Media Gateway Panel Module provides connectivity to monitoring centers using IP (Sur-Gard), or dial-up connectivity. The Media Gateway may also be used to meet integration application requirements.
- **8 Channel Relay Panel Module (S791)**
The 8 Channel Relay Panel Module has 8 voltage-free changeover relay contacts, each of which can be individually programmed. All outputs are configurable in the same way as devices connected to the loops and all may be acted upon by cause and effect logic. These boards are typically used in applications which require more than the five standard relay outputs, such as signaling to other systems or plant control.
- **Network Module (S723)**
The Network Module provides enhanced high-speed communication for networking fire control panels. The network provided by this module can support combinations of Fire Alarm Control Panels and Vision units. Fire Alarm Control Panels can receive events from other panels in the network. The Class X networking used in conjunction with the Network Module provides tolerance against open and short circuit trouble conditions.
- **Printer (S768)**
The Printer is an optional feature for printing fire system events as they occur. The printer is located on the fascia, below the Zone LEDs (if present). It is a thermal printer and never requires replacement ink. Printing is performed on heat-sensitive paper rolls. A trouble message is reported when the paper runs out. The printer includes a front-loading feature for replacing paper rolls.
- **Zone LED Module (S771)**
The Zone LED module contains 48 LEDs and is connected to the LCD Main Processor Board of the Oasis Fire Alarm Control Panel. A maximum of three Zone LED modules can be connected to provide the fascia with 144 Zone LED indicators.
- **4 Channel NAC Panel Module (S793)**
FUTURE ENHANCEMENT
Additional NAC output capability can be added to by using 4 Channel NAC Modules. These boards have 4 supervised NAC outputs, each of which can be individually programmed. The circuits can be configured for class A or B operation. These circuits can be configured to act upon cause and effect logic.
- **8 Channel Conventional Zone Panel Module (S792)**
FUTURE ENHANCEMENT
The 8 Channel Conventional Zone Panel Module has 8 supervised detection circuits (Class B). Each circuit can support up to 20 conventional detectors and approved devices. Individual circuits may be configured for trigger resistor or short circuit activation. These circuits may be used for any of the standard input actions and can be configured to contribute to cause and effect logic. Each pair of circuits (e.g., 1 and 2, 3 and 4, etc.) can be joined to form a single Class A configuration.
- **16 Channel I/O Interface Panel Module (S772)**
FUTURE ENHANCEMENT
The 16 Channel I/O Interface Panel Module will provide the same functionality as the 16 Channel I/O Interface Card, with the convenience of a plug-in module.



Technical Specifications

2 TO 8 LOOP (4 SLOT) ENCLOSURE

Size	Standard Cabinet: 420mm (W) x 590mm (H) x 153mm (D), or 16.5in (W) x 23.2in (H) x 6in (D) Deep Cabinet: 420mm (W) x 590mm (H) x 203mm (D), or 16.5in (W) x 23.2in (H) x 8in (D)
Construction	Mild sheet steel enclosure, 1.5 mm
Cable Entry	Standard Cabinet: 28 knockouts top, 19 knockouts back, 1 knockout each side, 2 knockouts bottom Deep: 38 knockouts top, 19 knockouts back, 1 knockout each side, 2 knockouts bottom
Optional Semi-Flush Mounting Kit	Semi-Flush Mounting Collar Kit KM5FCRD - Red KM5FCGY - Gray KM5FCBS - Black
Battery Capacity	Standard Cabinet: Up to 28 Ah (Power Sonic PS-12280) Deep Cabinet: Up to 40 Ah (Power Sonic PS-12400)

2 TO 16 LOOP (8 SLOT) ENCLOSURE

Size	Standard Cabinet: 540mm (W) x 720mm (H) x 160mm (D), or 21.3in (W) x 28.3in (H) x 6.3in (D) Deep Cabinet: 540mm (W) x 720mm (H) x 212mm (D), or 21.3in (W) x 28.3in (H) x 8.3in (D)
Construction	Mild sheet steel enclosure, 1.5 mm
Cable Entry	Standard Cabinet: 38 knockouts top, 25 knockouts back, 2 knockouts each side, 2 knockouts bottom Deep Cabinet: 50 knockouts top, 25 knockouts back, 2 knockouts each side, 2 knockouts bottom
Battery Capacity	Standard Cabinet: Up to 28 Ah (Power Sonic PS-12280) Deep Cabinet: Up to 40 Ah (Power Sonic PS-12400)

ALL MODELS

Finish	Epoxy powder coated
Enclosure Color	^{2/21} Red (RAL3002) ^{2/21} Gray (BS 00 A 05) ^{2/21} Black (RAL9005)
Power Supply Voltage	115 V AC or 230 V AC
Power supply rating at 24V DC	5.25 A (charges up to 60 Ah) 10.25 A (charges up to 100 Ah)
Display	Full-color 800 x 480 LCD with resistive touch screen and automatic backlight dimming
Software Zones	2000
Software Groups	5000
Cause and Effects	5000
Event Log	10,000 events, 1 second resolution. Filterable and printable
Detection Loops	2 to 16 added 2 at a time (S758 dual loop cards)
Detection Loop Current	400 mA each
AUX 24V Output	2 - each rated at 900 mA
NACs	4 - each rated at 2.5 A Class B or 2 Class A.
Programmable Relay Outputs	5 - 30 V DC 1 Amp
Programmable Inputs	3 - designed to be activated by voltage-free contacts
Network Connection	Optional network card provides communication for networking 127 fire control panels
NAC Synchronization	Internal Support of System Sensor, Wheelock, Gentex, and Amseco protocols
Printer (OPTIONAL)	40 column, front-loading thermal
Zone LED Indicators (OPTIONAL)	Up to 3 banks of 48 (144) as standard
Operating Temperature	23°F to 120°F (-5°C to 49°C)
Operating Humidity	to 95% (non condensing)

Panel Model Numbers

OA 1 0 3 H# -14 (abcd)

If no peripheral cards are ordered,
this portion of the model number
should be omitted.

- OPTIONAL PERIPHERAL CARDS
- PRINTER, ZONE LEDs, & APERTURE
- CABINET COLOR
- LOOP MODULES & COMMUNICATION MODULES
- POWER SUPPLY
- LANGUAGE
- ENCLOSURE STYLE
- PRODUCT STYLE

Panel Options	Valid Entries	Description
Product Style	OA	Oasis Fire Alarm Control Panel
	OV	Oasis Network Vision Annunciator
Enclosure Style	1	4 Slot Standard Enclosure
	2	4 Slot Standard Plex-Door Enclosure
	3	4 Slot Deep Enclosure
	4	4 Slot Deep Plex-Door Enclosure
	7	8 Slot Standard Enclosure - 16 Loop
	8	8 Slot Standard Plex-Door Enclosure - 16 Loop
	9	8 Slot Deep Enclosure - 16 Loop
	A	8 Slot Deep Plex-Door Enclosure - 16 Loop
	C	Annunciator
Language	0	English
	1	Portuguese
	2	Spanish
	3	Taiwanese
Power Supply	0	None
	1	5.25 A 115V
	2	5.25 A 230V
	3	10.25 A (auto-voltage sensing)
Loop Modules & Communication Modules	00	Not Fitted
	NC	Network Module only (Network Vision Annunciator)
	H#	2-Loop Panel Module, Hochiki Protocol
	I#	2-Loop Panel Module, Hochiki Protocol, and Media Gateway™
	J#	2-Loop Panel Module, Hochiki Protocol, and Network Module
	K#	2-Loop Panel Module, Hochiki Protocol, Network Module, and Media Gateway™
Cabinet Color	1	Red (RAL3002)
	4	Gray (BS 00 A 05)
	6	Black (RAL9005)
Printer, Zone LEDs & Aperture	0	No Printer / No Zone LEDs
	1	No Printer / No Zone LEDs, Blank 2nd Aperture
	3	Printer / No Zone LEDs
	4	Printer / 48 Zone LEDs
	5	No Printer / 48 Zone LEDs
	6	No Printer / 96 Zone LEDs
	7	No Printer / 144 Zone LEDs
Optional Peripheral Cards	a	16 Channel I/O Panel Module (S772)
	b	8 Channel Relay Panel Module (S791)
	c	8 Channel Conventional Zone Module (S792)
	d	4 Channel NAC Module (S793)

OASIS NETWORK VISION ANNUNCIATOR

OVC00NC-10 (Red), OVC00NC-40 (Gray), and OVC00NC-60 (Black)



Product Overview

The Oasis Network Vision Annunciator is the most qualified annunciator on the market. It is a full-color graphical display and touchscreen. It represents the most versatile annunciator for life safety systems available today. The Annunciator is a full-function fire alarm repeater that is configurable and application-flexible for use in applications such as hospital nursing stations and elevator alarms.

Oasis Network Vision Annunciators can be configured to fully replicate fire control panel functionality, or to operate as simple, display-only devices for applications where access to fire alarm controls are inappropriate.



Standard Features

- Full-color 7" (800 x 480 pixel) interface
- Replicates information displayed at the FACP
- Automatic display brightness adjustment
- Internal buzzer
- Connects via control panel network terminals
- Low current, 24V DC powered
- Configurable functionality
- Enable key-switch
- Sheet steel enclosure
- Surface or semi-flush enclosure options available

Technical Specifications

Supply Voltage	21 - 30VDC
Quiescent Current during Power Failure	216mA typical (buzzer off @ 24V DC) 246mA typical (buzzer on @ 24V DC) 341mA max (buzzer on @ 21V DC)
Maximum Number of Units on a Network	31 Annunciators
Size	9.25" x 6.7" x 2.2" (235 mm x 170 mm x 55 mm)
Display	Full color 800 x 480 LCD with resistive touch screen and automatic back-light dimming
Construction	18 AWG, 1.2 mm mild sheet steel
Cable Entry	2 x 20 mm knockouts on top & bottom 4 x 20 mm and 2 x 28 mm knockouts in back
Vision Annunciator Electronics Only	S787
Finish	Epoxy Powder Coated
Color	2 21 Red (RAL3002)
	2 21 Gray (BS 00 A 05)
	2 21 Black (RAL9005)
Optional Semi-Flush Mounting Collar Kit	KM1098RD - Red KM1098GY - Gray KM1098BS - Black
Weight	4.4 lbs (2 kg) maximum
IP Rating	IP30



S791

8 CHANNEL RELAY PANEL MODULE



Product Overview

The 8 Channel Relay Panel Module has 8 voltage-free changeover relay contacts, each of which can be individually programmed. All outputs are configurable in the same way as devices connected to the loops and all may be acted upon by cause and effect logic. These boards are typically used in applications which require more than the five standard relay outputs, such as signaling to other systems or plant control.

Standard Features

- Simple plug-in connection to the Oasis Fire Alarm Control Panels
- 8 volt free changeover relay contacts (1 Amp 30V DC)
- Relay operated indications
- All outputs programmable for cause and effects
- Decals provided to redesignate terminals

Technical Specifications

Supply Voltage	21 to 30VDC
Quiescent Current Consumption	10mA
Maximum Current Consumption	160mA (all relays ON)
Output Contact Rating	2.5Aper Channel
Maximum Line Impedance	1A @ 30VDC
Dimensions	234.6mm x 62.8mm or 9.25" x 2.5"
Cable Capacity	2.5sq.mm per terminal
Operating Temperature	23°F - 120°F (-5°C - 49°C)
Operating Humidity	up to 95% (non-condensing)

S792

8 CHANNEL CONVENTIONAL ZONE MODULE



Product Overview

The 8 Channel Conventional Zone Panel Module has 8 supervised detection circuits (Class B). Each circuit can support up to 20 conventional detectors and approved devices. Individual circuits may be configured for trigger resistor or short circuit activation. These circuits may be used for any of the standard input actions and can be configured to contribute to cause and effect logic. Each pair of circuits (e.g., 1 and 2, 3 and 4, etc.) can be joined to form a single Class A configuration.

Standard Features

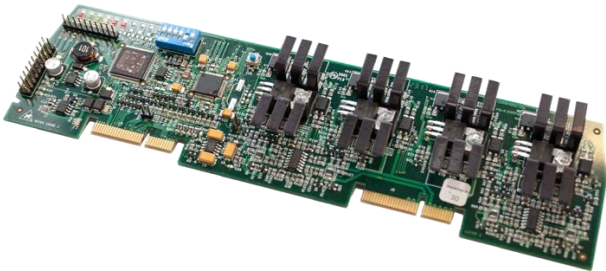
- Simple plug-in connection to the Oasis Fire Alarm Control Panels
- 8 monitored, conventional, detection zone inputs
- Decals provided to redesignate terminals

Technical Specifications

Supply Voltage Range	21 to 30VDC
Quiescent Current Consumption	70mA
Maximum Current Consumption	210mA
Maximum Line Impedance	10.1 Ohms
Dimensions	234.6mm x 62.8mm or 9.25" x 2.5"
Operating Temperature	23°F - 120°F (-5°C - 49°C)
Operating Humidity	up to 95% (non-condensing)

S793

4 CHANNEL NAC PANEL MODULE



Product Overview

Additional NAC output capability can be added to by using 4 Channel NAC Modules. These boards have 4 supervised NAC outputs, each of which can be individually programmed. The circuits can be configured for class A or B operation. These circuits can be configured to act upon cause and effect logic.

Standard Features

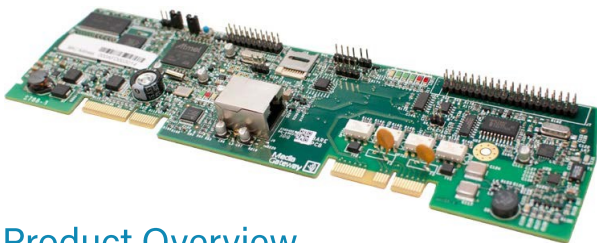
- Simple plug-in connection to the Oasis Fire Alarm Control Panels
- 4 NAC outputs
- Fault and operated LED on-board indicators
- Decals provided to redesignate terminals

Technical Specifications

Supply Voltage Range	21 - 30VDC
Quiescent Current Consumption	30mA
Maximum Current Consumption	50mA
Current per Output	2.5Aper Channel
Maximum Line Impedance	4V loss (load-dependent)
Dimensions	234.6mm x 62.8mm or 9.25" x 2.5"
Cable Capacity	2.5sq.mm per terminal
Operating Temperature	23°F - 120°F (-5°C - 49°C)
Operating Humidity	up to 95% (non-condensing)

S788

MEDIA GATEWAY PANEL MODULE



Product Overview

The Media Gateway™ is a communication panel module for the Oasis Fire Alarm Control Panel. The Media Gateway Panel Module provides connectivity to a remote monitoring center via Sur-Gard Fibro or dial-up. SIA is the recommended format for usage, but Contact ID is also supported. Transmission can be made through one or two telephone lines, and/or IP through Ethernet. Standard reporting codes have been pre-defined, although the user may customize these codes through the Loop Explorer 2 programming application. The Media Gateway can provide connectivity to third party networks (please consult an Avenger applications engineer for further information), and our new graphics system L@ti-View.

Standard Features

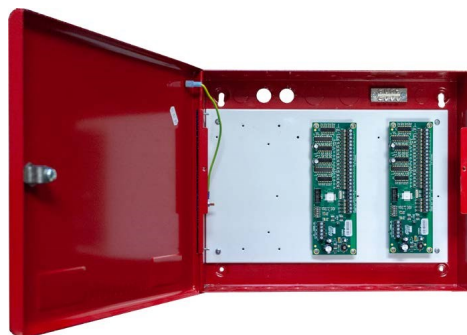
- Simple plug-in connection to the Oasis Fire Alarm Control Panels
- Dual Line Dialer Capability (SIA or Contact ID)
- IP Capable (Sur-Gard Fibro)
- Programmable to report via point or zone
- Programmable for back-up reporting
- Reporting codes can be customized by user

Technical Specifications

Supply Voltage	24VDC
Quiescent Current Consumption	114mA
Maximum Current Consumption	114mA
Dimensions	234.6mm x 62.8mm or 9.25" x 2.5"
Operating Temperature	23°F - 120°F (-5°C - 49°C)
Operating Humidity	up to 95% (non-condensing)

S560 (Board) and S772 (Panel Module)

16 CHANNEL I/O INTERFACE



Panel Module (S772)



Board (S560)



Standard Features

- Simple plug-in connection
- Total of 16 channels per board
- Each channel configurable as input or output
- Up to 4 boards supported per 2-8 loop panel (maximum of 64 input/output channels)
- Up to 8 boards supported per 2-16 loop panel (maximum of 128 input/output channels)
- Inputs opto-isolated
- Outputs open collector transistor
- Inputs and outputs configurable as per field devices
- Full cause and effects on all inputs and outputs
- Decals provided to redesignate terminals

Product Overview

The 16 Channel I/O Interface enhances the versatility of the alarm system by providing additional input and output capabilities to the Oasis Fire Alarm Control Panels. Inputs or outputs can be selected up to 16 individual channels. All inputs and outputs are configured in the same way as devices connected to addressable loops of the panel. The 16 Channel I/O Interface can be configured to contribute or act upon cause and effect logic.

Input points of this device are not supervised and therefore shall not be used for life safety initiation within a UL listed system. In a UL application this module must be housed in the panel or a listed enclosure connected to the panel by

Technical Specifications

Model	Board (S560)	Panel Module (S772)
Supply Voltage	24VDC	24VDC
Quiescent Current Consumption	20mA	20mA
Current per Input	3mA (maximum)	3mA (maximum)
Current per Output	100mA or 500mA across bank of 8 outputs	100mA per output OR 400mA across bank of 8 outputs
Dimensions	7.5" x 2.5"	9.25" x 2.5" (234.6mm x 62.8mm)
Cable Capacity	2.5mm per terminal	2.5mm per terminal
Operating Temperature	32°F to 122°F (0°C to 50°C)	23°F to 120°F (-5°C to 49°C)
Operating Humidity	up to 95% (non-condensing)	up to 95% (non-condensing)

A small ancillary cabinet is required for mounting the 16 Channel I/O Interface Board. The ancillary cabinet should be mounted near the Oasis panel. Provide a metal enclosed wiring pathway (such as conduit) between the panel and the cabinet.

Cabinet w/ Lid and Mounting Plate: VF0770-<A>, where A designates color (1 = red, 4 = gray) and B designates the number of cards (up to 3) to be installed.

SUPREME (Discontinued Product)

2 or 4 LOOP ANALOG ADDRESSABLE FIRE ALARM CONTROL PANELS

AS1420-XX 2 Loop

AS1440-XX 4 Loop

where xx=10 for Red and xx=40 for Gray



Standard Features

- UL 864 9th Edition listed
- Multi-Loop 2 Analog Addressable Loops Field upgradable to 4
- 127 primary points per loop
- Powerful, network wide cause and effects (500 total) - Fully user programmable by point or zone
- Up to 800 points per panel when using devices and sub-points
- Up to 10,000 feet wiring length on SLC loop
- 64 Panels on a network
- Programmable through a PC connection to the panel, or through keypad
- Programmable on-board relays: 5
- Supervised Powered Outputs: 3
- Programmable Notification Appliance Circuits: 4
- Power per NAC: 1.6 Amps Max
- Programmable outputs on SLC loop
- Programmable Function button on front display
- Fire Drill button on front display
- Day and night sensitivity settings (user programmable)
- Power Supply: 5.25 Amp, regulated & integrated
- LCD Display: 8x40 Characters
- Zonal Mode: Annunciation by zone w/o individual relationships
- Panel Ring Modes: Common, Zonal, Stage 2
- NAC Outputs programmable as Continuous, March, Temporal
- Program Cause and Effects AND, OR, or Any Two (Cross Zone)
- Battery size: Up to 17 Ah in standard enclosure; up to 52 Ah with external cabinet
- Access levels: 3
- Access key switch: Yes
- Recognized for use in High Rise
- One man walk test - Fire Test Mode
- Available with semi flush trim ring
- Available in Red or Gray

Product Overview

The Supreme analog addressable FACP's support 2 or 4 SLC loops for a total of 500 primary points and up to 800 points using sub-points.

