



11409 58th Ave E- Puyallup, WA. 98373

FIRE ALARM SUBMITTAL DOCUMENTS

FOR

CASCADE CHRISTIAN PHASE 3

815 21st ST. SE
PUYALLUP, WA 98372



**SILENT
KNIGHT**

by Honeywell

5499 Distributed Power Module

The NAC expander that packs quite a combination punch, a whopping nine amps and built-in synchronization for appliances

The 5499 Distributed Power Module by Silent Knight is the most-powerful and cost-effective power supply available today. It delivers 9 amps of notification appliance circuit power and built-in synchronization for appliances from System Sensor®, AMSECO, Faraday, Gentex®, and Wheelock® — what you need to drive power-hungry components like ADA notification appliances. The 5499's advanced microprocessor design is years ahead of the competition. Its switch mode power supply design is up to 50% more efficient than competitive linear mode power supplies. And, ADA retrofits are easier and less expensive with the 5499 because it integrates into current systems without the costly investment in new components.

For the most sophisticated and cost-effective notification power supply available, you need the 5499. Call Silent Knight today for more information at 1-800-328-0103.

Description

The 5499 is a 9 amp notification power expander that provides its own AC power connection, battery charging circuit, and backup battery for use with fire and security controls that have 9-32 VDC outputs, such as the Silent Knight Model 5208 Fire Control/Communicator. The 5499 is the cost-effective solution for powering notification appliances required by the Americans with Disabilities Act (ADA). The 5499 has built-in ANSI cadence pattern, which can upgrade older control panels that lack cadence capability.

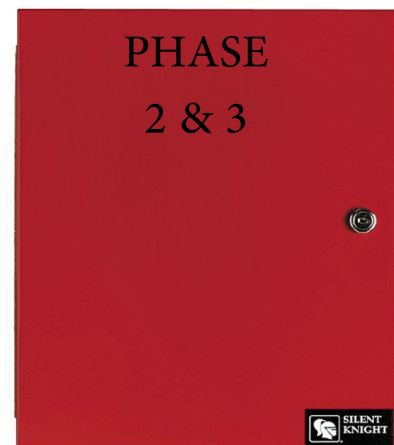
Features

- UL Listed for 9 amps of notification power
- Built-in synchronization for appliances from System Sensor®, AMSECO, Faraday, Gentex®, and Wheelock®
- Power supply's advanced switch mode design reduces damaging heat and manages power up to 50% more efficiently than other systems
- Dip switches allow for easy reconfiguration
- 24 VDC filtered output voltage
- Four power-limited notification outputs; 2 Class A (Style Z) or 4 Class B (Style Y), or 1 Class A and 2 Class B
- Additional continuous auxiliary output
- 3 amps per output circuit
- 2 inputs; 2 Class B (Style B) or 2 Class A (Style D)

- Ground fault detector/indicator
- Independent trouble relay
- AC loss delay option shuts off power to non-essential high-current accessories like magnetic door holders
- Stand alone operation.
- Lightweight design adds to ease of installation and reduces shipping costs
- Operates with most polarized, UL Listed notification devices
- ANSI Cadence pattern output capability built-in

Connection to Local Fire Control

Firepower 5499 may be connected to a local fire control which utilizes Class A or Class B type notification circuits operating between 9 and 32 VDC. The control panel's notification circuit is connected to one of the inputs on the 5499. The control panel's notification circuit end-of-line resistor is also connected across two terminals on the Firepower 5499, which provides supervision between the 5499 and the fire control panel. Polarized audible and/or visual notification devices are then connected to the 5499 signal circuits using the 4.7kW end-of-line resistors provided. Since the 5499 draws very little power from the control, it is possible to connect one Firepower 5499 to each notification circuit on the control panel and still provide full supervision of the notification circuits all the way back to the control panel.



5499

Supervision

The 5499 supervises a variety of functions including:

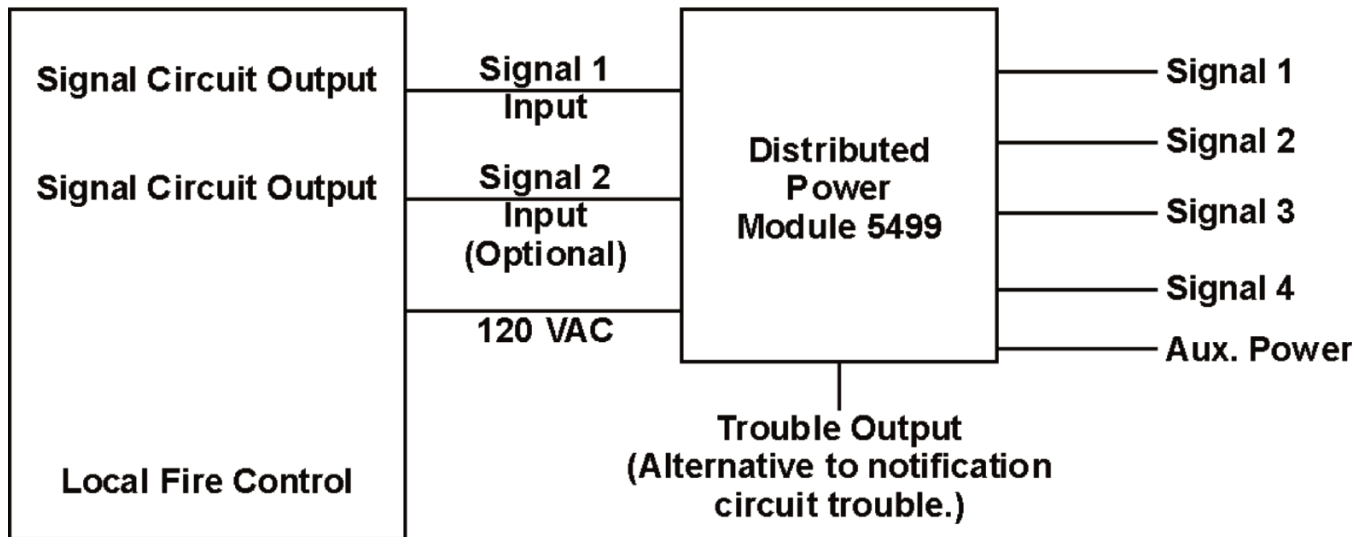
- Low AC power.
- Low battery condition.
- Earth ground fault.
- Auxiliary output power limit condition.
- EOL supervision trouble or power limited condition at an output.

When a trouble condition occurs, Firepower 5499 creates a trouble condition on the host control signal circuits to which it is connected. Firepower 5499 still maintains the ability to be activated by the host control. In addition, the 5499 provides a Form C trouble relay output as an alternative to using the notification circuit trouble.

Model 5499

Distributed Power Module

Model 5499 Block Diagram



Electrical Specifications

AC Input: 120 VAC at 3.0A

Output: 24 VDC at 9 A

Current

Standby: 75 mA

Alarm: 205 mA

Auxiliary Power Circuit: 1

Notification Circuits: 4

Output Configuration:

2 Class A (Style Z)

4 Class B (Style Y)

(1 Class A & 2 Class B)

Amps Per Output: 3.0 (9.0 amps total)

Notification Circuit Output: 20.4 to 27.3 VDC @ 3.0 amps each, 4.7 kΩ EOL resistor required on each Class B circuit

No. of Inputs: 2

Input Configuration: 2 Class B (Style Y) or 2 Class A (Style Z)

Input Voltage Range: 9 - 32 VDC

Battery charging Capacity: 35.0 AH

Mechanical Specifications

Dimensions: 12.25" W x 16" H x 3" D
30.88 cm W x 40.64 cm H x 7.62 D cm

Operating Temp:

32° to 120° F (0° to 49° C)

Humidity: 93% non-condensing max.

Indicator Lights

AC power on : Green

Battery trouble: Yellow

Ground fault: Yellow

Aux Trouble: Yellow

Output troubles (1-4): Yellow

Installation

Surface mount

Approvals

- NFPA 72
- UL Listed
- CSFM 7300-0559: 123
- MEA 429-92-E Vol. XII
- OSHPD (CA) OSP-0065-10 (see accessories)

Ordering Information

5499 Distributed Power Module

Accessories:

SK-SCK Seismic Compliance Kit



**SILENT
KNIGHT**

by Honeywell

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact Silent Knight 7550 Meridian Circle Suite 100, Maple Grove, Mn 55369-4927. Phone: (800) 328-0103 or (203) 484-7161, Fax: (203) 484-7118. For Technical Support, Please call 800-446-6444. www.silentknight.com

MADE IN AMERICA

FORM# 350396 Rev F

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Indoor Selectable-Output Speaker Strobes and Dual Voltage Evacuation Speakers for Ceiling Applications

System Sensor L-Series selectable-output speaker strobes and dual-voltage evacuation speakers can reduce ground faults and enable faster installation with lower current draw and modern aesthetics.

Features

- Plug-in design and protective cover reduce ground faults
- Universal mounting plate with an onboard shorting spring tests wiring continuity before installation
- No extension ring required
- Field selectable candela settings on ceiling units: 15, 30, 75, 95, 115, 150, and 177
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Rotary switch simplifies field selection of speaker voltage (25 and 70.7 Vrms) and power settings (¼, ½, 1 and 2 watts)
- Speakers offer high fidelity and high volume sound output
- 520 Hz capable with compatible FACP
- Compatible with System Sensor synchronization protocol
- Electrical compatibility with existing SpectrAlert and SpectrAlert Advance products
- Tamper-resistant construction
- Updated modern aesthetics

Agency Listings



7320-1653:0505



System Sensor L-Series of speakers and speaker strobes reduce costly ground faults using a plug-in design and universal mounting plate that allow the installer to pre-wire mounting plates, dress the wires, and confirm wiring continuity before plugging in the speakers. In addition, a protective plastic cover prevents nicked wires by covering exposed speaker components.