SLC loop communications uses standard twisted pair cabling, shielded cable is not necessary.

The panel may be configured with various communication cards; Communications options support remote programming, central station monitoring, Virtual Panel, and networking.

The Panel can be configured as a stand-alone panel with just a few devices for a small building; it can also operate as the building system and can be part of a network with a total of 64 nodes serving a multiple building campus or a very large facility.

Autolearn capability provides a convenient method to troubleshoot new installations before final programming is loaded.



Added Features

Supreme with eNET

AS1425-XX / AS1445-XX

- Network uses standard RS485 cabling
- Up to 2,000 ft. between adjacent panels
- 115 Kbps constant network speed
- Secure, fault tolerant communication
- Up to 64 nodes

Supreme with DACT

AS1424-XX / AS1444-XX

- Dual line digital communicator and modem
- Contact ID and SIA reporting
- UL 864 9th edition listed
- Zone or point reporting
- Backup and duplicate reporting

Also Available

- 2 loop expansion board (VF1053-00)
- Trim ring (VF1070-xx)
- Supreme Panel with Internal Printer



All parts available in Red or Gray with or without an internal printer. When ordering specify -CP

- where C = 1 for Red or 4 for Gray and
- where P = 0 for No internal printer or 3 for Internal printer

Technical Specifications

AC Voltage Supply	120VAC @ 60Hz (Optional 240 VAC @ 50Hz)	
Output DC	4 Amps @ 24VDC	
DC Power Supply Rating	5.25 Amp regulated and integrated	
Charger Current	1.25 Amps max.	
Dimensions	14.5"W x 24"H x 5"D	
Weight	25 lbs. (without batteries)	
Color	RAL3002 (Red) or BS 00 A 05 (Gray)	
Display	8 line x 40 character LCD (320 characters total)	
Zones	500 Zones per network	
SLC Loops	2 or 4 (class A or B)	
Devices per Loop	127 sensors & modules (800 addresses + sub-addresses max. per panel)	
NAC Outputs	(4) 1.6 Amp @ 24VDC (class B)	
Relay Outputs	(5) Form C 1 Amp @ 30VDC	
Voltage Outputs	(3) 500mA @ 24VDC, reverse polarity supervised	
AUX Power	500mA @ 24VDC	
AUX Inputs	(3) digital pull downs	
Current Consumption	VF1420-00	VF1440-00
	355mA Standby	455mA Standby
	650mA Alarm	765mA Alarm

SUPREME-RS

1 or 2 LOOP ANALOG ADDRESSABLE FIRE ALARM CONTROL PANELS

AS0810-XX 1 Loop

AS0820-XX 2 Loop

where xx=10 for Red and xx=40 for Gray



Standard Features

- UL 864 9th Edition listed
- One full SLC circuit expandable to two
- 3 programmable relays
- 5.25A power supply
- 8 x 40 characters LCD display
- Real time clock
- Compatible with eMATRIX graphics annunciator
- Powerful, network wide cause and effects (500 total)
- Fully user programmable by point or zone
- Can be networked with additional Supreme RS and / or Supreme control panels
- Compatible with eVIEW Annunciator
- Programmable through a PC connection to the panel
- Same look and feel as Supreme range
- Stores 1000 last events in history log
- Model ranges include with or without a Dual-Line internal DACT
- Compact, stylish enclosure
- Available in Red or Gray



Product Overview

Supreme RS is a versatile range of open protocol fire alarm control panels compatible with existing Supreme fire alarm panel technology.

Available with one or two detection loops for a total of 254 primary SLC points or up to 800 points using addresses and sub-addresses. Supreme RS uses leading edge microprocessor based electronics to provide a flexible control system with high reliability and integrity.

Suitable for all small to medium sized fire detection systems, Supreme RS control panels can be expanded and networked to become part of much larger systems if the need arises, therefore providing a future proof solution for any installation.

With its large graphical display and ergonomic button and indicator layout, the Supreme RS control panel is simple and straightforward to understand for installers, commissioning engineers and end users alike.



Added Features

Supreme RS with eNET

AS0815-XX / AS0825-XX

- Network uses standard RS485 cabling
- Up to 2,000 ft. between adjacent panels
- 115 Kbps constant network speed
- Secure, fault tolerant communication
- Up to 64 nodes

Supreme with DACT

AS0816-XX / AS0826-XX

- Dual line digital communicator and modem
- Central Station Reporting - Contact ID and SIA reporting
- On-board loop start terminal connections for both primary and secondary telecommunication lines

Supreme RS with DACT and eNET

AS0817-XX / AS0827-XX

- Dual line digital communicator and modem
- Central Station Reporting - Contact ID and SIA reporting
- On-board loop start terminal connections for both primary and secondary telecommunication lines

Panels Peripherals Available

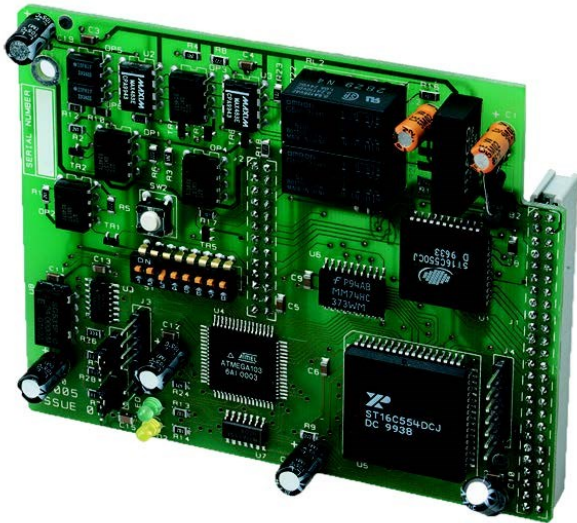
- eNET Networking Card (AS1170-00)
- 1 Loop Expansion Board (AS1054-00)
- Flush Mount Trim Ring (AS1071-XX)

Technical Specifications

AC Voltage Supply	115VAC or 230VAC, 50 or 60Hz (Specify when ordering)
AC Supply Fuse	1.6A @ 250VAC
Output DC	4 Amps @ 24VDC
DC Power Supply Rating	5.25A @ 24VDC
Construction	16AWG sheet steel
Dimensions	14.5"W x 18.9"H x 4.25"D
Weight	20 lbs. (without batteries)
Color	RAL3002 (Red) or BS 00 A 05 (Gray)
Display	8 line x 40 character LCD (320 characters total)
Zones	500 Zones per network
SLC Loops	1 or 2 (class A or B)
Devices per Loop	127 sensors & modules (800 addresses + sub-addresses max. per panel)
NAC Outputs	(2) 2.3A @ 24VDC (class B) - 3.1A Total
Batteries (24Hr Standby)	9Ah 12VDC (2 per panel)
Fault Contact Rating	1A @ 30VDC
Fire Contact Rating	1A @ 30VDC
Alarm Contact Rating	1A @ 30VDC
AUX Power	500mA @ 24VDC
AUX Inputs	(3) digital pull downs
Detection Loop	250mA Output
Serial Expansion Port	Serial RS485
PC Port	Serial RS232
Network Connection	Optional eNET card
NAC Synchronization	Internal Support (System Sensor, Wheelock, Gentex, Amseco)

AS1170-00

SUPREME E-NET CARD



Standard Features

- Up to 64 nodes
- High integrity protocol when wired Class A
- Fully secure against short or open circuit faults
- Simple two-wire loop connection
- Supports open ended networks for retrofit applications
- Network wide test and disablement functions
- Network wide cause and effect logic
- Flexible configuration options
- Panels configurable to act on network events or not as required

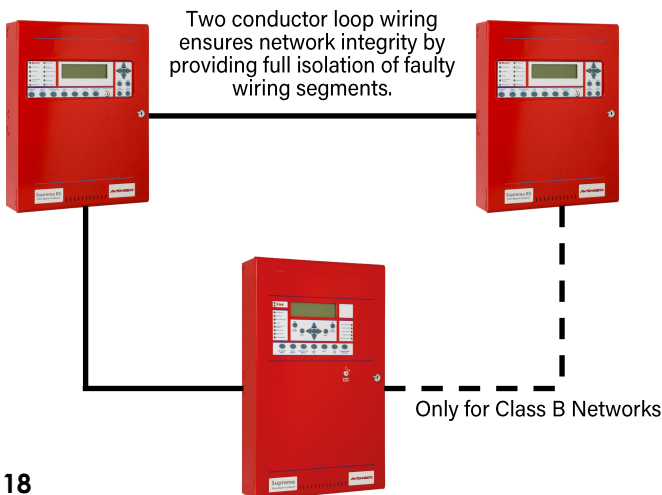


Product Overview

The flexibility of the Supreme system can be further enhanced by connecting control panels and repeaters together using a high integrity network. A simple two-wire connection between each panel allows events to be transmitted to other parts of the system to provide indication or control on a system wide basis.

Using the Loop Explorer configuration software, up to 64 nodes can be programmed to respond in a variety of ways to any system events as required.

This flexibility extends the comprehensive cause and effect programming capability of Supreme control panels to the entire network allowing actions, test modes or disablements to be started from any point. The fault tolerance of the network is such that any single open or short circuit fault will not result in any loss of information. Multiple faults are isolated and the network breaks into smaller networks which continue to work autonomously.

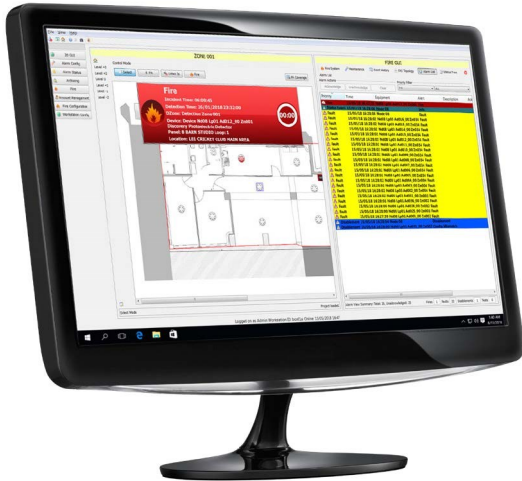


Technical Specifications

Protocol	RS485
Connection	Two Wire Loop
Current Consumption	40mA
Integrity	Full isolation of faulty nodes or wiring segments
Indicators	Data In and Data Out communications status
Cable Type	Belden 9271, Belden 9860, FP200 Gold
Compatible Panels	Supreme / Supreme RS

L@TI-VIEW

VISUAL FIRE ALARM SYSTEM MANAGEMENT SOFTWARE



Product Overview

L@ti-View can automatically switch to the area on the site map where a fire has been activated to quickly view an event and begin immediate investigation. With L@ti-View, operators and users are alerted to an event as soon as it occurs and are directed to the location of the event.

A Maintainer's area provides dedicated functions for a fire alarm system's maintenance team. A comprehensive list of all fire devices along with their statuses, cause and effect rules, and integration settings allows operators to quickly view a device, make changes, and disable devices all from one workstation. For all fire devices on the site, a Maintainer's log shows operators and engineers a view of all recorded maintenance activities, previous faults and status histories to help speed up maintenance procedures and device

Ordering Codes

LEUS2004	L@ti-View - Supreme / Supreme RS - 4 Panel License
LEUS2016	L@ti-View - Supreme / Supreme RS - 16 Panel License
LEUS2064	L@ti-View - Supreme / Supreme RS - 64 Panel License
LVUS2004	L@ti-View - Oasis - 4 Panel License
LVUS2016	L@ti-View - Oasis - 16 Panel License
LVUS2128	L@ti-View - Oasis - 128 Panel License

Standard Features

- Supports dual screens
- Reports configuration mismatch errors
- Powerful event log filtering and reporting
- Manages the state of the fire system
- programmable macro buttons to perform panel control operations
- Full map navigation
- Device analog value reporting
- Performs device and zone disablements / enablements

Permissions

L@ti-View enables permissions to be given to different levels of users. There are four default user accounts configured upon installation.

Additional accounts can be created by the administrator. These user accounts use default permissions groups, but user accounts and groups can be cloned and edited per site requirements. The default accounts are:

- **Operator:** Ordinary users of the system.
- **Manager:** Users who supervise the operators and as such have additional permissions and access. 2D GUI editing permitted.
- **Maintainer:** Users who maintain the system. Allows analog value polling, control of outputs, fire panel operations, fire zone testing and additional maintenance facilities.
- **Administrator:** Users who are permitted to administer the system. Full system access permitted.

eVIEW

SUPREME SERIAL ANNUNCIATOR

AS1172-10 Red Color
AS1172-30 Gray Color



Standard Features

- Available in Red or Gray
- Up to 15 annunciators can be connected to each Supreme or Supreme-RS fire control panel
- Large liquid crystal display (240 x 64 pixels)
- High brightness LED indications
- Internal sounder
- Replicates all panel controls (Supreme / Supreme-RS)
- Simple, two-wire serial connection
- Small, Supreme style enclosure
- Removable electronics for easy installation
- 24V DC powered
- Low power consumption
- Multi-language options
- Connection supervised by Supreme fire control panel
- Recess mounting using optional AS1173 kit

Product Overview

Designed and manufactured to the highest standards in a quality controlled environment the eVIEW fire alarm annunciator provides a simple and convenient method of extending the controls and indications of the Supreme fire alarm control panel to other locations.

The large, graphic LCD and high brightness LED indicators duplicate the indications on the Supreme fire alarm control panel at up to 15 additional locations via a simple, two-wire serial data connection.

The eVIEW is powered by 24V DC (which can be via an additional 2 conductors from the control panel or local 24V DC listed supply).

eVIEW is housed in a small enclosure which is styled similarly to the Supreme control panel and is ideal for installations where a large control panel would be detrimental to decor such as entrance halls.

Up to 15 eVIEW annunciators can be connected to each control panel on the Supreme network making eVIEW ideal where multiple points of indication and/or control are required, such as nurses stations or shop units.

Technical Specifications

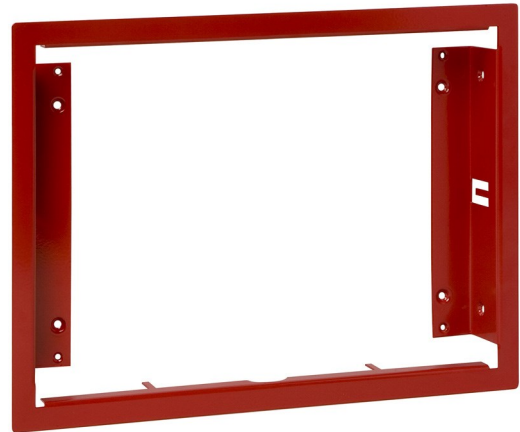
Supply Voltage	21 - 30VDC
Current Draw (Standby)	20mA @ 24VDC
Current Draw (Alarm)	110mA @ 24VDC
Size	9.25" x 6.7" x 2.2" (235 mm x 170 mm x 55 mm)
Display	8 Line x 40 Characters LCD Display ((320 Total)
Construction	18 AWG, 1.2 mm mild sheet steel
Cable Entry	4 knockouts in backbox, 1 in left side, 1 in right side
Dimensions	10.4"(W) x 7.5"(H) x 1.6"(D)
Weight	3.5lbs
Finish	Epoxy Powder Coated
Color	^{2 21} Red (RAL3002)
	^{2 21} Gray (BS 00 A 05)
Serial Data Connection	2 core RS485 (Up to 3937 feet total Cable Length)
Operating Temperature Range	32°F (0°C) to 120°F (49°C)
Relative Humidity	85% RH Non-Condensing

Trim Ring Specifications

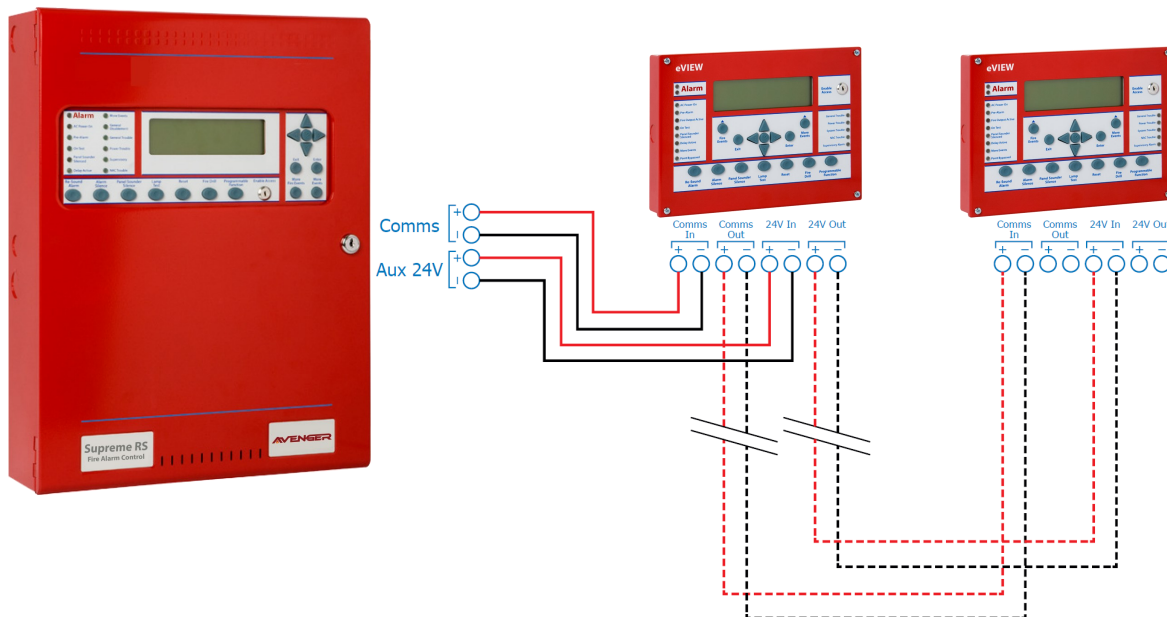
Outer Dimensions	11.3"(W) x 8.6"(H) x 1.3"(D)
Inner Dimensions	10.3"(W) x 7.4"(H)
Finish	Epoxy Powder Coated
	^{2 21} Red (RAL3002)
Color	^{2 21} Gray (BS 00 A 05)

Ordering Codes

AS1172-10	eView Serial Annunciator - Red Color
AS1172-40	eView Serial Annunciator - Gray Color
AS1173-10	Trim Ring for recess mounting - Red Color
AS1173-40	Trim Ring for recess mounting - Gray Color



The VES trim ring allows the eVIEW annunciator to be easily recess mounted. Avenger trim rings provides placement tabs that fold behind dry wall. Traditional screw mounting is available by 2 openings in each of the vertical frames. Conduit entry is not blocked by trim ring.



eMATRIX

CONFIGURABLE FLOOR PLAN MIMIC ANNUNCIATOR



Standard Features

- Available in Red or Gray
- Up to 504 LEDs can be controlled from any Supreme panel
- Select up to 12 printed colors (not including background and building outline)
- Available in a range of standard enclosures to suit any application
- Custom sized units can be made upon request
- Choice of Red, Green or Yellow LEDs
- eMATRIX can easily be upgraded on site with minimal cost and effort
- UL 864 9th edition listed

Product Overview

The eMATRIX system uses flexible, optic light guides to illuminate areas on a floor plan, laid over a high resolution grid. This unique system dispenses completely with wiring and enables indicators to be moved, removed or added on site without the need for any wiring.

All indicators can be configured to operate upon any event type and at point, zone or group level via the powerful and intuitive Loop Explorer configuration. eMATRIX can be supplied with or without LEDs and controls. Optional LEDs indicate Power on, Fire, Trouble and Disablement and optional controls are for Alarm silence, Buzzer silence, Lamp test and Reset.