These devices also enable faster installations by providing instant feedback to ensure that wiring is properly connected, rotary switches to select voltage and power settings, and 7 field-selectable candela settings for both wall and ceiling speaker strobes.

The low total harmonic distortion of the SP speaker offers high fidelity sound output while still offering high volume sound output for use in high ambient noise applications.

L-Series makes installation easy

- Attach a universal mounting plate to a 4 × 4 × 21/8 inch back box. Flush-mount applications do not require an extension ring.
- Connect the notification appliance circuit or speaker wiring to the terminals on the mounting plate.
- Attach the speaker or speaker strobe to the mounting plate by inserting the product tabs into the mounting plate grooves. Hinge the device into position to lock the product pins into the mounting plate terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

L-Series Speaker and Speaker Strobe Specifications

Architectural/Engineering Specifications

General

L-Series speaker and speaker strobes shall mount to a 4 × 4 × 21/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate. Also, L-Series speaker strobes, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between 8.5 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series products shall operate between 32°F and 120°F from a regulated DC, or full-wave rectified, unfiltered power supply. Speaker strobes shall have field-selectable candela settings including 15, 30, 75, 95, 115, 150, 177.

Speaker

The speaker shall be a System Sensor L-Series model _____ dual-voltage transformer speaker capable of operating at 25.0 or 70.7 nominal Vrms. It should be listed to UL 1480 and shall be approved for fire protective service. The speaker shall have a frequency range of 400 to 4,000 Hz and shall have an operating temperature between 32°F and 120°F. The speaker shall have power taps and voltage that are selected by rotary switches.

Speaker Strobe combination

The speaker strobe shall be a System Sensor L-Series model _____ listed to UL1480 and UL 1971 and be approved for fire protective signaling systems. The speaker shall be capable of operating at 25.0 or 70.7 nominal Vrms selected via rotary switch, and shall have a frequency range of 400 to 4,000 Hz. The speaker shall have power taps that are selected by rotary switch. The strobe shall comply with the NFPA 72 requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

Synchronization Module

The module shall be a System Sensor Sync•Circuit model MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz. The module shall mount to a 411/16 × 411/16 × 21/8-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical Specifications

Operating Temperature	32°F to 120°F (0°C to 49°C)	
Humidity Range	10 to 93% non-condensing	
Dimensions, Ceiling-Mount	Diameter	Depth
SPC Speaker	6.8 in, 173 mm	1.0 in, 25 mm
With Surface Mount Back Box	6.9 in, 176 mm	3.5 in, 89 mm
SPSC Speaker Strobe	6.8 in, 173 mm	2.8 in, 73 mm
With Surface Mount Back Box	6.9 in, 176 mm	5.37 in, 136 mm

Electrical/Operating Specifications

Nominal Voltage (speakers)	25 Volts or 70.7 Volts (nominal)
Maximum Supervisory Voltage (speakers)	50 VDC
Strobe Flash Rate	1 flash per second
Nominal Voltage (strobes)	Regulated 12 VDC or regulated 24 VDC/FWR ^{1,2}
Operating Voltage Range (includes fire alarm panels with built in sync)	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Operating Voltage with MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Frequency Range	400 to 4,000 Hz ³
Power	¼, ½, 1, 2 watts

1. Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.

2. Strobe products will operate at 12 V nominal only for 15 and 30 cd.

3. 520Hz capable with compatible FACP.

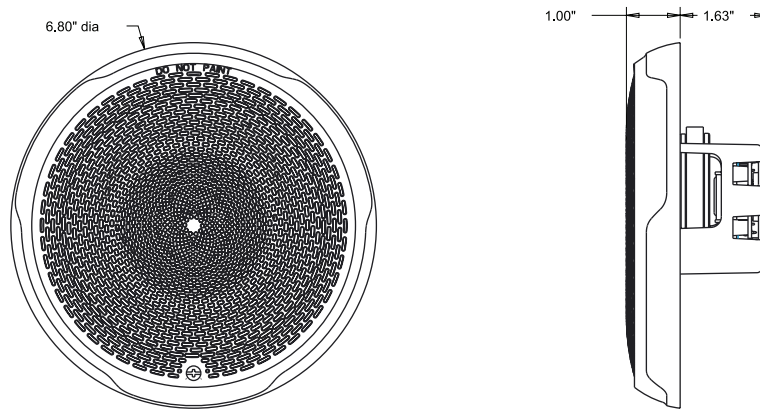
UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)			
	8 to 17.5 Volts	16 to 33 Volts	
Candela	DC	DC	FWR
15	87	41	60
30	153	63	86
75	NA	111	142
95	NA	134	164
115	NA	158	191
150	NA	189	228
177	NA	226	264