Housed in attractive, slimline enclosures to match Supreme fire alarm panels and with high quality, full color floor plans, eMATRIX provides a clear, geographical indication of fire alarm activation enabling speedy identification of the source of an alarm.



Building Plan Mounted on Inner Door



LED Grid



Mimic Panel Internal Layout

Technical Specifications

Supply Voltage	21 - 30VDC
Terminal Capacity	12 - 22 AWG solid or stranded wire
Construction	18 AWG, 1.2 mm mild sheet steel
Finish	Epoxy Powder Coated
Color	2/21 Red (RAL3002) 2/21 Gray (BS 00 A 05)
Mimic	3mm Clear Anti-Glare Acrylic
Cabinet Lock	CAT30 Key
Communication Interface	RS485 – Supreme serial I/O bus protocol
Maximum Distance from Control Panel	4000 feet using RS485 data cable
IP Rating	IP30
Operating Temperature Range	20°F (0°C) to 120°F (49°C)
Relative Humidity	85% RH Non-Condensing

Ordering Codes

AS1301-XYZ	eMATRIX Mimic Panel Size AM2 - Red Color
AS1304-XYZ	eMATRIX Mimic Panel Size AM2 - Gray Color
AS1321-XYZ	eMATRIX Mimic Panel Size AM3 - Red Color
AS1324-XYZ	eMATRIX Mimic Panel Size AM3 - Gray Color
AS1331-XYZ	eMATRIX Mimic Panel Size AM3 - Red Color
AS1334-XYZ	eMATRIX Mimic Panel Size AM3 - Gray Color

Where:

"X" denotes the number of Red Expansion Boards

"Y" denotes the number of Green Expansion Boards

"Z" denotes the number of Yellow Expansion Boards

Note:

Maximum number of expansion boards / LEDs as follows:

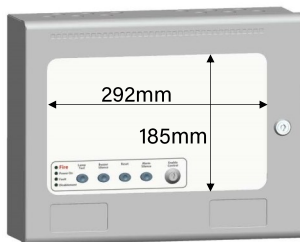
AM2: 2 expansion boards maximum (40 LEDs)

AM3: 4 expansion boards maximum (72 LEDs)

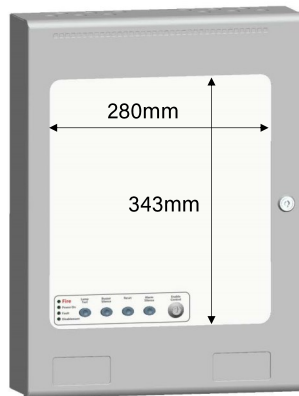
AM4: 5 expansion boards maximum (88 LEDs)

Battery Life

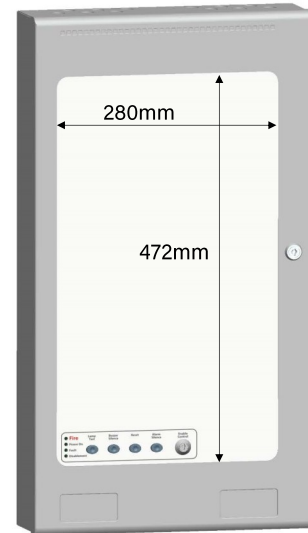
Number of LEDs	Standby Current (Amp)	Full Alarm Current (Amp)	Batteries for 24 Hours (Ah)	Batteries for 48 Hours (Ah)
40	0.026	0.09	0.88	1.76
72	0.052	0.18	1.75	3.5
88	0.078	0.36	2.8	5.2



Max. number of LED's = 40
Will house 1 x 8 Red LED driver PCB
and 2 x 16 LED extension PCB's
(Red, Green or Yellow)
369mm wide x 310 mm high x
90mm deep



Max. number of LED's = 72
Will house 1 x 8 Red LED driver PCB
and 4 x 16 LED extension PCB's
(Red, Green or Yellow)
369mm wide x 480 mm high x
110mm deep



Max. number of LED's = 88
Will house 1 x 8 Red LED driver PCB
and 5 x 16 LED extension PCB's
(Red, Green or Yellow)
369mm wide x 610 mm high x
127mm deep

AS2011-00

ADDRESSABLE PHOTOELECTRIC SMOKE SENSOR



Standard Features

- Low Profile - Only 2.0" high, including base
- Simple and reliable device addressing
- Automatic compensation for sensor contamination
- Built-in fire test feature
- Uses the noise-immune Digital Communication Protocol (DCP), which utilizes interrupts for fast response to fires
- Two built-in power/alarm LEDs
- Programmable non-polling LEDs
- Non-directional smoke chamber
- Vandal resistant security locking feature
- Removable smoke labyrinth for cleaning or replacement

NOTE: Bases are not included with detectors, please order separately.

Application

The AS2011-00 Photoelectric Smoke Sensor is particularly suited to detecting optically dense smoke typical of fires involving materials such as soft furnishings, plastic, foam or other similar materials which tend to smolder and produce large visible smoke particles. Avenger's unique design allows fast response to flaming fires as well as smoldering fires while preventing false alarms.

Operation

The detection chamber consists of a light-emitting diode (LED) and photodiode arrangement. The chamber is designed such that light emitted by the LED cannot normally reach the photodiode. In the event of fire, particles of smoke enter the chamber and scatter the light. As the smoke level increases, the scattering effect increases, causing more light to hit the photodiode. The chamber contains a unique baffle design which allows smoke to enter the chamber while preventing external light from affecting the photodiode. The photodiode input level is sampled to sense smoke density.

When the smoke density exceeds a preset threshold the sensor transmits an interrupt to the fire control panel indicating a fire condition. The fire alarm control panel can adjust the sensor threshold to compensate for contamination.

Up to 127 devices are permitted on each SLC loop. A sensor address is set by a hand-held programming unit. The sensor mounts to an electronics-free base and incorporates a locking mechanism for secure installation. The base provides mounting slots, terminals for field wiring and a third contact for a remote indicator/LED. The sensor incorporates dual LEDs for easy viewing of sensor status.

Sensor Spacing

Smoke sensor spacing shall be in compliance with NFPA 72. For smooth ceilings and in the absence of specific performance-based design criteria, the distance between smoke sensors shall not exceed a nominal spacing of 30 ft. (9.1m) **or** all points on the ceiling shall have a sensor within a distance equal to or less than 0.7 times the nominal 30 ft. (9.1m) spacing.

Engineering Specification

The contractor shall furnish and install where indicated on the plans, photoelectric sensors AS2011 The combination sensor head and twist lock base shall be UL listed compatible with a UL listed fire alarm control panel.

The Sensor and Base shall be UL listed as compatible with the fire alarm control panel (FACP). The base shall permit direct interchange with the Avenger AS2011 photoelectric smoke sensor, AS2010 heat sensor, and the AS2012 / AS2014 Multi-Criteria sensors.

The sensitivity of the sensor shall be capable of being measured by the control panel.

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be optional and can be implemented when required.

Bases

The AS7001 and the AS7002 mounting bases are electronics free and are a simple rugged design with screw terminals for wiring connections. A common mounting base allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper head locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can be removed using a small diameter screw driver.

Technical Specifications

Operating Voltage	17 - 41 VDC
Standby Current	450µA
Alarm Current	540µA
Transmission Method	DCP (Digital Communication Protocol)
Operating Temperature	14°F to 122°F (-10°C to 50°C)
Maximum Humidity	Up to 95% non-condensing
Sensitivity Range	0.7 - 4.00 %/FT @ 300 FPM 0.7 - 3.86 %/FT @ 2000 FPM 0.7 - 2.65 %/FT @ 4000 FPM
Air Velocity Range	0 - 4000 FPM
Color and Case Material	Bone / White - ABS Blend
Weight	3.4 oz. (5.1 oz with 4" base)

Ordering Codes

AS2011-00	Addressable Photoelectric Smoke Detector
AS7001-00	4" Addressable Base
AS7002-00	6" Addressable Base
AS7003-00	4" Addressable Base with built-in Isolator
AS7004-00	6" Addressable Base with built-in Isolator
AS7005-00	Low Frequency Sounder Base
AS7008-00	Sounder Base
AS8201-00	Round Shape Remote LED Indicator
AS8202-00	Square Shape Remote LED Indicator

AS2010-00

ADDRESSABLE FIXED TEMPERATURE / RATE OF RISE HEAT DETECTOR



Standard Features

- Low Profile - Only 2.0" high, including base
- Simple and reliable device addressing
- 2 in 1: Fixed Temperature / Rate of Rise Detector
- Uses the noise-immune Digital Communication Protocol (DCP), which utilizes interrupts for fast response to fires
- Two built-in power/alarm LEDs
- Programmable non-polling LEDs
- Rate of rise temperature threshold: 15°F/Min (determined by panel)
- Adjustable threshold temperature: 135°F to 190°F
- UL maximum spacing of 70 feet

NOTE: Bases are not included with detectors, please order separately.

Application

The AS2010 Fixed Temperature / Rate of Rise sensors provide accurate temperature measurement data to the fire alarm control panel. These sensors are well-suited for environments where dust, cooking fumes or other factors make the use of smoke sensors impractical.

Operation

The AS2010 incorporates a highly linear thermistor circuit. The specially designed cover protects the thermistor while allowing maximum air flow. The thermistor circuit produces a voltage proportional to the temperature; this information is transmitted to the control panel as a digital value. When the ambient temperature exceeds a preprogrammed threshold (fixed temp or rate of rise), the sensor transmits an interrupt to the control panel indicating a fire alarm. The fire alarm control panel can adjust the sensor's fixed temperature threshold for different installation requirements.

Up to 127 devices may be installed on each SLC loop. The sensor address may be set by a hand-held programming unit. The sensor mounts to an electronics-free base and incorporates a locking mechanism for security. The base provides mounting slots, terminals for field wiring and a third terminal for a remote indicator/ LED. The sensor has dual LEDs for easy viewing of the sensor status.

Sensor Spacing

Heat sensor spacing shall be in compliance with NFPA 72. The distance between heat sensors shall not exceed their listed spacing or all points on the ceiling shall have a sensor within a distance equal to or less than 0.7 times the listed spacing. Heat sensors shall be located within a distance of one-half the listed spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height. For additional instructions see NFPA 72.

Engineering Specification

Heat sensors are installed in accordance with NFPA (National Fire Protection Association) 72, the UL Listed Spacing Requirements and the rules and regulations set forth by the local authorities having jurisdiction.

The contractor shall furnish and install, where indicated on the plans, Fixed Temp / Rate of Rise Automatic heat sensors.

The Sensor and Base shall be UL listed as compatible with the fire alarm control panel (FACP). The base shall permit direct interchange with the Avenger AS2011 photoelectric smoke sensor, AS2010 heat sensor, and the AS2012 / AS2014 Multi-Criteria sensors.

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be optional and can be implemented when required.

It shall be possible for the control panel to perform a functional test of the sensor without heat. The test method shall simulate the effects of heat on the device to insure testing of internal circuitry.

Bases

The AS7001 and the AS7002 mounting bases are electronics free and are a simple rugged design with screw terminals for wiring connections. A common mounting base allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper head locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can be removed using a small diameter screw driver.

Technical Specifications

Operating Voltage	17 - 41 VDC
Standby Current	350µA
Alarm Current	500µA
Transmission Method	DCP (Digital Communication Protocol)
Operating Temperature	14°F to 122°F (-10°C to 50°C)
Maximum Humidity	Up to 95% non-condensing
UL Temperature Range	135°F to 190°F (57.2°C to 87.8°C)
Rate of Rise	15° F/Min. (8.3° C/Min.)
UL Maximum Spacing	70 Feet
Color and Case Material	Bone / White - ABS Blend
Weight	3.2 oz. (4.9 oz with 4" base)

Ordering Codes

AS2010-00	Addressable Heat Detector
AS7001-00	4" Addressable Base
AS7002-00	6" Addressable Base
AS7003-00	4" Addressable Base with built-in Isolator
AS7004-00	6" Addressable Base with built-in Isolator
AS7005-00	Low Frequency Sounder Base
AS7008-00	Sounder Base
AS8201-00	Round Shape Remote LED Indicator
AS8202-00	Square Shape Remote LED Indicator

AS2012-00

ADDRESSABLE MULTI-CRITERIA SENSOR - SMOKE / HEAT



Standard Features

- Low Profile - Only 2.0" high, including base
- Simple and reliable device addressing
- Automatic compensation for sensor contamination
- Built-in fire test feature
- Uses the noise-immune Digital Communication Protocol (DCP), which utilizes interrupts for fast response to fires
- Two built-in power/alarm LEDs
- Programmable non-polling LEDs
- Non directional smoke chamber
- Vandal resistant security locking feature
- Removable smoke labyrinth for cleaning or replacement

NOTE: Bases are not included with detectors, please order separately.

Application

The AS2012 Multi-Criteria Sensor is particularly suited for detecting smoke produced by a wide range of combustibles found in various applications. Temperature monitoring is achieved by a thermistor placed for optimum sensitivity. Avenger's unique design allows fast response to flaming fires as well as smoldering fires while minimizing false alarms.

Operation

The AS2012 chamber consists of a light-emitting diode (LED) and photodiode arrangement. The chamber is designed such that light emitted by the LED cannot normally reach the photodiode. In the event of fire, particles of smoke enter the chamber and scatter the light. As the smoke level increases, the scattering effect increases, causing more light to hit the photodiode. The chamber contains a unique design which allows smoke to enter the chamber while preventing external light from affecting the photodiode. The photodiode input level is sampled to sense smoke density. When the smoke density exceeds a preset threshold the sensor transmits an interrupt to the fire control panel indicating a fire condition. The fire alarm control panel can adjust the sensor threshold to compensate for contamination.

The AS2012 Heat portion incorporates a highly linear thermistor circuit, with two thermistors mounted externally. The specially designed cover protects the thermistors while allowing maximum air flow. The thermistor circuit produces a voltage proportional to temperature which is scaled, and transmitted as a digitally encoded value to the control panel. When the ambient temperature exceeds a preprogrammed threshold (fixed temperature), the sensor transmits an interrupt to the control panel indicating a fire alarm. The fire alarm control panel can adjust the sensor threshold for different standard's requirements.

Up to 127 devices are permitted on each SLC loop. A sensor address can be set by a hand-held programming unit. The sensor mounts to an electronics-free base and incorporates a locking mechanism for secure installation. The base provides mounting slots, terminals for field wiring and a third contact for a remote indicator / LED. The sensor incorporates dual LEDs for easy viewing of sensor status.

Sensor Spacing

Smoke sensor spacing shall be in compliance with NFPA 72. For smooth ceilings and in the absence of specific performance-based design criteria, the distance between smoke sensors shall not exceed a nominal spacing of 30 ft. (9.1m) or all points on the ceiling shall have a sensor within a distance equal to or less than 0.7 times the nominal 30 ft. (9.1m) spacing. Sensors shall be located within a distance of one-half the nominal spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height. For additional instructions see NFPA 72.

Engineering Specification

The contractor shall furnish and install AS2012 (Multi-Criteria Sensor) as indicated on the plans. The Multi-Criteria Sensor head and twist lock base shall be UL listed and compatible with the UL listed fire alarm control panel.

The Sensor and Base shall be UL listed as compatible with the fire alarm control panel (FACP).

The base shall permit direct interchange with the Avenger AS2011 photoelectric smoke sensor, AS2010 heat sensor, and the AS2012 / AS2014 Multi-Criteria sensors.

The sensitivity of the sensor shall be capable of being measured by the control panel.

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be optional and can be implemented when required.

Bases

The AS7001 and the AS7002 mounting bases are electronics free and are a simple rugged design with screw terminals for wiring connections. A common mounting base allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper head locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can be removed using a small diameter screw driver.

Technical Specifications

Operating Voltage	17 - 41 VDC
Standby Current	450µA
Alarm Current	540µA
Transmission Method	DCP (Digital Communication Protocol)
Maximum Humidity	Up to 93% non-condensing
UL Temperature Range	135°F to 150°F (57.2°C to 65°C)
Operating Temperature	14°F to 122°F (-10°C to 50°C)
Sensitivity Range	0.7 - 4.00 %/FT @ 300 FPM 0.7 - 3.86 %/FT @ 2000 FPM 0.7 - 2.65 %/FT @ 4000 FPM
Air Velocity Range	0 - 4000 FPM
Color and Case Material	Bone / White - ABS Blend
Weight	4.2 oz. (5.9 oz with 4" base)

Ordering Codes

AS2012-00	Addressable Multi-criteria Detector
AS7001-00	4" Addressable Base
AS7002-00	6" Addressable Base
AS7003-00	4" Addressable Base with built-in Isolator
AS7004-00	6" Addressable Base with built-in Isolator
AS7005-00	Low Frequency Sounder Base
AS7008-00	Sounder Base
AS8201-00	Round Shape Remote LED Indicator
AS8202-00	Square Shape Remote LED Indicator

AS2014-00

ADDRESSABLE MULTI-CRITERIA SENSOR - SMOKE / HEAT / CO / COHB



Application

The AS2014 Multi-Criteria Sensor is particularly suited for detecting smoke produced by a wide range of combustibles found in various applications. Temperature monitoring is achieved by a thermistor placed for optimum sensitivity. The sensor is also suited for detecting deadly levels of CO.

The sensors unique design allows fast response to flaming/smoldering fires and carbon monoxide levels while minimizing nuisance alarms.

Ordering Codes

AS2012-00	Addressable Multi-criteria Detector
AS7001-00	4" Addressable Base
AS7002-00	6" Addressable Base
AS7003-00	4" Addressable Base with built-in Isolator
AS7004-00	6" Addressable Base with built-in Isolator
AS7005-00	Low Frequency Sounder Base
AS7008-00	Sounder Base
AS8201-00	Round Shape Remote LED Indicator
AS8202-00	Square Shape Remote LED Indicator

Standard Features

- Low Profile - Only 2.0" high, including base
- Simple and reliable device addressing
- 16 Programmable Modes of Operation, based upon 9 different detection factors allow extreme application flexibility
- Compatible with AS7005 Low Frequency Sounder base to provide a prioritized Temporal 3 Signal in case of Fire or Temporal 4 Signal in case of CO
- Automatic compensation for sensor contamination
- Built-in fire test feature
- Uses the noise-immune Digital Communication Protocol (DCP), which utilizes interrupts for fast response to fires
- Two built-in power/alarm LEDs
- Programmable non-polling LEDs
- Non directional smoke chamber
- Vandal resistant security locking feature
- Pre-Alarm Function
- 10 year life span on CO sensor

Technical Specifications

Operating Voltage	17 - 41 VDC
Standby Current	450µA
Alarm Current	7.2mA
Recommended Base	AS7005-00
Transmission Method	DCP (Digital Communication Protocol)
Maximum Humidity	Up to 95% non-condensing
Operating Temperature	14°F to 122°F (-10°C to 50°C)
Sensitivity Range	0.7 - 4.00 %/FT @ 300 FPM 0.7 - 3.86 %/FT @ 2000 FPM 0.7 - 2.65 %/FT @ 4000 FPM
Air Velocity Range	0 - 4000 FPM
Color and Case Material	Bone / White - ABS Blend
Weight	4.2 oz. (5.9 oz with 4" base)



Operation

The AS2014 smoke detection chamber consists of a light-emitting diode (LED) and photodiode arrangement. The chamber is designed such that light emitted by the LED cannot normally reach the photodiode. In the event of fire, particles of smoke enter the chamber and scatter the light. As the smoke level increases, the scattering effect increases, causing more light to hit the photodiode. The chamber contains a unique design which allows smoke to enter the chamber while preventing external light from affecting the photodiode. The photodiode input level is sampled to sense smoke density. When the smoke density exceeds a pre-set threshold the sensor transmits an interrupt to the fire control panel indicating a fire condition. The fire alarm control panel can adjust the sensor threshold to compensate for contamination.