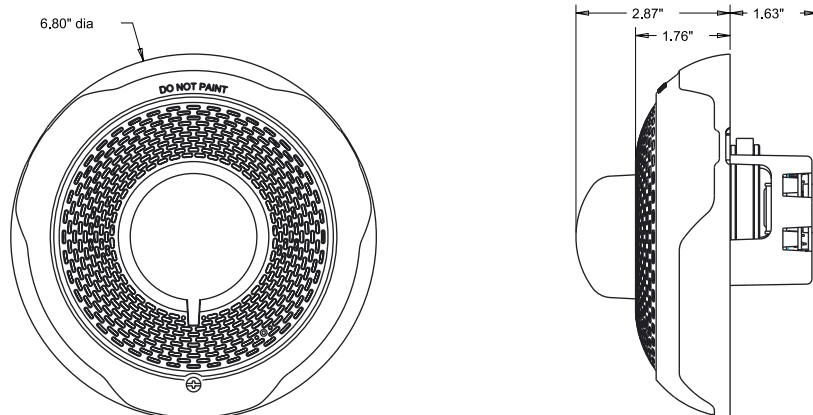
Ceiling-Mount Speaker Sound Output		
Setting	UL Reverberant (dBA @ 10 ft)	UL Anechoic (dBA @ 10 ft)
1/4 W	79	79
1/2 W	82	82
1 W	85	85
2 W	88	88

Ceiling-Mount Speaker Strobe Sound Output		
Setting	UL Reverberant (dBA @ 10 ft)	UL Anechoic (dBA @ 10 ft)
1/4 W	77	77
1/2 W	80	80
1 W	83	83
2 W	86	86

L-Series Dimensions

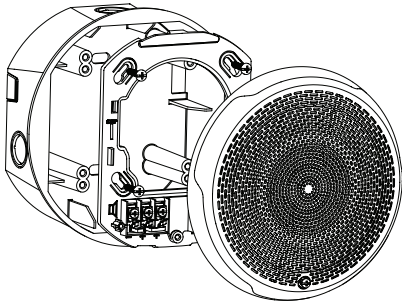


Ceiling Speaker

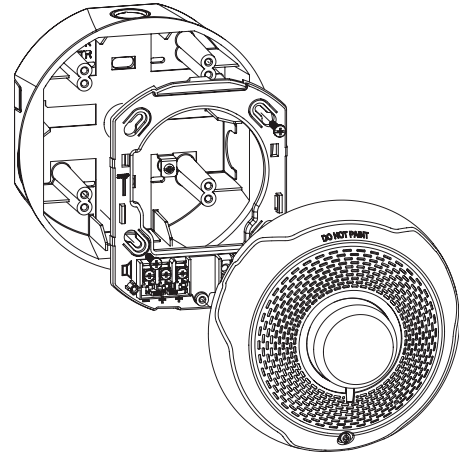


Ceiling Speaker Strobe

Surface Mounting



Ceiling Speaker with Surface Mount Back Box



Ceiling Speaker Strobe with Surface Mount Back Box

L-Series Ordering Information

Ceiling Mount		
White	Red	Description
SPCWL	SPCRL	Speaker only
SPSCWL	SPSCRL	Speaker Strobe
SPSCWL-P	—	Plain, Speaker Strobe
SPSCWL-SP	—	Fuego, Speaker Strobe
SPSCWL-CLR-ALERT	—	Alert, Speaker Strobe, Clear Lens
Accessories		
White	Red	Description
SBBCWL	SBBCRL	Universal Ceiling Surface Mount Back Box
TRC-2W	TRC-2	Universal Ceiling Trim Ring



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 for current product information, including the latest version of this data sheet.
 AVDS86601 • 03/17



Outdoor, Selectable-Output Speaker Strobes and Dual-Voltage Evacuation Speakers for Wall Applications

SpectrAlert® Advance outdoor, selectable-output speaker strobes and dual-voltage evacuation speakers meet virtually any outdoor application requirement.

Features

- Weatherproof per NEMA 4X, IP56
- Rated from -40°F to 151°F
- Plug-in design reduces ground faults
- Universal mounting plate with onboard shorting spring that tests wiring continuity before devices are installed
- Field-selectable candela settings: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Rotary switch for speaker voltage (25 and 70.7 Vrms) and power settings (1/4, 1/2, 1 and 2 watts)
- Compatible with System Sensor synchronization protocol and legacy SpectrAlert products
- Tamper-resistant construction
- Listed for ceiling or wall mounting

Agency Listings



SpectrAlert Advance offers the broadest line of outdoor speakers and speaker strobes in the industry. From metal and plastic outdoor back boxes, to white and red plastic housings, to wall and ceiling mounting options, SpectrAlert Advance can meet virtually any application requirement.

Wall-mount outdoor speakers and speaker strobes can be used indoors or outdoors in wet or dry applications, and can provide reliable operation from -40°F to 151°F. These speakers provide a broad frequency response range, low harmonic distortion and maintain a high sound pressure level at all tap settings to provide accurate and intelligible broadcast of evacuation messages.

Like the entire SpectrAlert Advance line, wall-mount outdoor speakers and speaker strobes include a variety of features that increase application flexibility and simplify installation. First, field-selectable settings, including candela, speaker voltage and power settings, and automatic selection of 12- or 24-volt operation enable installers to easily adapt devices to meet requirements.