The AS2014 heat portion incorporates a highly linear thermistor circuit, with two thermistors mounted externally. The specially designed cover protects the thermistor while allowing maximum air flow. The thermistor circuit produces a voltage proportional to temperature which is scaled, and transmitted as a digitally encoded value to the control panel. When the ambient temperature exceeds a preprogrammed threshold (fixed temperature), the sensor transmits an interrupt to the control panel indicating a fire alarm. The fire alarm control panel can adjust the sensor threshold for different requirements.

The AS2014 CO sensing cell serves a dual purpose of supplementing smoke detection in combination with the photodiode arrangement and monitoring colorless, odorless, and deadly CO levels. When the carbon monoxide exceeds the poisonous levels, the sensor transmits an interrupt to the control panel indicating a CO alarm.

Sensor Spacing

Smoke sensor spacing shall be in compliance with NFPA 72. For smooth ceilings and in the absence of specific performance-based design criteria, the distance between smoke sensors shall not exceed a nominal spacing of 30 ft. (9.1m) or all points on the ceiling shall have a sensor within a distance equal to or less than 0.7 times the nominal 30 ft. (9.1m) spacing. Sensors shall be located within a distance of one-half the nominal spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height. For additional instructions see NFPA 72.

Engineering Specification

The contractor shall furnish and install AS2014 (Multi-Criteria Sensor) as indicated on the plans. The Multi-Criteria Sensor head and twist lock base shall be UL listed and compatible with the UL listed fire alarm control panel.

The Sensor and Base shall be UL listed as compatible with the fire alarm control panel (FACP).

The base shall permit direct interchange with the Avenger AS2011 photoelectric smoke sensor, AS2010 heat sensor, and the AS2012 Multi-Criteria sensor.

The sensitivity of the sensor shall be capable of being measured by the control panel.

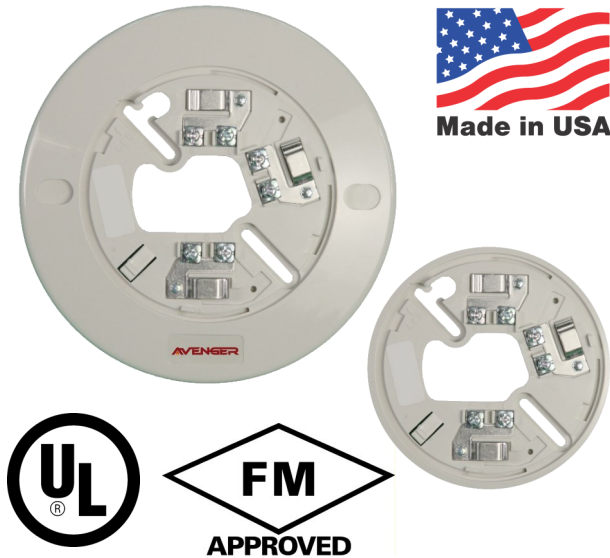
The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be optional and can be implemented when required.

Bases

The AS2014 supports the AS7001-00, AS7002-00, AS7003-00, AS7004-00 and AS7008-00 bases as well as the recommended AS7005-00 base when used for life safety CO sensing. A common mounting base allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper head locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can be removed using a small diameter screwdriver.

AS7001-00 / AS7002-00

ADDRESSABLE SENSOR BASES



Standard Features

- UL Listed
- Designed for use with all Avenger analog sensors
- Available in 4 and 6 inch models
- Contains a security locking tab for tamper protection

Ordering Codes

AS7001-00	4" Addressable Base
AS7002-00	6" Addressable Base

Application

Each base is connected to a Signaling Line Circuit (SLC) and provides easy replacement of sensors, without disturbing the wiring.

The bases are electronics free and contain a simple rugged design with screw terminals for wiring connections. A common mounting base allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper head Locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can only be removed using a small diameter screw driver.

Operation

The AS7001 (4" base) and AS7002 (6" base) are designed specifically for use with the Avenger Analog sensors, models AS2011 Photoelectric Smoke Sensor, AS2010 Heat Sensor and AS2012 / AS2014 Multi-Criteria Sensors.

The AS7001 and AS7002 common mounting bases allow for complete compatibility for all of the Avenger Analog sensors.

The bases are lightweight and very thin, providing a low profile once installed. The solder-less screw terminals enable quick and easy wiring connections.

Engineering Specifications

The Dealer shall furnish and install where indicated on the plans, models AS2011 Photoelectric Smoke Sensor, AS2010 Heat Sensor and AS2012 Multi-Criteria Sensors. The selected sensor shall be attached to the AS7001 or AS7002 base and permit direct interchange between the listed sensors.

NOTE: SLC maximum resistance is 50 ohms.

ADDRESSABLE SENSOR BASES WITH BUILT-IN ISOLATORS



- UL Listed
- Ability to detect short circuit conditions
- Designed for use with all Avenger analog sensors
- Built-in LED indication upon short circuit condition
- Available in 4 and 6 inch models
- Contains a security locking tab for tamper protection

Operating Voltage	17 - 41 VDC
Current Consumption	Normal: 160μA Active: 10mA
Security Feature	Plastic tamper-lock
Color and Case Material	Bone PC / White - ABS Blend

The AS7003-00 and the AS7004-00 are short circuit isolation mounting bases containing a simple rugged design with screw terminals for wiring connections. These common mounting bases allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper head locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can only be removed using a small diameter screwdriver.

The AS7003-00 and AS7004-00 are designed specifically for use with Avenger Analog Sensors, AS2010, AS2011, AS2012 and AS2014. The AS7003-00 and AS7004-00 common mounting bases allow for complete compatibility for all of the Avenger Analog sensors. The solder-less screw terminals enable quick and easy wiring connections.

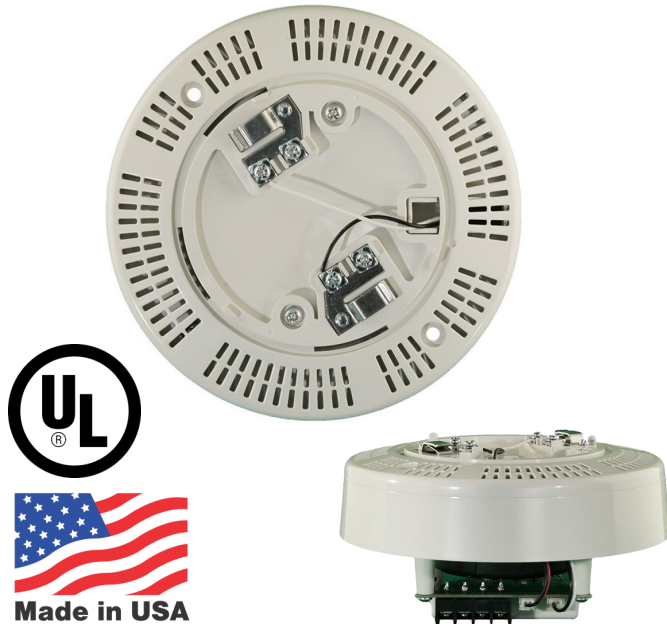
The base shall permit direct interchange with Avenger AS2011 Photoelectric Smoke Sensor, AS2010 Heat Sensor, and the AS2012 / AS2014 Multi-criteria Sensors. The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be optional and can be implemented when required.

Ordering Codes

33

AS7005-00

ADDRESSABLE LOW FREQUENCY SOUNDER BASE



Standard Features

- UL268 and UL464 listed
- 520Hz low frequency alarm signal meets NFPA requirements for sleeping areas
- Up to 127 sensors and 127 AS7005 bases can be used on one SLC loop
- Can be alarmed or reset by zone or by individual address
- Programmable evacuation codes: Continuous, March, ANSI Temporal 3 and 4 patterns
- High sound pressure level (85dB SPL at 10 feet)
- Support for Temporal 4 when used with AS2014 CO detector
- Requires auxiliary 24VDC line
- AS7006-00 optional Trim Ring for surface mount installations

Application

The AS7005-00 Low Frequency Sounder Base is designed for use with Avenger Addressable Sensors. Each base is to be connected to the Avenger State-of-the-Art Digital Communications Protocol (DCP) Signaling Line Circuit (SLC). The AS7005-00 provides an audible alarm in the immediate vicinity. Ideal applications are Hotels, Apartments, and Hospitals. The AS7005-00 meets NFPA 72 requirements for Low Frequency alarms in sleeping areas. Studies have shown that a low frequency alarm signal is the most effective at waking people with mild to moderate hearing loss.

Operation

The AS7005-00 is designed for installation in sleeping areas, such as bedrooms, dorm rooms, hotel rooms, patient rooms, etc. Operation and supervision of the AS7005-00 is fully managed by the compatible Fire Alarm Control Panel (FACP). The AS7005-00 has a highly configurable programming algorithm that allows the user to set up groups of bases for synchronization of modulation tones. Each device has 16 states that are programmed with the desired sound pattern to be used for each state.

Technical Specifications

Operating Voltage	17 - 41 VDC
SLC Current Consumption	154µA (Standby and Alarm)
Auxiliary Power	16 - 31 VDC
Auxiliary Current Consumption	2.8mA (Standby)
Auxiliary Current Consumption (Alarm)	72mA @ 33VDC 95mA @ 24VDC 140mA @ 16VDC
Sound Pressure Level	85db
Max. Quantity per Loop	127
UL Ambient Installation Temperature Range	32°F to 100°F (0°C to 38°C)
Operating Temperature Range	32°F to 122°F (0°C to 50°C)
Maximum Humidity	Up to 93% non-condensing
Base Diameter	6.6"
Base Height	3.1"
Security Feature	Plastic tamper-lock
Color and Case Material	Bone PC / White - ABS Blend

AS7008-00

ADDRESSABLE SOUNDER BASE



Application

The AS7008-00 Sounder Base is designed for use with Avenger Addressable Sensors. Each base is to be connected to the Avenger State-of-the-Art Digital Communications Protocol (DCP) Signaling Line Circuit (SLC). The AS7008-00 provides an audible alarm in the immediate vicinity. Ideal applications are Hotels, Apartments, and Hospitals.

The AS7008-00 bases are lightweight and very thin, providing a low profile once installed. The solderless screw terminals enable quick and easy wiring connections.

Operation

The AS7008-00 has a highly configurable programming algorithm that allows the user to setup groups of bases for synchronization of modulation tones. Each device has 16 states that are programmed with the desired output pattern to be used (e.g., "Temporal" or "March") for each state.

Addressing is automatically provided by the attached Sensor. The device is configurable through Loop Explorer Programming Software.

Standard Features

- Programmable evacuation codes - Continuous, March, ANSI Temporal patterns
- High sound pressure level: 85db @ 10 feet
- Can be alarmed / reset by zone or by individual address
- Up to 127 sensors and 127 AS7005 bases can be used on one SLC loop
- Base learns the sensor address and assumes an upper range address (128 - 254)
- Requires auxiliary 24VDC line
- AS7006-00 optional trim ring for surface mount installations

Technical Specifications

Operating Voltage	17 - 41 VDC
SLC Current Consumption	110µA (Standby and Alarm)
Auxiliary Power	16 - 31 VDC
Auxiliary Current Consumption	550µA (Standby) 18mA (Alarm)
Sound Pressure Level	85db
Max. Quantity per Loop	127
UL Ambient Installation Temperature Range	32°F to 100°F (0°C to 38°C)
Operating Temperature Range	32°F to 122°F (0°C to 50°C)
Maximum Humidity	Up to 93% non-condensing
Dimensions	1.34"H x 5.94"D
Weight	0.455 lb
Security Feature	Plastic tamper-lock
Color and Case Material	Bone PC / White - ABS Blend

Number of Bases Permitted

# of Bases in Alarm	Maximum Auxiliary 24VDC Power Wire Resistance (Total Auxiliary Run Length)
127	1.4 ohm
75	2.4 ohm
60	3.0 ohm
50	3.6 ohm
30	6.1 ohm
20	9.1 ohm
15	12.2 ohm
10	18.3 ohm

NOTE: SLC maximum wiring resistance is 50 ohms

AS5013-00 / AS5014-00 (Discontinued Product)

ADDRESSABLE DUCT SENSORS



Standard Features

- Detects and limits the spread of smoke throughout building HVAC ducts
- Compatible with building automation and fire alarm systems
- Installs quickly and easily
- No screens or filters to clean
- Rugged gray steel back box with clear cover
- Accessories - Remote LED alarm indication capability
- Meets UL 268A Requirements



Application

The Avenger AS5013 and AS5014 Analog Photoelectric Duct Smoke Sensor provides early detection of smoke and products of combustion present in air moving through HVAC ducts in Commercial, Industrial and Residential applications.

The Analog Photoelectric Duct Smoke Sensor is designed to prevent the recirculation of smoke in areas by the air handling systems, fans and blowers. Complete systems may be shut down in the event of smoke detection.

The Avenger AS5013 and AS5014 operate on a DCP powered loop (24 VDC source required for AS5014).

Operation

The AS5013 and AS5014 are designed and built to meet all local requirements, as well as the NFPA regulations regarding duct smoke sensors.

Output terminals are provided for remote accessories such as a horn, strobe, remote status indicators and reset key switches or push buttons. Air sampling is accomplished by two tubes which protrude into the duct. An exhaust tube of one standard length (7.5") is supplied in the installation kit with the smoke duct unit. Once the duct width has been determined the air intake sampling tubes must be ordered. Sampling tubes are supplied in three standard lengths 2.5 ft., 5 ft. and 10 ft. and cut to size to fit the duct.

Mounting the duct smoke unit is accomplished by the use of a template and 4 sheet metal screws, which are provided. Mounting can be achieved without the removal of the clear cover which is secured by 4 capture screws.

The compact AS5014 contains 2 sets of form "C" contacts rated at 10 amps.

The pilot and alarm visual indicators, provided on the front of the AS5014 duct unit, signal the operating status of the device. A manual test/ reset switch is located alongside the visual indicators.

After addressing, Analog Duct Sensors are fully configurable through Loop Explorer Software.

Engineering Specification

The Dealer shall furnish and install where indicated on the plans, the Avenger Systems AS5013 or AS5014 Analog Photoelectric Duct Sensors.

The modules shall be UL listed compatible with Avenger Systems Digital Communications Protocol (DCP) supporting Supreme control panel loops. The sensors shall be listed by Underwriters Laboratories per UL 268A.

The sensors shall operate at air velocities from 300 feet per minute to 4,000 feet per minute. The duct detector housings shall be of metal construction and complete mechanical installation may be performed without removal of detector cover. The duct sensor shall not require additional filters or screens which must be maintained. The housing shall contain a base which will accept an analog photoelectric sensor head. Terminal connections shall be of the screw type and be a minimum of #6 screw. For installations requiring relay function, terminals shall be provided for remote pilot, remote alarm indication, strobe / horn and remote key switch. For installation not requiring relay function, visual indication of alarm and power must be provided on detector front.

A manual reset switch shall be located on front of the device. All wiring must comply with local codes and regulations.

State-of-the-art communications protocol, DCP, allows multiple system component types to be used concurrently in a system's Signaling Line Circuit.

Technical Specifications

Model #	AS5013-00	AS5014-00
Average Current Consumption (on S-SC Line)	2mA	10mA
Sensor Type	Addressable Photoelectric	Addressable Photoelectric
Input Voltage	DCP Powered Loop	DCP Powered Loop / AUX 24VDC
Sensitivity Test Method	Control Panel	Control Panel
Contacts	N/A	2 form C rated 10A @ 250VAC
Standby Current	390µA	390µA
Alarm Current	540µA	540µA
Operating Temperature Range	32°F - 100°F	32°F - 100°F
Relative Humidity	10-85%, non-condensing	10-85%, non-condensing
Air Velocity	300 to 4000 ft/min	300 to 4000 ft/min
Sampling Tubes	2.5ft., 5ft., 10ft.	2.5ft., 5ft., 10ft.
Housing	18 G.A. steel backbox, clear plastic cover	18 G.A. steel backbox, clear plastic cover
Dimensions	9 1/8"(L) x 7 1/4"(W) x 2 1/4"(D)	9 1/8"(L) x 7 1/4"(W) x 2 1/4"(D)
Weight	3lbs.	3lbs.
Finish	Gray Paint	Gray Paint
Remote Indication	Alarm	Alarm / Pilot

AS3031-10 / AS3032-10 / AS3029-10

ADDRESSABLE MANUAL PULL STATIONS



AS3031-10



AS3032-10



AS3029-10

Application

The Avenger AMS series of addressable manual pull stations provide a fast and practical means of manually initiating a fire alarm signal. Both single action and dual action manual pull stations are available. Resetting of the pull station requires either a Cat 30 key or a 1/8" hex key (depending on the model used).

Operation

An alarm condition is actuated by pulling down on the handle of the AS3031-10 and AS3032-10 single action models. On the dual action model AS3029-10 the Lift and Pull cover must be lifted before pulling down on the pull station handle. Once the pull station is activated, the handle cannot be put back into a normal standby condition without using the key operated reset.

The AMS series is electronically addressable and includes a bi-colored status LED. The LED blinks green indicating normal communication with the DCP compatible SLC loop. When an alarm condition is actuated by pulling the handle, the LED will latch Red to indicate the alarm condition.

Standard Features

- Addressable integrated design
- All metallic construction
- Single and dual action models available
- Extremely easy to operate
- Bi-colored status LED indicates Standby and Alarm conditions
- Address is programmable in EEPROM
- Address can be programmed when installed
- Key lock or hex key lock models available
- Enclosed switch with glass rod (included) Terminals accept up to 14AWG wire
- Surface mount back box available (AS3035-10)

Engineering Specification

Manual pull stations shall be Avenger Systems addressable AMS series single or dual action models, AS3031-10, AS3032-10 or AS3029-10. Models shall be made of 14 AWG CRS and painted with Red enamel. The words Fire Alarm shall be in a contrasting color and be embossed text 1/2" tall. The electronics shall be fully integrated into the manual pull station requiring only connection to the SLC loop of the control panel. Programming of the manual pull station address must be possible with the manual pull station fully installed. Manual pull stations shall be Underwriters Laboratories Inc. Listed and installed within the limits defined in the Americans with Disabilities Act.