Next, these devices use a universal mounting plate with an onboard shorting spring that ensures wiring continuity before devices are installed, so installers can verify proper wiring without mounting the devices and exposing them to potential construction damage. Once the plates are mounted, all SpectrAlert Advance devices utilize a plug-in design with a single captured screw to speed installation and virtually eliminate costly ground faults.

Outdoor devices ship with weatherproof plastic back boxes (metal back boxes are available separately) that accommodate in-and-out wiring for daisy chaining devices. Plastic back boxes feature removable side flanges and improved resistance to saltwater corrosion. Knock-outs located on the back eliminate the need to drill holes for screw-in mounting. Plastic and metal weatherproof back boxes come with 3/4-inch top and bottom conduit entries and 3/4-inch knock-outs at the back. A screw-in NPT plug with an O-ring gasket for a watertight seal is included with each back box.

SpectrAlert® Advance Outdoor Speaker and Speaker Strobe Specifications

Architectural/Engineering Specifications

General

SpectrAlert Advance outdoor speakers and speaker strobes shall mount to a weatherproof back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance speaker strobes, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Outdoor SpectrAlert Advance products shall operate between –40°F and 151°F from a regulated DC, or full-wave rectified, unfiltered power supply.

Speaker

Speaker shall be a System Sensor SpectrAlert Advance Model _____ dual-voltage transformer speaker capable of operating at 25.0 or 70.7 nominal Vrms. Speaker shall be listed to Underwriters Laboratories Standard S4048 for outdoor fire protective signaling systems. Speaker shall have a frequency range of 400 to 4,000 Hz and shall have an operating temperature from –40°F to 150.8°F. Speaker shall have power taps and wattage settings that are selected by rotary switches. The speaker must be installed with its weatherproof back box in order to remain outdoor approved per UL listing S4048. The speaker shall be suitable for use in air handling spaces and wet environments.

Speaker Strobe Combination

The speaker strobe shall be a System Sensor Model _____ listed to UL 1638 and UL 1480 and be approved for fire protective signaling systems. Speaker shall be capable of operating at 25.0 or 70.7 nominal Vrms and shall have a frequency range of 400 to 4,000 Hz. Speaker shall have power taps that are selected by rotary switch. The strobe shall consist of a xenon flash tube with associated lens/reflector system and operate on either 12 or 24 volts. The strobe shall also feature selectable candela output, providing options for 15 or 15/75 candela when operating on 12 volts and 15, 15/75, 30, 75, 110, 115, 135, 150, 177 or 185 candela when operating on 24 volts. The strobe shall comply with the Americans with Disabilities Act requirement for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The speaker strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The speaker strobe shall be suitable for use in wet environments.

Physical Specifications

Operating Temperature	–40°F to 151°F (–40°C to 66°C)
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Dimensions, Wall-Mount

SPS Speaker Strobe	6.0" L × 5.0" W × 4.7" D (including lens and speaker)
SP Speaker	6.0" L × 5.0" W × 2.9" D

Dimensions, Wall-Mount Weatherproof Back Box	6.5" L × 5.5" H × 2.9" D
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Electrical/Operating Specifications

Nominal Voltage (speakers)	25 V or 70.7 V (nominal)
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Maximum Supervisory Voltage (speakers)	50 VDC
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Strobe Flash Rate	1 flash per second
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Nominal Voltage (strobes)	Regulated 12 VDC/FWR or regulated 24 DC/FWR
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Operating Voltage Range (includes fire alarm panels with built in sync)	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
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Operating Voltage with MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
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Frequency Range	400 to 4,000 Hz
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Power	¼, ½, 1, 2 watts
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UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)					
	Candela	8 to 17.5 Volts		16 to 33 Volts	
		DC	FWR	DC	FWR
Standard Candela Range	15	123	128	66	71
	15/75	142	148	77	81
	30	NA	NA	94	96
	75	NA	NA	158	153
	95	NA	NA	181	176
	110	NA	NA	202	195
	115	NA	NA	210	205
High Candela Range	135	NA	NA	228	207
	150	NA	NA	246	220
	177	NA	NA	281	251
	185	NA	NA	286	258

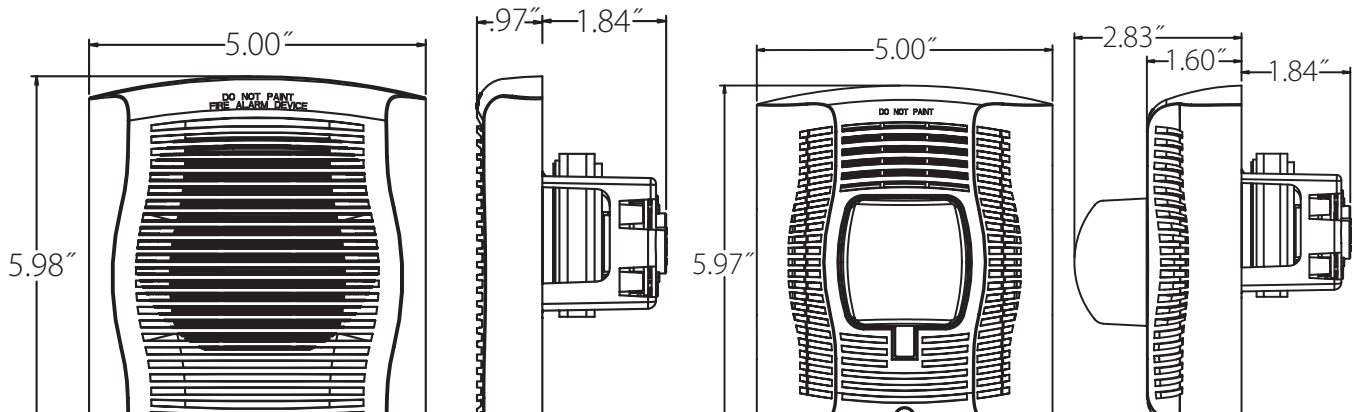
Sound Output				
UL Reverberant (dBA @ 10 ft.)	2W	1W	½ W	¼ W
Outdoor Speaker	90	87	84	81
Outdoor Speaker/Strobe	89	86	83	80

Candela Derating

For K series products used at low temperatures, listed candela ratings must be reduced in accordance with this table.

Strobe Output (cd)	
Listed Candela	Candela rating at -40°F
15	Do not use below 32°F
15/75	
30	
75	44
95	70
110	110
115	115
135	135
150	150
177	177
185	185

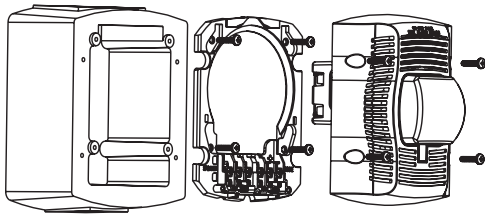
Dimensions



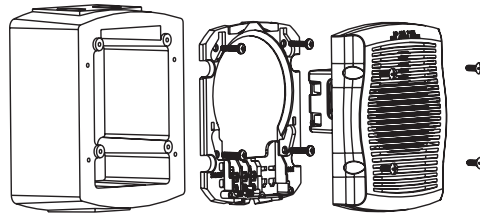
Wall-Mount Outdoor Speaker

Wall-Mount Outdoor Speaker Strobe

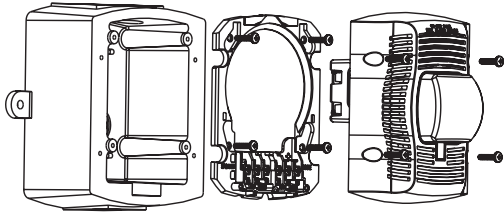
Surface Mounting



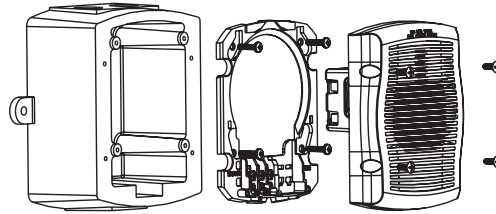
Wall-Mount Speaker Strobe with Plastic Weatherproof Back Box



Wall-Mount Speaker with Plastic Weatherproof Back Box



Wall-Mount Speaker Strobe with Metal Weatherproof Back Box



Wall-Mount Speaker with Metal Weatherproof Back Box

Ordering Information for SpectrAlert® Advance Outdoor Speakers and Speaker Strobes

Wall Mount		
White	Red	Description
SPWK	SPRK	Outdoor Speaker (includes plastic weatherproof back box)
SPWK-R	SPRK-R	Outdoor Speaker (does not include plastic weatherproof back box)
SPSWK	SPSRK	Outdoor Speaker Strobe, Standard cd (includes plastic weatherproof back box)
SPSWK-P	SPSRK-P	Plain Outdoor Speaker Strobe, Standard cd (includes plastic weatherproof back box)
SPSWK-R	SPSRK-R	Outdoor Speaker Strobe, Standard cd (does not include weatherproof back box)
SPSWK-CLR-ALERT	—	Outdoor Speaker Strobe, Standard cd, Clear Lens, ALERT Printed (includes plastic weatherproof back box)
—	SPSRHK	Outdoor Speaker Strobe, High cd (135, 150, 177, 185) (includes plastic weatherproof back box)
Accessories		
White	Red	Description
MWBBW	MWBB	Wall, Metal Weatherproof Back Box

Notes:

All -P models have a plain housing (no "FIRE" marking on cover)