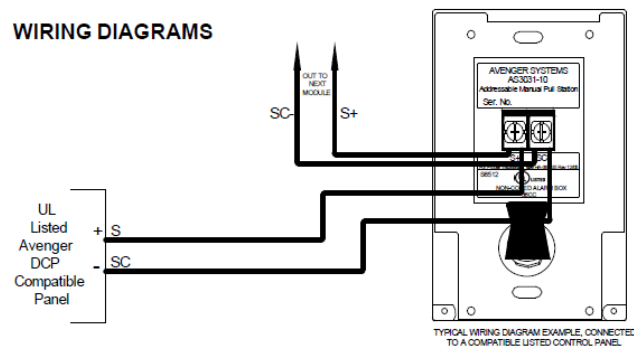
Technical Specifications

Operating Voltage (SLC)	17~41 VDC
Input Voltage	DCP Powered Loop
Standby Current	550 μ A
Alarm Current	660 μ A
Operating Temperature Range	32°F - 120°F
Relative Humidity	90%, non-condensing
Dimensions	3.4"W x 4.8"H x 2.0"D
Mounting	Single gang electrical box or AS3035-10
Finish	Red Enamel Paint
Surface Mount Backbox Size (AS3035-10):	3.2"W x 4.8"H x 1.8"D

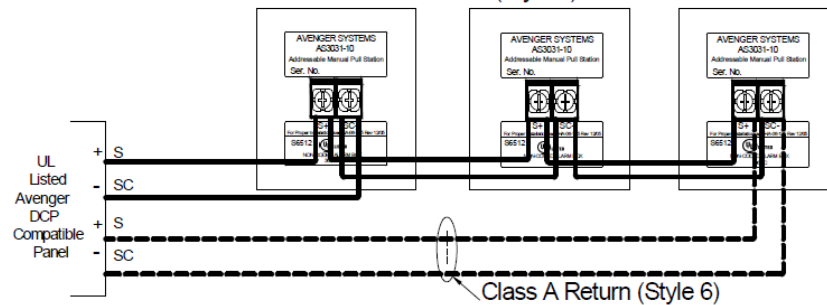


Backbox AS3035-10

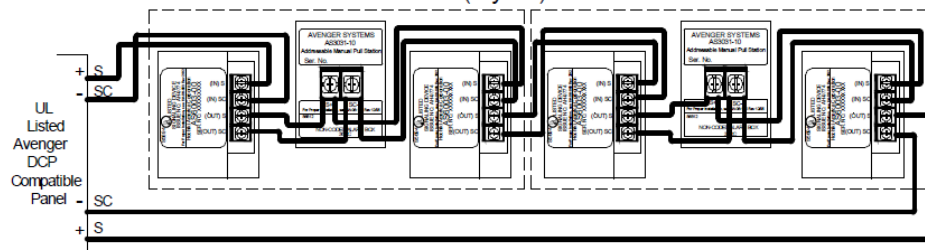
WIRING DIAGRAMS



Class B (Style 4)



Class A (Style 7)



AS6013-00

ADDRESSABLE FAST RESPONSE MONITORING MODULE WITH PIGTAILS



Application

The AS6013-00 Fast Response Contact Monitoring Modules are designed to be used with pull stations, water flow switches, and other applications requiring the monitoring of dry contact devices. The interrupt driven Digital Communications Protocol (DCP) combines maximum communication reliability and fast response to emergency conditions. The AS6013-00 contact monitoring module does not require a separate 24 VDC power source.

Operation

Each addressable contact monitoring module is programmed with its own unique Signaling Line Circuit (SLC) loop address. The device address is electrically programmable and stored in onboard EEPROM. Up to 127 devices can be placed on the DCP SLC loop. The module supervises the wiring to the contact with an End Of Line (EOL) resistor. It can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts. If a fault condition occurs in the wiring, the module sends a trouble status signal to the fire alarm control panel. When a change of status (contact changes state) is sensed by the AS6013-00, it sends an interrupt to the control panel indicating that an alarm has occurred.

The AS6013-00 is small design and suitable for mounting in a single gang box.

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, addressable contact monitoring modules Avenger AS6013-00. The modules shall be UL listed and compatible with the Digital Communication Protocol (DCP) supporting control panel. The device address shall be electrically programmable and stored in EEPROM. The AS6013-00 shall fit inside a single gang electrical back box.

Standard Features

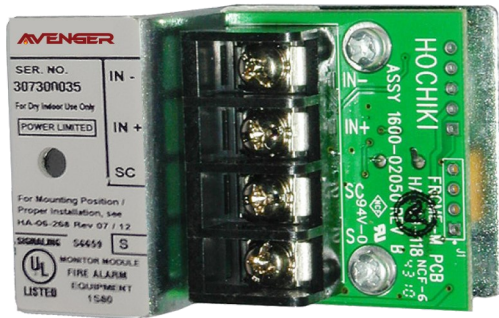
- UL 864 9th Edition Listed
- Single input contact monitor
- Fast, reliable contact monitoring utilizing the DCP (Digital Communication Protocol)
- 127 devices can be used per DCP loop
- Can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts (Class B circuits)
- Operates on Class A or Class B SLC loop

Technical Specifications

Supply Voltage (S - SC)	25.3 - 39 VDC
Average Current Consumption	550µA Standby 660µA Alarm
Programmable Input	1 Monitoring Input Class B (NC or NO)
EOL Device	10K Ohms Resistor
Maximum Quantity per Loop	127
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Maximum Humidity	Up to 90% non-condensing
Dimensions	3.0"(W) x 1.9"(H) x 0.5"(D)
Mounting	Single Gang Electrical Box

AS6024-00

ADDRESSABLE FAST RESPONSE MINIATURE MONITORING MODULE



Application

The AS6024-00 Fast Response Contact Monitoring Modules are designed to be used with pull stations, water flow switches, and other applications requiring the monitoring of dry contact devices. The interrupt driven Digital Communications Protocol (DCP) combines maximum communication reliability and fast response to emergency conditions. The AS6024-00 contact monitoring module does not require a separate 24 VDC power source.

Operation

Each addressable contact monitoring module is programmed with its own unique Signaling Line Circuit (SLC) loop address. The device address is electrically programmable and stored in onboard EEPROM. Up to 127 devices can be placed on the DCP SLC loop. The module supervises the wiring to the contact with an End Of Line (EOL) resistor. It can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts. If a fault condition occurs in the wiring, the module sends a trouble status signal to the fire alarm control panel. When a change of status (contact changes state) is sensed by the AS6024-00, it sends an interrupt to the control panel indicating that an alarm has occurred.

The AS6024-00 is small design and suitable for mounting in a single gang box.

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, addressable contact monitoring modules Avenger AS6024-00. The modules shall be UL listed and compatible with the Digital Communication Protocol (DCP) supporting control panel. The device address shall be electrically programmable and stored in EEPROM. The AS6024-00 shall fit inside a single gang electrical back box.

Standard Features

- UL 864 9th Edition Listed
- Single input contact monitor
- Fast, reliable contact monitoring utilizing the DCP (Digital Communication Protocol)
- 127 devices can be used per DCP loop
- Can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts (Class B circuits)
- Operates on Class A or Class B SLC loop
- Accepts up to 12AWG wires

Technical Specifications

Supply Voltage (S - SC)	25.3 - 39 VDC
Average Current Consumption	339µA Standby 358µA Alarm
Programmable Input	1 Monitoring Input Class B (NC or NO)
EOL Device	10K Ohms Resistor
Maximum Quantity per Loop	127
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Maximum Humidity	Up to 90% non-condensing
Dimensions	1.75"(W) x 2.37"(H) x 0.5"(D)
Mounting	2" Electrical Box

AS6020-00 / AS6021-00

ADDRESSABLE FAST RESPONSE MONITORING MODULES (CLASS A/B)



Application

The AS6020-00 / AS6021-00 Fast Response Contact Monitoring Modules are designed to be used with pull stations, water flow switches, and other applications requiring the monitoring of dry contact devices. The interrupt driven Digital Communications Protocol (DCP) combines maximum communication reliability and fast response to emergency conditions. Two different mounting configurations are provided to meet a wide range of applications. The AS6020-00 / AS6021-00 contact monitoring modules do not require a separate 24 VDC power source.

Operation

Each addressable contact monitoring module is programmed with its own unique Signaling Line Circuit (SLC) loop address. The device address is electrically programmable and stored in onboard EEPROM. Up to 127 devices can be placed on the DCP SLC loop. The modules supervise the wiring to the contact with an End Of Line (EOL) resistor. It can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts. If a fault condition occurs in the wiring, the module sends a trouble status signal to the fire alarm control panel. When a change of status (contact changes state) is sensed by the AS6020-00 / AS6021-00, an interrupt is sent to the control panel indicating that an alarm has occurred. AS6021-00 version has built-in integrated SCI circuitry. In the event of a short on the S-SC line, the SCI circuit will activate and its yellow LED indicator will be turned on steady and the module will report the short circuit condition to the Fire Control Panel.

Standard Features

- UL 864 9th Edition Listed
- Single input contact monitor
- Optional built-in Short Circuit Isolator (AS6021-00)
- Fast, reliable contact monitoring utilizing the DCP (Digital Communication Protocol)
- Bi-colored indicating LED provides module status
- Yellow LED indicates short circuit condition (AS6021-00)
- 127 devices can be used per DCP loop
- Can be programmed to monitor Normally Open (NO) contacts (Class A or B circuits) or Normally Closed (NC) contacts (Class B circuits)
- Accepts up to 14AWG wires

Technical Specifications

Supply Voltage (S - SC)	25.3 - 39 VDC
Average Current Consumption	630µA Standby 6.3mA Alarm
Programmable Input	1 Monitoring Input NC (Class B) or NO (Class A or B)
EOL Device (Class B circuits)	10K Ohms Resistor
SCI on Resistance	40 Ohm Max (Normal Condition)
SCI Fault Detection Threshold	12 Volts (Typical)
SCI Isolation Current (Short Circuit Condition)	10mA (Typical)
Maximum Quantity per Loop	127
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Maximum Humidity	Up to 90% non-condensing
Dimensions	4.2"(W) x 4.7"(H) x 1.4"(D)
Mounting	4" Square Electrical Box

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, addressable contact monitoring modules AS6020-00 / AS6021-00. The modules shall be UL listed and compatible with the Fire alarm control panel. The device address shall be electrically programmable and stored in EEPROM. The modules shall be supplied with a plastic face plate and shall be suitable for mounting to a 4" square or double gang electrical back box. The modules shall provide a monitor LED that is visible through the face plate. AS6021-00 shall provide a SCI LED that is visible through the face plate.

AS6007-00

ADDRESSABLE DUAL CHANNEL FAST RESPONSE MONITORING MODULES



Standard Features

- UL 864 9th Edition Listed
- Dual input contact monitor
- Fast, reliable contact monitoring utilizing the DCP (Digital Communication Protocol)
- Bi-colored indicating LED provides module status
- 127 devices can be used per DCP loop
- Can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts (Class B circuits)
- Accepts up to 14AWG wires

Application

The AS6007-00 Dual Input Monitor Module is designed for use on Avenger UL listed Fire Alarm Control Panels. It provides two independent contact monitoring circuits while only utilizing one address on the SLC loop. The AS6007-00 provides installing dealers an economical approach to monitor devices in the same proximity, such as water flow and valve supervision on the same interface device. The interrupt driven Digital Communication Protocol (DCP) combines maximum communication reliability and fast response to emergency conditions. The module has a single bi-colored LED to indicate device status. It fits into a standard 4" square or double gang electrical back box.

Operation

Each AS6007-00 addressable contact monitoring module is programmed with its own unique Signaling Line Circuit (SLC) loop address. The device address is electrically programmable and stored in onboard EEPROM. Up to 127 devices can be placed on the DCP SLC loop. The modules supervises the wiring to the contact with an End Of Line (EOL) resistor. It can be programmed to monitor Dual Normally Open (NO) or Normally Closed (NC) contacts. If a fault condition occurs in the wiring, the module sends a trouble status signal to the fire alarm control panel. When a change of status (contact changes state) is sensed by one of the channels of the AS6007-00, an interrupt is sent to the control panel indicating that an alarm has occurred.

Technical Specifications

Supply Voltage (S - SC)	25.3 - 39 VDC
Average Current Consumption	600µA Standby 720µA Alarm
Programmable Input	2 independent Monitoring Inputs NC or NO (Class B circuits)
EOL Device (Class B circuits)	22K Ohms Resistor
Maximum Quantity per Loop	127
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Maximum Humidity	Up to 90% non-condensing
Dimensions	4.2"(W) x 4.7"(H) x 1.4"(D)
Mounting	4" Square Electrical Box

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Avenger AS6007-00 addressable contact monitoring modules. The modules shall have the ability to monitor two different channels while occupying a single address on the loop. The modules shall be UL listed and compatible with the Digital Communications Protocol (DCP) supporting control panel loops. The device address shall be electrically programmable and stored in EEPROM. The contact module must be suitable for mounting in a standard 4" square electrical box or double gang. The contact module must provide a bi-colored LED to indicate device status.

AS6011-00

ADDRESSABLE CZM - CONVENTIONAL ZONE INPUT MODULE (CLASS A/B)



Application

The AS6011-00 provides installing dealers with the ability to upgrade locations on a phased approach or monitor a zone of conventional detectors. This capability is key to satisfying customer needs for a system upgrade over time, and allows a best case application of technology to match the upgrade with the customer's budget. All sensors may be monitored by the same Supreme Panel during the upgrade, reducing the potential confusion of "old and new" panel alarms.

Operation

The AS6011-00 Conventional Zone Module is designed for use on the Supreme analog addressable system. Up to 127 devices can be placed on a single SLC loop. The device address is uniquely stored on an onboard EEPROM. The module allows the panel to interface and monitor two-wire conventional detectors. Each AS6011-00 transmits the status of one zone of devices (25 maximums per zone) back to the panel. The AS6011-00 supervises the power supply as well as the entire zone of devices. Status conditions are reported as normal, open or alarm. All 2-wire detectors must be UL listed and compatible to be interfaced with the AS6011-00. The interrupt driven Digital Communication Protocol (DCP) combines maximum communication reliability and fast response to emergency conditions. The module has a single bi-colored LED to indicate device status. It fits into a standard 4" square or double gang electrical back box. After addressing, Conventional Zone Modules are fully configurable through Loop Explorer Programming Software.

Standard Features

- UL 864 9th Edition Listed
- Provides an address point for a zone of up to 25 conventional detectors
- Blinks green when polled. Latched on red (controlled by panel) when activated
- Device address can be programmed with a handheld programmer. Device address ranges from 1 to 127
- Compatible with Class B (Style B) and Class A (Style D) wiring styles
- Auxiliary power source provides power for the zone of detectors
- Compatible with conventional Avenger detectors

Technical Specifications

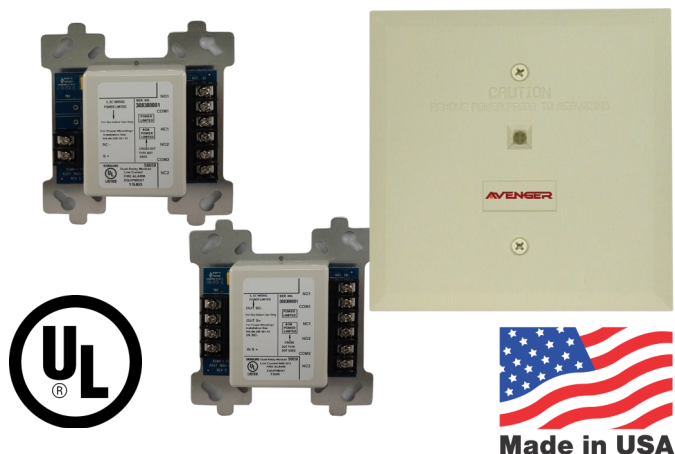
Supply Voltage (S - SC)	25.3 - 39 VDC
Auxiliary Supply Voltage	18.8 - 27.2 VDC
Average Current Consumption	670µA
2-Wire Detection Loop Current	1mA Max
Current Consumption from AUX	60mA Max
EOL Device	4.7 Ohms Resistor
Alarm Threshold Level	<1.5K ohms
Wiring Threshold Level	>2.5K ohms & 6K ohms
Open Circuit Threshold Level	>10K ohms
Maximum Resistance for conventional circuit	50 ohms (total wire length)
Maximum Quantity per Loop	127
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Maximum Humidity	Up to 90% non-condensing
Dimensions	4.2"(W) x 4.7"(H) x 1.4"(D)
Mounting	4" Square Electrical Box

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Conventional Zone Module (AS6011-00). The modules shall be UL Listed and compatible with the DCP Protocol. The device address shall be electrically programmed and stored in EEPROM. A bi-colored LED shall indicate device status. The AS6011-00 shall be supplied with a plastic cover and shall be suitable for mounting to a 4" square or double gang electrical back box.

AS6052-00, AS6053-00, AS6054-00, AS6055-00

ADDRESSABLE DUAL RELAY MODULES



Ordering Codes

AS6052-00	Addressable Dual Relay Module Low Voltage
AS6053-00	Addressable Dual Relay Module Low Voltage with built-in Short Circuit Isolator
AS6054-00	Addressable Dual Relay Module High Voltage
AS6055-00	Addressable Dual Relay Module High Voltage with built-in Short Circuit Isolator

Application

Avenger Dual Relay Modules have been designed to provide flexible and quick response to emergency conditions. Avenger Dual Relay Modules Series allows independent control of two form C contacts for a variety of normally open and normally closed contact applications such as fan operation, elevator recall, door closure, and auxiliary notification.

Operation

Each Avenger Dual Relay Module provides independent control of two Form C contacts while utilizing one SLC address. The modules have a highly configurable programming algorithm that allows the user to set up groups of devices (zoning) for simultaneous operation of multiple modules. The operating parameters are maintained by the module and do not require individual communication with the control panel during the emergency condition to operate. The control panel broadcasts the control command on the SLC loop and the Avenger Dual Relay Modules do the rest based on their custom configuration. Since mechanically latching relays are used within the Avenger Series modules, a separate 24VDC power source is not required.

Standard Features

- UL 864 9th Edition Listed
- Provides two independently configurable Form C contacts per address
- Optional built-in Short Circuit Isolator (AS6053-00 / AS6055-00)
- Fast, reliable contact monitoring utilizing the DCP (Digital Communication Protocol)
- Bi-colored indicating LED provides module status
- Yellow LED indicates short circuit condition (AS6053/55)
- Programming is highly flexible providing 16 priority states plus zoning capability

Technical Specifications

Supply Voltage (S - SC)	25.3 - 39 VDC
Average Current Consumption	350µA Standby 405µA Alarm
Contacts	2 Independently Controlled Form C VF6052 - 2A @ 30VDC VF6053 - 0.5A @ 120VAC VF6054 - 8A @ 30VDC VF6055 - 4.8A @ 250VAC
SCI on Resistance	40 Ohm Max (Normal Condition)
SCI Fault Detection Threshold	12 Volts (Typical)
SCI Isolation Current (Short Circuit Condition)	10mA (Typical)
Maximum Quantity per Loop	127
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Maximum Humidity	Up to 90% non-condensing
Dimensions	4.2"(W) x 4.7"(H) x 1.4"(D)
Mounting	4" Square Electrical Box

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Avenger addressable dual relay modules. The modules shall be UL listed and compatible with the DCP Protocol supporting control panels. The device address shall be electrically programmable and stored in EEPROM. The modules shall be supplied with a plastic face plate and shall be suitable for mounting to a 4" square or double gang electrical back box. The modules shall provide a bi-color monitor LED that is visible through the face plate. The relay modules must provide two Form C dry contacts.

AS6040-00 / AS6041-00

ADDRESSABLE SUPERVISED OUTPUT MODULES



Ordering Codes

AS6040-00 Addressable Supervised Output Modules Class A/B

AS6041-00 Addressable Supervised Output Modules Class A/B with built-in Short Circuit Isolator

Application

The Class A Supervised Output Modules (AS6040-00 & AS6041-00) have been designed to provide application flexibility and quick response to emergency conditions.

Operation

Flexibility is provided by a wide range of operating modes, including supporting multi-zone operations, and/ or functions, up to 16 different modulation patterns and multi-state programming. The operating parameters for the AS6040-00 & AS6041-00 are maintained by the module and do not require individual communication with the control system during emergency conditions to operate.

The control panel simply broadcasts system conditions on the Signaling Line Circuit (SLC) and the AS6040-00 & AS6041-00 modules do the rest based upon the custom configuration. Each AS6040-00 & AS6041-00 provides a single Class B or Class A circuit rated for 2.0 Amps @ 24 VDC. Each AS6040-00 & AS6041-00 also requires a 24 VDC power source in addition to the SLC.

Standard Features

- UL 864 9th Edition Listed
- Flexible application
- Quick response to emergency conditions
- Operation parameters are maintained by the module, and individual communication with the control system during emergency conditions is not required
- Contacts are rated 2.0 Amps @ 24VDC
- Optional built-in Short Circuit Isolator (AS6041-00)
- Programming is highly flexible providing 16 priority states plus zoning capability
- Programmed device output is turned off, silenced, or programmed to output the selected pattern

Technical Specifications

Supply Voltage (S - SC)	25.3 - 39 VDC
Auxiliary Supply Voltage	24 VDC
Output Rating	2A @ 24VDC
Current Consumption (S-SC Line)	AS6040-00: 420µA (Standby) AS6041-00: 220µA (Standby) 6mA MAX (Alarm)
Current Consumption from AUX	50µA (Typical)
SCI on Resistance	40 Ohm Max (Normal Condition)
SCI Fault Detection Threshold	12 Volts (Typical)
SCI Isolation Current (Short Circuit Condition)	10mA (Typical)
Maximum Quantity per Loop	127
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Maximum Humidity	Up to 90% non-condensing
Dimensions	4.2"(W) x 4.7"(H) x 1.4"(D)
Mounting	4" Square Electrical Box

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, addressable Class A Supervised Output Modules (AS6040-00 / AS6041-00). The modules shall be UL listed and compatible with THE DCP protocol supporting fire alarm control panel. The device address shall be electrically programmable and stored in EEPROM. A bi-colored LED shall flash to indicate normal system communication. The modules shall be supplied with a plastic cover and shall be suitable for mounting to a 4" square or double gang electrical back box. The modules shall provide a monitor LED that is visible from outside the cover plate.

AS6003-00

SHORT CIRCUIT ISOLATOR MODULE



Application

The Avenger AS6003-00 Short Circuit Isolator provides the capability of allowing NFPA SLC Class X installations.

Operation

Class A Configuration Wiring:

The AS6003-00 short circuit isolator should be located between any devices on the SLC loop. In the event of a short on the SLC loop, the two adjacent isolators (closest isolators to the left and right of the shorted section) will activate and their respective LED indicators will be turned on. All devices between the active short circuit isolators will be dead. This will prevent an entire loop failure.

Upon removal of the short condition, the AS6003-00 devices will automatically restore the entire loop to the normal operating state.

Class B Configuration Wiring:

The AS6003-00 short circuit isolator should be located between any devices on the SLC loop. In the event of a short on the SLC loop, an isolator closest to the shorted section will activate and the LED will be turned on. All the devices beyond the shorted section will lose communication.

Upon removal of the short condition, the AS6003-00 will automatically restore the entire loop to the normal operating state.

For the best performance, use class A configuration.

Standard Features

- Can be placed at any location on the SLC loop
- Checks the line for short circuit at power up; if the line is normal, the relay will be returned on. If a line short is detected, the relay remains open
- Indication of short circuit by a yellow LED

Technical Specifications

Supply Voltage (S - SC)	33 - 41 VDC
Average Current Consumption	270µA Standby 10mA Active Short Condition
Visual LED indicator (Yellow)	Normal: OFF Active: ON
SCI on Resistance	40 Ohm Max (Normal Condition)
SCI Fault Detection Threshold	12 Volts (Typical)
SCI Isolation Current (Short Circuit Condition)	10mA (Typical)
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Maximum Humidity	Up to 90% non-condensing
Dimensions	4.2"(W) x 4.7"(H) x 1.4"(D)
Mounting	4" Square Electrical Box

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, the Avenger AS6003-00 short circuit isolator. The modules shall be UL listed compatible with the Digital Communications Protocol (DCP) supporting control panel loops. The isolator module must be suitable for mounting in a standard 4" square electrical box or double gang. The isolator module must provide a yellow LED for indication of status.

AS9000-00

HANDHELD PROGRAMMER



Standard Features

- Compact Unit
- Easy to use
- Provides address setting and reading
- Can be used on both sensors and modules
- Has the diagnostic ability to display the analog value
- Over 8000 address settings from one battery

Technical Specifications

Battery	9VDC
Weight	0.34 lbs.
Length	6.25"
Color	White

Display Messages

	On upon power up (battery check).
bAt	(when battery is low. Low battery good for up to 3,000 address setting operation)
E0	Attempting to set an address beyond 127
E1	Attempting to program an address with no device connected
E2	Cannot find device after power up
E3	Invalid sensor response
E4	Cannot find the device program
E5	Device read error
E6	Fail during analog value reading

Application

The Hand Held Programmer is designed for use with all analog sensors and modules.

Operation

Address Setting:

1. Install sensor onto programmer, ensuring that sensor protrusions align with programmer grooves.
2. Press the left gray button to switch programmer on. A battery check message will appear followed by the device's address (Un-programmed sensors will read address 127).
3. Set the required address by incrementing the left and right gray buttons (the display will show three red flashing dots if the address being programmed is different from the device's current address).
4. When the desired address is present, press the blue button to store that address. The three red dots on the display will no longer be present.

Programming Buttons:

1. Left Gray Button: Power on. Automatically reads the address of a sensor. Subsequent operations will advance the device address by ten.
2. Right Gray Button: Power off. Advances the device address by one.
3. Red (newer models will be Blue) Button: Stores the displayed address to the device and is used to read sensor analog levels.

Testing a Sensor

1. Install the sensor and power up programmer.
2. Press the Red / Blue button. An "A" will appear on the display followed by the analog value. The value will be continuously updated for three minutes
3. The photoelectric sensor should have a value displayed of between 56- 63. The ionization sensor should have a value displayed of between 52-73. Values out of these ranges indicate that the sensor chamber has become contaminated.



RELEASING FIRE CONTROL PANEL



Ordering Codes

AS1810-10	Supreme XT - 3 Detection Zones - Red - 120VAC
AS1810-11	Supreme XT - 3 Detection Zones - Red - 240VAC
AS1810-40	Supreme XT - 3 Detection Zones - Gray - 120VAC
AS1810-41	Supreme XT - 3 Detection Zones - Gray - 240VAC

Product Overview

Designed and manufactured to the highest standards in a quality controlled environment, the Supreme XT releasing panel offers outstanding value and performance for all small to medium fixed firefighting installations.

With three detection zones as standard, release can be configured to activate from any combination of detection zone inputs to allow (among other combinations) any two from three type activations such as would be required for detection in ceiling void, room and floor void applications.

The extensive configuration options of the Supreme XT allow the functionality of the system to be extensively modified.

The panel contains a large LED display to enable easy configuration and control which also displays the time remaining until release for added user safety

The countdown timer is duplicated on up to seven remote status units to provide local indication of the system status.

With all of the electronics mounted on a single, easily removable, steel plate Supreme XT panels are both robust and easy to install.

Supreme XT is supplied in an enclosure that matches the design and color of the Supreme CP range and is available in standard red or optional gray.

Standard Features

- UL 864 Listed
- Three detection zones as standard
- Any single zone or any combinations of zones can be configured to release
- Configurable first stage NAC delays
- Configurable detection delays
- Zero time delay upon manual release option
- Non-latching zone input option to receive signals from other systems such as aspirating equipment
- Configurable releasing delays up to 60 seconds in 5 second steps
- Configurable releasing duration up to 5 minutes in 5 second steps
- Countdown timer shows time remaining until release
- Supports up to seven, four wire status indicators
- Built in Extract Fan control
- Compatible with conventional detectors from Avenger Systems, Apollo, Hochiki America, and System Sensor

Technical Specifications

AC Supply	120V or 240V
AC Supply Fuse	3.15A (F3.15A L250V)
Finish	Epoxy powder coated
Color	Red (optional gray)
IP Rating	IP30
Power Supply Rating	3 Amps total including battery charge 28V \pm 2V
Maximum Ripple Voltage	200 millivolts
Battery Type	Two 12 Volt 7Ah sealed lead acid in series
Battery Charge Voltage	27.6VDC nominal (temperature-compensated)
Battery Charge Current	0.7A maximum
Battery Fuse	20mm, 3.15A glass Sloblow
Maximum Current Draw from Batteries	3A
Quiescent Current of Panel in Power Failure	0.095A
AUX 24V Output	Fused at 500mA with electronic fuse
NAC Outputs	24V Fused at 500mA with electronic fuse
Trouble Relay Contact Rating	30VDC 1A Amp maximum
Fire Relay Contact Rating	30VDC 1A Amp maximum
Local Fire Relay Contact Rating	30VDC 1A Amp maximum
First Stage Contact Rating	30VDC 1A Amp maximum
Second Stage Contact Rating	30VDC 1A Amp maximum
Extract Contact Rating	30VDC 1A Amp maximum
Zone Quiescent Current	2mA maximum
Terminal Capacity	12 AWG
No. of detectors per zone	Dependent on type (maximum 32)
Detection circuit end of line	6K8 5% ½ Watt resistor
Supervised input end of line	6K8 5% ½ Watt resistor
Extinguishant output EOL	1N4004 Diode
No. of detection circuits	3
No. of sounder circuits	2 x 1st Stage, 1 x 2nd Stage
Extinguishant release output	Rated at 1 Amp
Extinguishant release delay	Adjustable 0 to 60 seconds (in 5 second steps)
Extinguishant release duration	Adjustable 60 to 300 seconds (in 5 second steps)
Normal Zone Impedance (EOL)	6.8K
Detector Alarm Impedance	470 Ohms
Pull Station Alarm Impedance	270 Ohms
Short circuit threshold	Short circuit Impedance 99 Ohms
Supervised Inputs Normal Impedance (EOL)	6.8K
Supervised Inputs Alarm Impedance	470 Ohms
Supervised inputs Short circuit threshold	99 Ohms
Status unit/Ancillary board connection	Two wire RS485 connection
Status unit power output	Rated at 500mA with electronic fuse

Programmable Functions

Access Level 2

- Test Zones 1 to 3
- Disable Zones 1 to 3
- Disable 1st Stage Alarms
- Disable Pre-activated 1st Stage Relay
- Disable Pre-activated 2nd Stage Relay
- Disable Extract Fan Output
- Disable Manual Release Input
- Disable Releasing Sub System
- Activate Extract Fan Output
- Activate Alarm Delays

Access Level 3

- Sounder Delay
- Coincidence Detection
- Disable Panel Features
- Zone Alarm Delays (Detectors)
- Zone Alarm Delay (Call stations)
- Configure Zone for I.S Barrier Use
- Zone Short Circuit Alarm
- Zone Non Latching
- Zone Inputs Delay
- Extinguishant Release Time Delay
- Extinguishant Release Duration Timer
- Extinguishant Reset Delay Timer

XT+

MULTI-AREA ADDRESSABLE RELEASING CONTROL UNITS



Standard Features

- UL 864 10th Edition Listed
- Up to 2 releasing areas / hazards per XT+ unit
- Dual releasing outputs for each area (configurable as Main/Reserve)
- First and second stage NAC outputs for each area
- First and second stage volt free changeover relays for each area
- Released volt-free relay per area
- Trouble volt-free relay per area
- Programmable releasing delays
- Programmable output duration
- Countdown indicator shows time until release in seconds
- Mode select and manual release controls per area
- Monitored remote manual release input
- Monitored remote abort input
- Monitored remote mode select input
- Monitored remote released pressure switch input
- Serial connections for status units and ancillary boards
- Built in Extract Fan control
- Compatible with conventional detectors from

Ordering Codes

AS1711-10	XT+ Single Area Control Unit - 1 Area - Red
AS1711-40	XT+ Single Area Control Unit - 1 Area - Gray
AS1712-10	XT+ Single Area Control Unit - 2 Areas - Red
AS1712-40	XT+ Single Area Control Unit - 2 Areas - Gray

Product Overview

XT+ releasing control units are multi-area releasing control units containing one or two releasing modules complying with UL 864 10th edition.

Up to 15 releasing modules may be connected to a Supreme-RS fire alarm control panel. Each releasing module can accommodate a separate hazard defined by two specific zones.

Each XT+ unit is equipped with a 5.25 A power supply (120 VAC or 240 VAC) to power releasing modules and attached solenoids / actuators or sequential activators.

Each releasing module has a comprehensive set of inputs and outputs and is configurable via a simple programming interface provided by Loop Explorer 2. Each releasing module may have up to 7 serially-connected status units or ancillary relay boards.



Technical Specifications

Construction	1.2mm mild sheet steel
Dimensions	14.5"W x 18.9"H x 4.25" D
IP Rating	IP30
Finish	Epoxy powder coated
Color	Lid & Box: Gray - BS 00 A 05 or Red - RAL 3002 Fascia: RAL7016
Weight	17.6 lbs (Standard Configuration)
Cabling	FP200 or equivalent (max capacitance 1uF max inductance 1 mH). Connect 18 to 14 AWG wiring for all field terminations except AC input. Connect 14 AWG wiring for line, neutral, and ground terminations of the AC input.
Power Supply	1.83 Amps Max @ 120 V, 50/60 Hz 0.915 Amps Max @ 240 V, 50/60 Hz
Power Supply Fuse	3A (field-replaceable)
Power Supply Rating	1 and 2 Area Units: Regulated 24V DC @ 4A
Maximum Ripple Current	1V Maximum
Standby Battery Type	Two 12 VDC, valve-regulated lead acid
Battery Size	Recommended battery size is 12 Ah for a typical configuration. Required battery size is mainly dependent on standby current. To determine the most appropriate battery size, use the battery calculator in LE2.
Battery Charge Voltage	27.6VDC nominal (temperature compensated)
Battery Fuse	10A 3AG (field-replaceable)
Current Draw in Power Fail Condition	54mA per releasing module
Max Current Draw from Batteries	4A
Ground Fault Impedance Value	100 Ohms
Temperature Range	32°F (0°C) - 120°F (49°C)
Relative Humidity	up to 93%, non-condensing
Releasing Delay	Adjustable 0 to 60 seconds (+/- 10%)
Releasing Duration	Adjustable 60 to 300 seconds
Fire Alarm Control Panel	Elite RS with Firmware Version 07.002.005 or higher
TOP TERMINALS	
24V Power	24V Regulated, continuous (power input)
Aux 24V	24V Regulated @360mA Max, Power-limited
Trouble 1st Stage 2nd Stage 3rd Stage (Released) Supervisory / Abort / Extract	Volt-free contact rated at 30V DC, 1A, Resistive
3rd Stage Alarm 2nd Stage Alarm	24V Regulated @ 850mA Max, Power-limited
Exting. 1 (Main) Exting. 2 (Reserve)	24V Regulated @ 1A Max, Power-limited
BOTTOM TERMINALS	
Man. Release / Abort / Disablement Switch / Mode / Releasing Pressure Switch / Low Pressure Switch	Class B Supervised for opens, shorts, and grounds End-of-Line device: 6.8K Ohm resistor (S2027) Activation device: 470 Ohm resistor (S2051) Maximum Voltage / Current: 24V DC / 50 mA Maximum Wiring Impedance for Each Circuit: 50 Ohms Power-limited
CIE Serial	Two wire, RS485 connection, Data 3.3 V, current-limited, Class B, supervised Maximum Line Impedance: 120 Ohms
Status Serial	Two wire, RS485 connection, Data 3.3 V, current-limited, Class B, supervised Maximum Line Impedance: 120 Ohms
Status Pow.	24V Regulated @ 360mA Max, Power-limited

RELEASING SYSTEM PERIPHERALS

STATUS INDICATORS, ANCILLARY PCB, ABORT SWITCH, DISABLEMENT SWITCH



Status Indicators
VF1821-13



Abort Switch
VF1823-10



Disablement Switch
VF1823-10



Ancillary PCB
VF1822-X0

Standard Features

Supreme Status Indicators

- High brightness LEDs
- Detailed indication of the status of the control panel
- Supervised data connection
- Countdown timer shows time remaining until release
- Manual only and Automatic & Manual mode select keyswitch option
- Four wire connection (data and power)
- Robust, high quality enclosure
- Easy access to terminals
- Remote Abort input (supervised)
- Internal trouble diagnosis indicators

Ancillary PCB

- Two wire serial connection
- Up to 7 per system
- Volt free relay outputs for fire and releasing system status
- Relay operated LED indicators

Disablement Switch

- Key removable in either position
- Both sides of solenoid circuit are mechanically disabled during activation
- 54 Disablement illuminated at panel when active

Ordering Codes

VF1821-11	6 lamp status indicator surface mount - red
VF1821-41	6 lamp status indicator surface mount - gray
VF1821-12	6 lamp status indicator flush mount - red
VF1821-42	6 lamp status indicator flush mount - gray
VF1821-13	6 lamp status indicator w/ mode select keyswitch surface mount - red
VF1821-43	6 lamp status indicator w/ mode select keyswitch surface mount - gray
VF1821-14	6 lamp status indicator w/ mode select keyswitch flush mount - red
VF1821-44	6 lamp status indicator w/ mode select keyswitch flush mount - gray
VF1822-00	Supreme Ancillary Board
VF1822-10	Supreme Ancillary Board with cabinet - red
VF1822-40	Supreme Ancillary Board with cabinet - gray
VF1823-10	Supreme Extinguishing Abort switch surface mount - red
VF1823-40	Supreme Extinguishing Abort switch surface mount - gray
VF1832-10/-40	Disablement Switch (red/ gray)



Product Overview

Supreme Status Indicators

The Supreme Status Indicators range of status indicators provide detailed status information for Supreme XT releasing control equipment.

All models provide high brightness, LED indication of Manual Only, Automatic and Manual, Abort operated, Disabled, Imminent and Released conditions.

For systems where local control of the Automatic/Manual mode control are required, units are available with these controls fitted. All models have supervised inputs for the remote connection of abort switches. All units contain a large, LED display which shows a countdown of the time remaining until release in seconds.

Ancillary PCB

The Supreme XT Ancillary Board is compatible with all Supreme XT control panels. The board provides volt free normally open contacts allowing control of sub-systems and plant remotely from the main panel over a two wire data bus. Ancillary boards require only a two core data cable from the main control panel and a two core power cable from the main panel.

Up to 7 Ancillary boards can be connected to a control panel and each is allocated an address from 1 to 7 using a binary coded DIL switch. The total length of the data cable from the main panel to the last Ancillary board must not exceed 4000 feet.

A mixture of status units and Ancillary boards, up to a maximum of 7 of each type, can be connected to the serial data bus.

Abort Switch

The Supreme Abort switch connects to the Abort terminals of the Supreme XT releasing panel. Any number of Supreme Abort switches may be connected to the circuit. The last switch must have the end of line device from the Abort circuit terminals of the Supreme XT releasing panel fitted across its connections to provide open and short circuit supervision.

The unit is supplied mounted to a rugged steel enclosure but may also be flush mounted to a single gang electrical box.