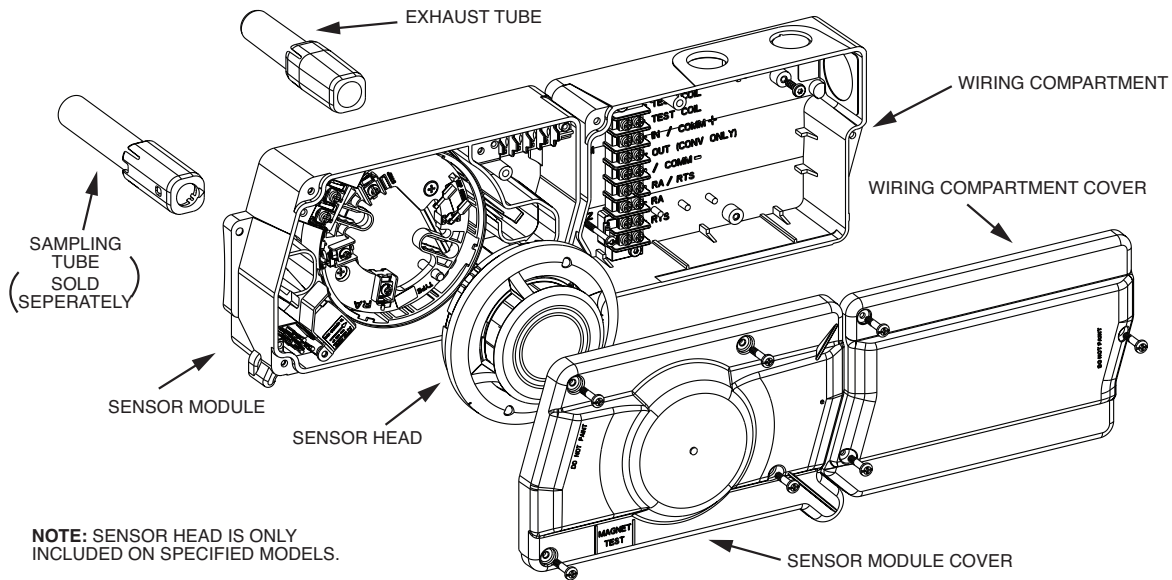
"Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd" refers to strobes that include 135, 150, 177, and 185 candela settings. **When replacing standard outdoor units, both the device and back box must be replaced.**



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AVDS11301 • 09/12

FIGURE 1. EXPLODED VIEW OF DUCT SMOKE DETECTOR COMPONENTS:



H0569-06

[4.2] DETERMINE MOUNTING LOCATION AND CONFIGURATION

On ducts wider than 18 inches it is recommended that the detector be mounted downstream of a bend, obstruction in the duct, or the supply or return air inlet.

Exception: Installation of duct detectors can be on or within a commercial packaged rooftop heating and air-conditioning system, fire/smoke dampers and economizers. They may be mounted in either the supply and/or return air section as determined by local code.

Once a suitable location is selected, determine if the detector is to be mounted in a side-by-side “rectangular” configuration or a top-over-bottom “square” configuration as shown in Figure 2. If mounting in the square configuration, remove the rear attachment screw, rotate the unit at hinge, and replace the screw into the new attachment hole as shown in Figure 2. Do NOT remove the hinge screw during this process. Final installation approval shall be based upon passing differential pressure and smoke entry tests described in the Measurement Tests section.

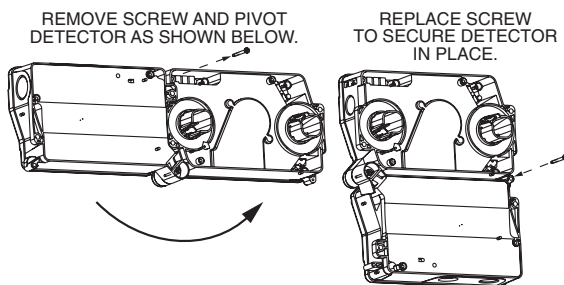
[4.3] DRILL THE MOUNTING HOLES

Remove the paper backing from the mounting template supplied. Affix the template to the duct at the desired mounting location. Make sure the template lies flat and smooth on the duct.

[4.3.1] FOR RECTANGULAR SIDE-BY-SIDE MOUNTING CONFIGURATION:

Center punch at (4) target centers: (2) “A” for sampling tubes and (2) “B” for the rectangular configuration mounting tabs as shown on mounting template. Drill pilot holes at target “A” centers and cut two 1.375-inch diameter holes using a 1 3/8-inch hole saw or punch. Drill .156-inch diameter holes using a 5/32-inch drill at target “B” centers.

FIGURE 2:



H0550-00

[4.3.2] FOR SQUARE TOP-OVER-BOTTOM MOUNTING CONFIGURATION:

Center punch at (4) target centers: (2) “A” for sampling tubes and (2) “C” for the square configuration mounting tabs as shown on mounting template. Drill pilot holes at target “A” centers and cut two 1.375-inch diameter holes using a 1 3/8-inch hole saw or punch. Drill .156-inch diameter holes using a 5/32-inch drill at target “C” centers. If desired, drill an additional .156-inch hole at the location of one of the mounting tabs on the lower housing.

[4.4] SECURE THE DUCT DETECTOR TO THE DUCT

Use two (rectangular configuration) or three (square configuration) of the provided sheet metal screws to screw the duct detector to the duct.

CAUTION: Do not overtighten the screws.