Ancillary PCB Technical Specifications

Size	6.1" (W) x 5.35" (H)
Size with Box	15.1" (W) x 12.2" (H) x 3.54" (D)
Construction (Boxed)	18 AWG mild steel
Supply Voltage	20-30 VDC
Contact Ratings	30VDC - 1A
Cable Capacity	12 AWG
Operating Temperature	22°F - 122°F
Operating Humidity	up to 95%, non-condensing

Abort Switch Technical Specifications

Size	3.81" (W) x 3.81" (H) x 2.32" (D)
Color	Standard red or gray
Switch Rating	1A at 30V
Trigger Resistor	470ohm 1W
End-of-Line Resistor	6K8 1/2 W

Status Indicator Technical Specifications

Size	7.3" (W) x 5.2" (H) x 1.9" (D)
Power Supply	21 to 30 V
Maximum Current Draw	0.07A
Maximum Number of Status Units	7
Quiescent Current	0.033A
Cable Capacity	12 AWG
Supervised Inputs End-of-Line Resistor	6K8 ohm 0.5W Resistor
Supervised Inputs Normal Impedance	6.8K ohm
Supervised Inputs Trigger Impedance	470 ohm
Supervised Inputs Short Circuit Threshold	99 Ohms to 0 Ohms
Data connection	Two wire RS485 connection (max 4000 feet)

SUPREME CP

CONVENTIONAL FIRE CONTROL PANELS



**MADE IN
BRITAIN**



Ordering Codes

AS1842-10/11	Supreme CP - 2 Zones - Red - 120VAC / 240 VAC
AS1842-40/41	Supreme CP - 2 Zones - Gray - 120VAC / 240 VAC
AS1844-10/11	Supreme CP - 4 Zones - Red - 120VAC / 240 VAC
AS1844-40/41	Supreme CP - 4 Zones - Gray - 120VAC / 240 VAC
AS1848-10/11	Supreme CP - 8 Zones - Red - 120VAC / 240 VAC
AS1848-40/41	Supreme CP with Dialer - 8 Zones - Gray - 120VAC / 240 VAC
AS1852-10/11	Supreme CP with Dialer - 2 Zones - Red - 120VAC / 240 VAC
AS1852-40/41	Supreme CP with Dialer - 2 Zones - Gray - 120VAC / 240 VAC
AS1854-10/11	Supreme CP with Dialer - 4 Zones - Red - 120VAC / 240 VAC
AS1854-40/41	Supreme CP with Dialer - 4 Zones - Gray - 120VAC / 240 VAC
AS1858-10/11	Supreme CP with Dialer - 8 Zones - Red - 120VAC / 240 VAC
AS1858-40/41	Supreme CP with Dialer - 8 Zones - Gray - 120VAC / 240 VAC
AS1850-00	8 Reporting Zone DACT
AS1841-00	DACT Configuration Software

Standard Features

- UL864 approved
- Two, four, or eight initiating circuits
- Initiating circuits individually configurable as Fire, or Supervisory
- Two 2.5A Notification Appliance Circuits
- 4.0 Amps total NAC power available
- Selectable NAC sync protocols
- 5 Amp power supply
- Alarm verification selectable by zone
- Resettable AUX power output rated at 0.3A
- AUX power configurable to power off or on
- Fire condition
- Fire, Trouble and Supervisory relays
- Single person walk test function
- Many advanced configuration options
- 24 hour standby with 7Ah batteries
- Maximum battery size 12Ah
- Optional DACT (SIA or Contact ID allowing user definable reporting codes)

Product Overview

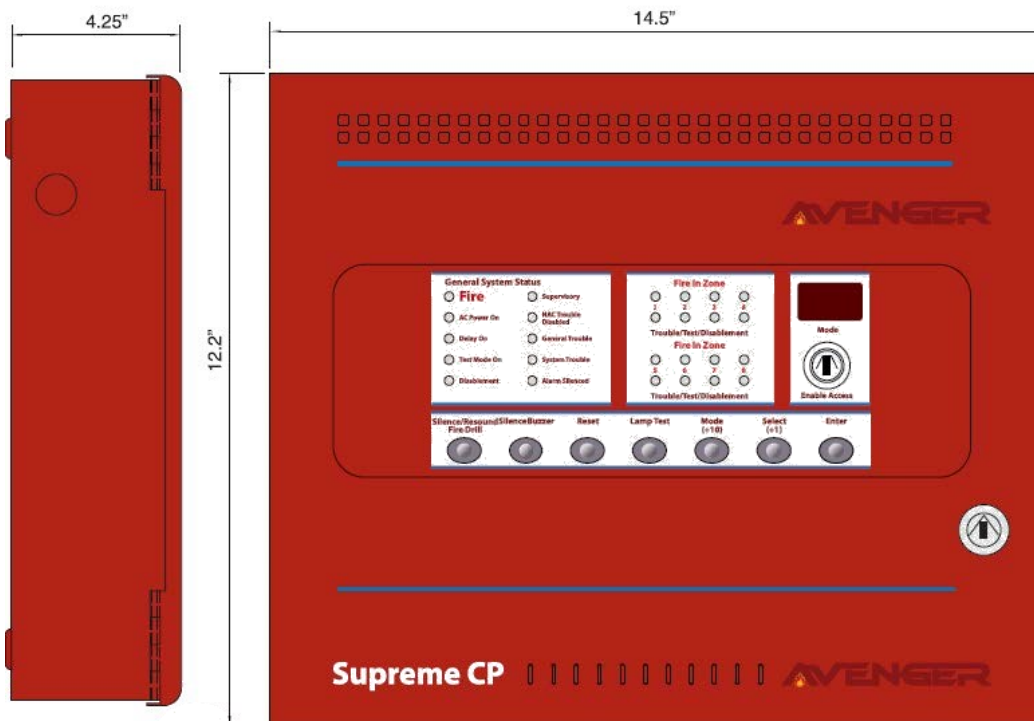
The Supreme CP range of conventional fire control panels with optional built in communicator are available with 2, 4, or 8 initiating circuits which may be extensively configured via a simple front panel operated programming method.

The low standby power requirements and cost effective small batteries allow the panel to be mounted in a small discrete enclosure which is available in standard red or optionally in an attractive gray color. A simple programming method using just 3 front panel buttons allows an extensive list of configuration options to be set and reviewed. Single board construction which allows easy removal of all electronic parts and ample provision of cable entry knockouts simplify installation.

4 Amp notification appliance power and built in selectable sync protocols provide ample power and control for a wide range of standard notification appliances. The optional DACT allows dual line reporting to central stations and provides a 500 event history buffer.

Technical Specifications

Size	14.5"(W) x 12.2"(H) x 4.25"(D)
Construction	18AWG mild steel
Finish	Epoxy powder coated
Color	Red / Gray
Supply Voltage	120VAC or 240VAC
AC Supply Fuse	5A 250V 20mm
Power Supply DC Rating	24V 5A
Maximum Battery Size	12Ah 12V (2 per panel)
Trouble Contact Rating	30V DC 1A
Supervisory Contact Rating	30V DC 1A
Fire Contact Rating	30V DC 1A
NAC Rating	2.5A per circuit 4A Total
Detection Zone Current	1.6mA
Detection Zone EOL Resistor	6k8 5%
NAC EOL Resistor	10k 5%
Cable Capacity	14 AWG
Operating Temperature	23°F - 122°F
Operating Humidity	up to 95%, non-condensing



SUPREME CP ANNUNCIATORS

SERIAL ANNUNCIATORS FOR SUPREME CP PANELS



Standard Features

- UL 864 Approved
- Red or Gray
- Available for 2, 4, or 8 zone models
- Fire, Trouble, and Supervisory annunciation
- Internal Buzzer
- Internal Trouble diagnosis indicators
- Easy access to terminals
- Four wire connection (data and power)
- Supervised data connection
- Up to 7 annunciators per systems
- Compatible with flush mount collar (AS1821-X0)

Product Overview

The Supreme CP Annunciator provides remote status indications of the Supreme CP Fire Control Panel for fire, trouble and supervisory conditions. Status indications of the annunciator are reported for 2, 4 or 8 zones. Zone LED indicators and Status LED indicators are synchronized to light at identical rates.

The Supreme CP Annunciator includes an internal sounder and an automatic control for adjusting the lamp intensity of the Power and Trouble LEDs on the fascia of the unit.

The annunciator provides connections for 24 VDC power and RS 485 communication. The RS 485 Bus supports maximum of 7 Supreme CP Annunciators. The Supreme CP Annunciator includes a dip switch for addressing and an End Of Line Resistor (EOLR). LEDs are included inside the annunciator for monitoring heart beat, error, transmit and receive conditions. The fascia and back- box of the Supreme CP Annunciator is provided in colors of gray or red. The user can write specific zone description on the labels to the right of the zone LEDs.

Technical Specifications

Size	7 1/3"(W) x 5 1/5"(H) x 2 1/5"(D)
Construction	18AWG mild steel
Finish	Epoxy powder coated
Color	Red (optional gray)
Weight	2 lbs.
Input Voltage	24VDC
Alarm Current	40mA max @ 24 VDC
Standby Current	14mA max @ 24 VDC
Maximum Number of Units	Maximum of 7 Annunciators on the AUX 24V output and the RS-485 Serial Bus
Connector Terminals	14 - 24 AWG
RS-485 Serial Bus	RS485 two-wire Maximum distance from control panel - 3900 feet (1200 meters) Belden 9271 cable
Operating Temperature	32°F - 120°F
Operating Humidity	up to 93%, non-condensing

Ordering Codes

AS1885-12	Supreme CP Annunciator - 2 Zones - Red
AS1885-42	Supreme CP Annunciator - 2 Zones - Gray
AS1885-14	Supreme CP Annunciator - 4 Zones - Red
AS1885-44	Supreme CP Annunciator - 4 Zones - Gray
AS1885-18	Supreme CP Annunciator - 8 Zones - Red
AS1885-48	Supreme CP Annunciator - 8 Zones - Gray



CONVENTIONAL MANUAL PULL STATIONS

MANUAL PULL STATIONS FOR FIRE & RELEASING APPLICATIONS



AS3046-10



AS3048-10



AS3051-10



AS3045-50

Standard Features

- Single or Dual Action Models
- Rugged die-cast aluminum housing and backbox
- Corrosion-resistant construction
- Enclosed switch with glass rod (included)
- 10 Amps @ 120 VAC Snap Action Switch
- Lift and Latching pull-down lever (Dual Action Models)
- Weatherproof versions available
- Made in USA

Product Overview

Avenger Conventional Manual Pull Stations available in a number of configurations supporting Fire Alarm & Fire Suppression Systems. Each model is constructed of a solid die cast housing and comes in glossy red. The back switch plate is plated steel. The electrical switch is rated for 10 Amps @ 120 VDC normally open contact rating. Most models are connected via terminal block connections (see ordering codes).

Engineering Specifications

The Dealer shall furnish and install where indicated on the plan, Avenger Non-Coded Manual Pull Station, Avenger part number AS30XY-UV depending on customer or designer requirements. (See part Numbers).



Technical Specifications

Material	Solid Die Cast Housing
Contact Rating	10A @ 120VAC
Operating Temperature	-30°F (-35 °C) ~ 150°F (66°C)

Ordering Codes

AS3045-10	Conventional Pull Station for Fire Suppression Release - Red SPST
AS3045-16	Conventional Pull Station for Fire Suppression Release - Red DPST
AS3045-50	Conventional Pull Station for Fire Suppression Release - Yellow SPST
AS3045-56	Conventional Pull Station for Fire Suppression Release - Yellow DPST
AS3046-10	Conventional Pull Station, Single Action, Red, Hex Key SPST
AS3046-16	Conventional Pull Station, Single Action, Red, Hex Key DPST
AS3048-10	Conventional Pull Station, Single Action, Red, Cat 30 Key SPST
AS3048-16	Conventional Pull Station, Single Action, Red, Cat 30 Key DPST
AS3049-10	Conventional Pull Station, Dual Action, Red, Hex Key SPST
AS3049-16	Conventional Pull Station, Dual Action, Red, Hex Key DPST
AS3051-10	Conventional Pull Station, Dual Action, Red, Cat 30 Key SPST
AS3051-16	Conventional Pull Station, Dual Action, Red, Cat 30 Key DPST
AS3052-10	Conventional Pull Station, Single Action, Weatherproof, Red, Hex Key SPST, Pig Tails
AS3053-10	Conventional Pull Station, Single Action, Weatherproof, Red, Cat 30 Key, SPST
AS3053-16	Conventional Pull Station, Single Action, Weatherproof, Red, Cat 30 Key, DPST
AS3054-16	Conventional Pull Station, Single Action, Explosion Proof, Red, Hex Key, DPST

AS2042-00 / AS2043-00 / AS2044-00

CONVENTIONAL PHOTOELECTRIC SMOKE DETECTORS



Standard Features

- UL Listed
- Computer-designed non-directional smoke chamber
- 360° view of detector status LED
- Low profile, 2" high (with base)
- 2 or 4 wire base compatibility.
- Highly stable operation, RF/Transient protection
- Low standby current, 59µA at 24VDC
- One built-in power/sensitivity supervision/alarm LED
- Automatic Sensitivity window verification function meets outlined requirements in NFPA 72, Chapter 2 and 7, Inspection, Testing and Maintenance

Technical Specifications

Nominal Rated Voltage	12 or 24VDC
Working Voltage	35VDC
Maximum Voltage	42VDC
Standby Current	59µA @ 24 VDC
Surge Current	160µA max @ 24 VDC
Alarm Current	40mA max @ 24 VDC
Air Velocity Range	0 - 4000FPM
Light Source	GaAlAs Infrared Emitting Diode
Case Material	Bone PC / ABS Blend
Operating Temperature	32°F - 120°F (0°C - 49°C)
Operating Humidity	up to 93%, non-condensing

Application

The AS2042 / 43 / 44 are a reliable, high quality photoelectric smoke detectors. The computer-designed smoke chamber makes the AS2042, 43 & 44 well suited for detecting smoldering fires as well as fast-flaming fires.

Operation

The AS2042 / 43 / 44 photoelectric smoke detectors utilizes one bi-colored LED for indication of status. In a normal standby condition, the LED flash Green every 3 seconds. When the detector senses that its sensitivity has drifted outside the UL listed sensitivity window the LED will flash Red every 3 seconds. When the detector senses smoke and goes into alarm the status LED will latch on Red.

The detector utilizes an infrared LED light source and silicon photo diode receiving element in the smoke chamber. In a normal standby condition, the receiving element receives no light from the pulsing LED light source. In the event of a fire, smoke enters the detector smoke chamber and light is reflected from the smoke particles to the receiving element. The light received is converted into an electronic signal.

Fire Judgment signals are processed and compared to a reference level, and when five consecutive signals exceeding the reference level are received within a specified period of time, the time delay circuit triggers the SCR switch to activate the alarm signal. The status LED light continuously during the alarm period.

Ordering Codes

AS2042-00	Conventional Photoelectric Smoke Detector with Magnetic Test Feature - Ivory Color
AS2043-00	Conventional Photoelectric Smoke Detector with Magnetic Test Feature - White Color
AS2044-00	Conventional Photoelectric Smoke Detector without Magnetic Test Feature - White Color
AS2050-00	Conventional 4" Base
AS2051-00	Conventional 6" Base



Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Avenger Fire Detectors Model AS2042, AS2043 & AS2044 photoelectric smoke detectors. The combination detector head and twist-lock base shall be UL listed compatible with a UL listed fire alarm panel. The base shall permit direct interchange with Avenger Smoke Detectors AS2042, AS2043 & AS2044 photoelectric smoke detector and AS2020, AS2021 Avenger Heat Detectors. The base shall be appropriate twist-lock base AS2050-00 or AS2051-00.

The smoke detector shall have two flashing status LEDs for visual supervision. When the detector is in standby condition, the LEDs will flash Green. When the detector is outside the UL listed sensitivity window the LEDs shall flash Red. When the detector is actuated, the flashing LEDs shall latch on Red. The detector may be reset by actuating the control panel reset switch. The sensitivity of the detector shall be capable of being measured. The sensitivity of the detector shall be monitored automatically and continually to verify that it is operating within the listed sensitivity range.

To facilitate installation, the detector shall be non-polarized. Voltage and RF transient suppression techniques shall be employed to minimize false alarm potential.

Automatic Sensitivity Test Feature

The AS2042, AS2043, and AS2044 Photoelectric Smoke Detector have a built-in automatic sensitivity test feature:

1. In normal condition, both LED's flash green.
2. When the sensitivity drifts outside of its sensitivity limits, both LED's flash red.
3. In the alarm state both LED's are red continuously.
4. When the sensitivity drifts outside of its sensitivity limits and both LED's flash red, the device needs to be cleaned or returned to the factory for cleaning or calibration.

AS2020-00 / AS2021-00

CONVENTIONAL HEAT DETECTORS (FIXED TEMP. & RATE OF RISE)



Standard Features

- Choice of fixed temperature / rate-of-rise: 135°F (AS2020-00) or 190°F (AS2021-00) heat detector
- UL Listed spacing up to 60' by 60'
- 2 or 4 wire base compatibility, relay bases available
- Highly stable operation, RF/Transient protection
- Low standby current, 35µA nominal
- Two built-in power/alarm LEDs for 360° viewing
- Fully electronic operation
- Power/alarm LEDs confirm detector status

Technical Specifications

Supply Voltage	17.7 - 30VDC (4 wires) 15 - 33VDC (2 wires)
Standby Current	40µA @ 24 VDC
Surge Current	160µA max @ 24 VDC
Alarm Current	150mA max @ 24 VDC
Contact Rating	N/O - 150mA max @ 24 VDC
Case Material	Bone PC / ABS Blend
Ambient Temperature	32°F - 120°F (0°C - 49°C)
Operating Humidity	up to 93%, non-condensing

Engineering Specifications

Automatic heat detectors where ambient temperatures do not exceed 120°F shall be the AS2020-00 fixed temperature/ rate-of-rise heat detector rated at 135°F. For areas where ambient temperatures exceed 120°F, but not 160°F, the AS2021 fixed temperature/rate-of-rise heat detector rated at 190°F shall be used. Electrical contacts shall be normally open, rated at 150mA @ 24VDC. Heat detectors shall be installed in accordance with National Fire Protection Association Standard 72, the spacing assigned by Underwriters Laboratories and in accordance with the rules and regulations set forth by the local authorities having jurisdiction.

Ordering Codes

AS2020-00	Conventional FT / ROR Heat Detector 135°F
AS2021-00	Conventional FT / ROR Heat Detector 190°F
AS2050-00	Conventional 4" Base
AS2051-00	Conventional 6" Base

62

Application

The AS2020 and AS2021 fixed temperature / rate-of-rise heat detectors are suited for installation where high heat output fires are expected or in areas where ambient conditions would not allow use of other detection methods. Heat detectors are intended for protection of property. Do not rely on heat detectors for life safety protection. Where life safety is a concern, smoke detectors must also be used. A UL listed fire alarm panel must electronically supervise the AS2020 and AS2021 heat detectors.

All conventional devices are mechanically compatible with Avenger bases. Please check individual panel listings for appropriate listed bases.

Product Overview

The AS2020 and AS2021 fixed temperature / rate-of-rise heat detectors are suited to detect in the presence of slow or fast rising temperatures due to burning combustibles.

The construction of these models incorporate a thermistor heat element protected from damage by the built-in, durable plastic guard. These electronic heat detectors incorporate two power/alarm LEDs for 360° indication of status. In standby condition the power LEDs flash Green. In an alarm condition the LEDs latch on Red. The VF2020 and VF2021 electronic heat detection circuitry performs the same function as a Mechanical Device but with Electronic Precision. If the heat rise is less than 12°/minute the detector will not alarm until it reaches its alarm temperature (135° or 190° ± 7.5°F). If the heat rise is greater than 12°/minute the detector will alarm immediately giving an early warning signal and latching the Red LEDs on.



AS2050-00 / AS2051-00

CONVENTIONAL SENSOR BASES



Standard Features

- UL Listed
- Designed for use with all Avenger analog sensors
- Available in 4 and 6 inch models
- Contains a security locking tab for tamper protection

Ordering Codes

AS2050-00	4" Conventional Sensor Base
AS2051-00	6" Conventional Sensor Base

Application

Each base is connected to an initiating circuit and provides easy replacement of sensors, without disturbing the wiring.

The bases are electronics free and contain a simple rugged design with screw terminals for wiring connections. A common mounting base allows sensor interchange and maintains zone continuity when sensors are removed. A simple anti-tamper head Locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can only be removed using a small diameter screw driver.

Operation

The AS2050 / AS2051 Series is designed specifically for use with Avenger Conventional Models VF2042/43/44 Photoelectric Smoke Detectors and AS2020 / AS2021 Fixed Temperature/Rate-of-Rise Heat Detectors. The Base is an electronics free 4 or 6" featuring a plastic tamper-lock lug. Each base is equipped with a resistor. Refer to the chart (below) for additional specifications.

Engineering Specifications

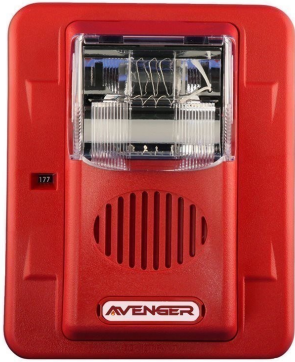
The Dealer shall furnish and install where indicated on the plans, models AS2042/43/44 Photoelectric Smoke Sensors and AS2010 Heat Sensors. The selected sensors shall be attached to the AS2050 or AS2051 base and permit direct interchange between the listed sensors.

Technical Specifications

Alarm Current	93mA (136mA max @ 33VDC)
Compatibility Identifier	HB-3
Material	Bone PC / ABS Blend

AS4000-X0 / AS4001-X0 / AS4002-X0

WALL MOUNT EVACUATION HORN, STROBE, HORN/STROBE



Standard Features

- UL 464 and UL 1971 Listed
- Nominal voltage 24VDC
- Units have field selectable candela options of 15, 30, 60, 75, and 110 candela
- Super-Slide™ Bracket - Ease of Supervision Testing
- Checkmate™ - Instant Voltage Verification
- Unit Dimensions: 5" high x 4.5" wide x 2.5" deep
- Synchronize strobe and/or horn with Avenger Series Control Module
- Lower installation and operating costs
- Input terminals 12 to 18 AWG
- Switch selection for high or low dBA
- Switch for chime, whoop, mechanical and 2400Hz tone
- Tamperproof re-entrant grill
- Switch for continuous or temporal 3 (not available on whoop tone)
- Surface mount with the AS4005 (Avenger Surface Mount Box)
- Silence horn while strobes remain flashing
- 64Wide voltage ranges 16-33VDC or FWR

Product Overview

The Avenger System Signal Series is a low profile strobe and horn/strobe combination that offers dependable audible and visual alarms and the lowest current available.

The Avenger System Series 24VDC offers tamperproof field selectable candela options of 15, 30, 60, 75, and 110 candelas.

The Avenger System Series horn offers a continuous or synch able temporal three in 2400Hz and mechanical tone, a chime and whoop tone. All tones are easy for the professional to change in the field by using switches.

The Avenger System Series has a minimal operation current and has a minimum flash rate of 1Hz regardless of input voltage.

The Avenger System Series is shipped with the standard 4" metal mounting plate which incorporates the popular Super-Slide™ feature that allows the installer to easily test for supervision. The product also features a locking mechanism which secures the product to the bracket without any screws showing.

The appliance also features the Checkmate™ - Instant Voltage Verification feature which allows the installer to check the voltage drop draw and match it to the blueprint.

The Avenger System Series appliances are UL 464 and UL 1971, listed for use with fire protective systems and are warranted for three years from date of purchase.

Ordering Codes

AS4000-10	Wall Mount Low Profile Evacuation Horn Red Faceplate
AS4000-30	Wall Mount Low Profile Evacuation Horn White Faceplate
AS4001-10	Wall Mount Low Profile Evacuation Strobe Red Faceplate
AS4001-30	Wall Mount Low Profile Evacuation Strobe White Faceplate
AS4002-10	Wall Mount Low Profile Evacuation Horn/Strobe Red Faceplate
AS4002-30	Wall Mount Low Profile Evacuation Horn/Strobe White Faceplate
AS4005-10	Indoor Surface Mount Backbox - Red
AS4005-30	Indoor Surface Mount Backbox - White
AS4008-10	Outdoor Surface Mount Backbox - Red
AS4008-30	Outdoor Surface Mount Backbox - White

Part #	Description	Reverberant dBA @ 10ft.	Anechoic Room dBA @ 10ft.	Candela Output (cd)
AS4000-X0	Wall Mount Low Profile Evacuation Horn	62-82 dBA	100 dbA	N/A
AS4001-X0	Wall Mount Low Profile Evacuation Strobe	N/A	N/A	15, 30, 60, 75, 110
AS4002-X0	Wall Mount Low Profile Evacuation Horn/Strobe	62-82 dBA	100 dbA	15, 30, 60, 75, 110

Horn Specifications

Horn Mode	Minimum dbA @ 10ft. Per UL464 (High Setting)	Minimum dbA @ 10ft. Per UL464 (Low Setting)	Max. Current Draw @ High Setting (mA)
Temp 3 2400Hz	78	71*	28
Temp 3 Mechanical	76	70*	25
Temp 3 Chime	70*	66*	15
Continuous 2400Hz	81	74*	28
Continuous Mechanical	80	72*	25
Continuous Chime	70*	66*	15
Whoop	82	69	56

* Operating the horn in this mode at this voltage will result in not meeting the minimum UL reverberant sound level required for public mode fire protection service. These settings are acceptable only for private mode fire alarm use. Use the high dBA setting for public mode application (not applicable when using the chime tone - the chime tone is always private mode).

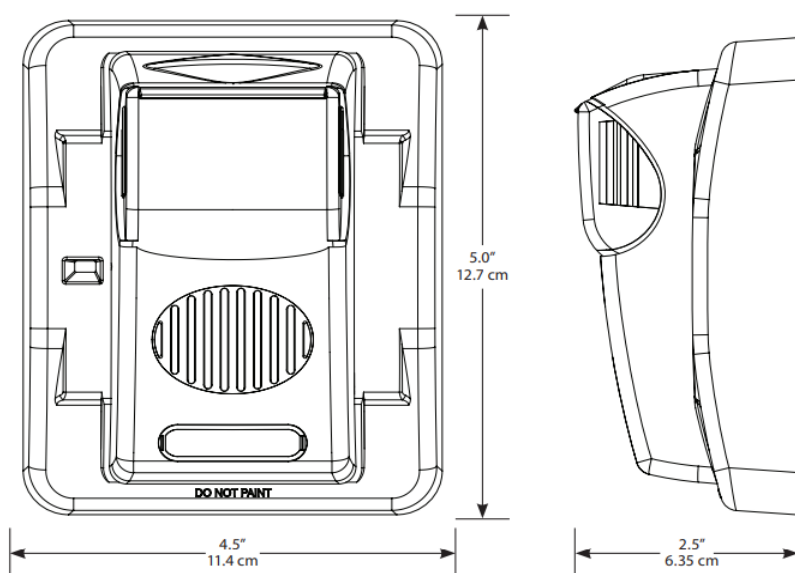
Strobe Current Rating

Candela	15cd	30cd	60cd	75cd	110cd
24VDC	30mA	42mA	66mA	80mA	103mA
UL Max¹	42mA	58mA	97mA	116mA	161mA

1: RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range 16-33VDC for 24VDC units. For strobes the UL max current is usually at the minimum listed voltage 16VDC for 24VDC units. For audible the max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation manual.

Notes:

- To obtain the horn/strobe current draw, add the strobe current draw and the horn current draw.
- Operating temperature: 32°to 120°F (0° to 49° C). The Avenger AS4000, AS4001 and AS4002 are not listed for outdoor use.
- The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating. While the horn is producing a tone in the temporal 3 modes its sound pressure is the same as the continuous mode.
- For nominal and peak current across UL regulated voltage range for filtered DC power and unfiltered (FWR [Full Wave Rectified]) power, see installation manual.
- Avenger Systems does not recommend using a coded or pulsing signaling circuit with any Avenger strobes products.



AS4003-X0 / AS4004-X0

CEILING MOUNT EVACUATION STROBE, HORN/STROBE



Standard Features

- UL 464 and UL 1971 Listed
- Nominal Voltage 24 VDC
- Tamperproof Field Selectable Candela options of 15, 30, 75, 95, 115 & 150
- Super-Slide™ Bracket - Ease of Supervision
- Testing Checkmate™ - Instant Voltage Verification
- Unit Dimensions: 6" x 2.6"
- Synchronize AS4003 Series by using Avenger Series Control Module
- Prewire Entire System, then Install Your Signals Input Terminals 12 to 18 AWG
- Switch Selection for High or Low dBA
- Switch Selection for 2400Hz or Mechanical
- Tone Switch Selection for Continuous or Temporal 3
- Tamperproof Re-entrant Grill
- Surface Mount with the Ceiling Surface Mount Box
- Silence Horn While Strobes Remain Flashing
- Wide Voltage Range 16-33 VDC or FWR
- Faceplate available in Red or Off-White

Product Overview

The AS4003/AS4004 Series is a ceiling mount strobe or horn/strobe combination that offers dependable audible and visual alarms and the lowest current available.

The AS4003/AS4004 offers tamper field selectable candela options of 15, 30, 75, 95, 115 and 150 candelas.

The AS4004 horn offers a continuous or synchable temporal three in 2400Hz or mechanical tone. These tones are easy for the professional to change in the field by using switches. The models are shipped from the factory in the temporal three alarm mode.

The Avenger AS4003/AS4004 Series has a minimal operating current and has a minimum flash rate of 1Hz regardless of input voltage.

This Series comes standard with the 4" mounting plate which incorporates the popular Super-Slide™ feature that allows the installer to easily test for supervision.

The AS4003/AS4004 Series also features the Checkmate™ - Instant Voltage Verification feature which allows the installer to check the voltage without removing the signal.

The Avenger AS4003/AS4004 Series appliances are UL 464 and UL 1971 listed for use with fire protective systems and are warranted for three years from the date of purchase.

Ordering Codes

Part #	Description	Reverberant dBA @ 10ft.	Anechoic Room dBA at 10ft.	Candela Output (cd)
AS4003-10	Ceiling Mount Strobe - Red Faceplate	N/A	N/A	15, 30, 75, 95, 115, 150
AS4003-30	Ceiling Mount Strobe - White Faceplate	N/A	N/A	15, 30, 75, 95, 115, 150
AS4004-10	Ceiling Mount Horn/Strobe - Red Faceplate	81 - 86 dBA	90 dBA	15, 30, 75, 95, 115, 150
AS4004-30	Ceiling Mount Horn/Strobe - White Faceplate	81 - 86 dBA	90 dBA	15, 30, 75, 95, 115, 150

Horn Specifications

Horn Mode	Minimum dbA @ 10ft. Per UL464 (High Setting)	Minimum dbA @ 10ft. Per UL464 (Low Setting)	Max. Current Draw @ High Setting (mA)
Temp 3 2400Hz	83	75	23
Temp 3 Mechanical	81	73*	22
Continuous 2400Hz	86	78	23
Continuous Mechanical	84	76	22

* Operating the horn in this mode at this voltage will result in not meeting the minimum UL reverberant sound level required for public mode fire protection service. These settings are acceptable only for private mode fire alarm use. Use the high dBA setting for public mode application.

Notes:

- The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating.
- While the horn is producing a tone in the temporal 3 modes its sound pressure is the same as the continuous mode.
- To obtain the horn/strobe current draw, add the strobe current draw and the horn current draw.
- 1 The listed horn current draws are for the Continuous Tone mode. The Temporal 3 Tone has a reverberant dBA @ 10ft. per UL 464 is 77-83 with a horn current draw of 34mA.
- 2 RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range 16-33VDC for 24VDC units. For strobes the UL max current is usually at the minimum listed voltage 16VDC for 24VDC units. For audible the max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation manual.

Strobe Current Rating

Candela	15cd	30cd	75cd	95cd	115cd	150cd
24VDC	97mA	101mA	143mA	148mA	201mA	205mA
UL Max¹	120mA	130mA	200mA	220mA	290mA	321mA

1: RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range 16-33VDC for 24VDC units. For strobes the UL max current is usually at the minimum listed voltage 16VDC for 24VDC units. For audible the max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation manual.

AS4029-X0 / AS4006-X0 / AS4007-X0

WALL MOUNT EVACUATION OUTDOOR HORN, STROBE, HORN/STROBE



Standard Features

- UL 464 and UL 1971 Listed
- Nominal Voltage 24VDC
- Unit Dimensions: VF4008 5.75" High x 4.75" Wide x 4.18" Deep
- To Obtain Outdoor Horn, Must Order VF4000 and VF4008 Separately
- Super-Slide™ - Ease of Supervision Testing
- Checkmate™ - Instant Voltage Verification
- Lower Installation and Operating Costs
- Switch Selection for High dBA
- Switch for Mechanical and 2400Hz Tone
- Switch for Continuous Tone
- Tamperproof Re-entrant Grill
- Wide Voltage Range 16-33 VDC or FWR
- Separate Horn and Strobe Functions
- Synchronize Strobe and/or Horn by Using VES Synchronization Control Module
- Listed for UL1638 when used with the VF4008 enclosure
- VF4008 Made of Clear Lexan - Provides Maximum Visibility and Reliability for effective Visible Signaling - Allowing Full 75cd Output
- Input Terminals 12 to 18 AWG
- Faceplate available in Red or Off-White

Product Overview

The Outdoor Avenger Series offers dependable visible and/or audible alarms for all outdoor needs. Included with the Avenger Series is the AS4008-10 outdoor enclosure. The enclosure is made of high quality Lexan material, providing protection from weather related conditions and allowing the necessary full candela output. This highly constructed enclosure meets various installation requirements including deterring moisture from entering the enclosures.

The Outdoor Series is equipped with the 4" mounting plate which incorporates the Super-Slide™ feature that allows the installer to easily test for supervision. The product also features a locking mechanism which secures the product to the bracket without any screws showing. The Avenger Series also features the Checkmate™ - Instant Voltage Verification feature which allows the installer to check the voltage without removing the signal. The Avenger Series strobe has a minimal operation current and has a minimum flash rate of 1Hz and can vary up to 2Hz regardless of input voltage.

The Avenger Outdoor Series appliances are UL 464 and UL 1638 listed for use with fire protective systems and are warranted for three years from date of purchase.

Ordering Codes

AS4006-10	Wall Mount Low Profile Evacuation Outdoor Strobe with Red Faceplate
AS4006-30	Wall Mount Low Profile Evacuation Outdoor Strobe with White Faceplate
AS4007-10	Wall Mount Low Profile Evacuation Outdoor Horn/Strobe Red Faceplate
AS4007-30	Wall Mount Low Profile Evacuation Outdoor Horn/Strobe White Faceplate
AS4008-10	Outdoor Surface Mount Backbox - Red
AS4008-30	Outdoor Surface Mount Backbox - White

Part #	Description	Reverberant dBA @ 10ft.	Anechoic Room dBA @ 10ft.	Candela Output (cd)
AS4000-X0	Wall Mount Low Profile Evacuation Horn	62-82 dBA	100 dbA	N/A
AS4006-X0	Wall Mount Low Profile Evacuation Strobe	N/A	N/A	15 /75
AS4007-X0	Wall Mount Low Profile Evacuation Horn/Strobe	62-82 dBA	100 dbA	15 /75

Horn Specifications

Horn Mode	Minimum dbA @ 10ft. Per UL464 (High Setting)	Minimum dbA @ 10ft. Per UL464 (Low Setting)	Max. Current Draw @ High Setting (mA)
Temp 3 2400Hz	78	71*	28
Temp 3 Mechanical	76	70*	25
Temp 3 Chime	70*	66*	15
Continuous 2400Hz	81	74*	28
Continuous Mechanical	80	72*	25
Continuous Chime	70*	66*	15
Whoop	82	69	56

* Operating the horn in this mode at this voltage will result in not meeting the minimum UL reverberant sound level required for public mode fire protection service. These settings are acceptable only for private mode fire alarm use. Use the high dBA setting for public mode application (not applicable when using the chime tone - the chime tone is always private mode).

Outdoor Strobe Current Rating

Candela	75cd
24VDC	112mA
UL Max¹	180mA

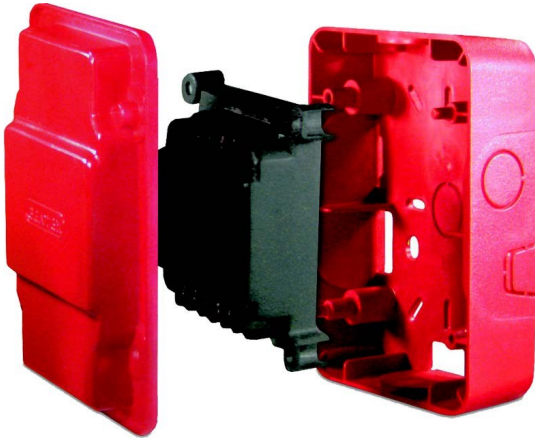
1: RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range 16-33VDC for 24VDC units. For strobes the UL max current is usually at the minimum listed voltage 16VDC for 24VDC units. For audible the max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation manual.

Notes:

- Avenger Outdoor Strobes and Horn/Strobes are listed for outdoor use.
- Indoor Operating Temperature: 32°to 120°F (0° to 49°C).
- Outdoor Operating Temperature: -31°to 150°F (-35° to 66°C).
- For nominal and peak current across UL regulated voltage range for filtered DC power and unfiltered (FWR [Full Wave Rectified]) power, see installation manual.
- The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating. While the horn is producing a tone in the temporal 3 mode its sound pressure is the same as the continuous mode. To obtain the horn/strobe current draw, add the strobe current draw and the horn current draw.
- Do not use a coded or pulsing signaling circuit with any of our strobe products

AS4009-X0

SYNCHRONIZATION CONTROL MODULE



Ordering Codes

AS4009-10	Synchronization Control Module - Red
AS4009-30	Synchronization Control Module - White

Product Overview

The AS4009 control modules are designed to provide an easy way to synchronize multiple horns as well as strobe light flashes using only two wires in instances where a synchronized flash is required.

When the module is in temporal 3 mode, it has the capability to synchronize multiple horn signals and the ability to silence the horn while allowing the strobes to continue to flash. In unison mode, the horn cannot be silenced while maintaining strobe operation.

The control module will control the power to the horns to produce the synchronized operation. The AS4009 Control Modules are warranted for three years from date of purchase.

NOTES:

The AS4009 Modules come with own back box and cover plate.

Dimensions of Module: 3.85" (H) x 3.82" (W) x 1.32" (D)

Dimensions of Box: 5.57" (H) x 4.55" (W) x 2.39" (D)

A green LED status indicator will flash once every four seconds if zone 1 is operational. The LED will flash twice every four seconds if zones 1 and 2 are operational.

Standard Features

- UL 464 and UL 1971 Listed
- Synchronize horn and strobe with the use of only two wires
- Easy to install
- Module is rated for 3 Amps
- Continuous current and 5 Amps surge or inrush current
- Synchronizes to 1Hz flash rate
- Operates 1 class 'A' Circuit or 2 Class 'B' circuits at 3 Amps per circuit
- Dual synchronization module only when using the 2 Class 'B' circuits
- A Green LED status indicator to signal operation of module
- Option to silence the horn while strobes continue to flash when using temporal 3 mode
- AS4009 operates the AS4003 / AS4004 and AS4000/ AS4001 / AS4002 Series
- Three year warranty from date of purchase

GB6-24 / GB10-24

FIRE ALARM BELLS



Standard Features

- 24 VDC
- Available in 6" or 10" housing
- High dBA output
- Mounts to a standard 4" square electrical box
- ANSI/UL listed for outdoor use when used with the GBBB back box
- 18 AWG wire leads
- Available in red metal finish

Product Overview

The GB Series provide durable and dependable operation required for life safety alarm systems.

Alarm bells are low current, high decibel notification appliances for use in fire and burglary systems or other signaling applications.

The GB Series is available in 6" or 10" housing and listed for indoor and outdoor applications. Bells must be used with the GBBB box for outdoor use.

The GB Series is ANSI/UL 464 listed and the units are warranted for 3 years from the date of purchase.

Technical Specifications

Indoor Operating	32° to 120°F (0° to 49°C)
Outdoor Operating	-31° to 150°F (-35° to 65.6°C)
Operating Temperature	-30°F (-35 °C) ~ 150°F (66°C)
Current Draw (both models)	100mA
Sound Output	GB6-24: 95dBA @ 10ft. GB10-24: 96dBA @ 10ft.

Ordering Codes

GB6-24	Fire Alarm Bell 24VDC 6" - Red
GB10-24	Wall Mount Low Profile Evacuation Horn White Faceplate
GBBB	Backbox for outdoor mounting

AVENGER SYSTEMS LLC

11586 Zagarolo Lane - Las Vegas, NV 89141 - USA

+1.520.800.5004

info@avengersystems.com

www.avengersystems.com