[5] SAMPLING TUBE INSTALLATION

[5.1] SAMPLING TUBE SELECTION

The sampling tube must be purchased separately. Order the correct length, as specified in Table 1, for width of the duct where it will be installed. The sampling tube length must extend at least 2/3 across the duct width for optimal performance.

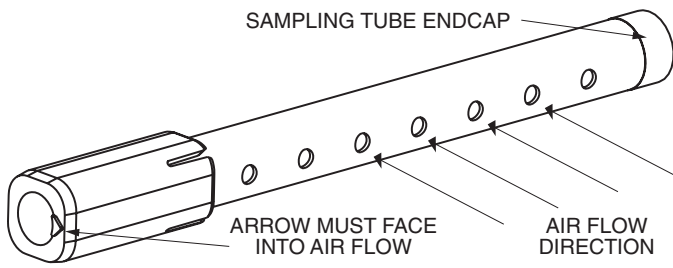
The sampling tube is always installed with the air inlet holes facing into the air flow. To assist proper installation, the tube’s connector is marked with an arrow. Make sure the sampling tube is mounted so that the arrow points into the airflow as shown in Figure 3. Mounting the detector housing in a vertical orientation is acceptable provided that the air flows directly into the sampling tube holes as indicated in Figure 3. The sampling tube and exhaust tube can be mounted in either housing connection as long as the exhaust tube is mounted downstream from the sampling tube.

TABLE 1. SAMPLING TUBES RECOMMENDED FOR DIFFERENT DUCT WIDTHS:

Outside Duct Width	Sampling Tube Recommended*
Up to 1 ft.	DST1
1 to 2 ft.	DST1.5
2 to 4 ft.	DST3
4 to 8 ft.	DST5
8 to 12 ft.	DST10 (2-piece)

*Must extend a minimum of 2/3 the duct width.

FIGURE 3. AIR DUCT DETECTOR SAMPLING TUBE:



H0551-00

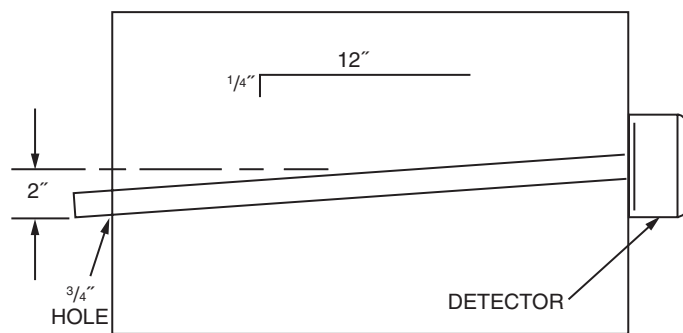
CAUTION: The sampling tube end cap, included with the detector, is critical to proper operation of the duct smoke detector. The end cap is needed to create the proper air flow to the sensor of the duct smoke detector. Once any sampling tube length adjustments are made, plug the end of the sampling tube with the provided end cap.

A plastic exhaust tube is included with the unit to be installed if needed. Install into the housing connection that is downstream from the sampling tube connection. The exhaust tube can be installed from the front of the detector or the back. A longer 1 foot exhaust tube, model ETX, is available as an accessory in cases where the molded exhaust tube does not extend at least 2 inches into the duct.

[5.2] SAMPLING TUBE INSTALLATION

1. For tubes shorter than the width of the duct, slide the sampling tube, with installed end cap, into the housing connection that meets the airflow first. Position the tube so that the arrow points into the airflow as shown in Figure 3. Per NFPA sampling tubes over 3 feet long should be supported at the end opposite of the duct detector. In ducts wider than 8 feet, work must be performed inside the duct to couple the other section of the sampling tube to the section already installed using the 1/2-inch conduit fitting supplied. Make sure that the holes on both sections of the air inlet sampling tube are lined up and facing into the airflow.
2. For tubes longer than the width of the air duct, the tube should extend out of the opposite side of the duct. Drill a 3/4-inch hole in the duct opposite the hole already cut for the sampling tube. Ensure that the sampling tube is angled downward from the duct smoke detector to allow for moisture drainage away from the detector. The sampling tube should be angled at least 1/4" downward for every 12" of duct width per Figure 4. There should be 10 to 12 holes spaced as evenly as possible across the width of the duct. If there are more than 2 holes in the section of the tube extending out of the duct, select a shorter tube using Table 1. Otherwise, trim the tube to leave approximately 1 to 2 inches extending outside the duct. Plug the end with the end cap and tape closed any holes in the protruding section of the tube. Be sure to seal the duct where the tube protrudes.

FIGURE 4.



H0215-00

NOTE: Air currents inside the duct may cause excessive vibration, especially when the longer sampling tubes are used. In these cases, a 3-inch floor flange (available at most plumbing supply stores) may be used to fasten the sampling tube to the other side of the duct. When using the flange/connector mounting technique, drill a 1 to 1 1/4-inch hole where the flange will be used.

[5.3] MODIFICATIONS OF SAMPLING TUBES

There may be applications where duct widths are not what is specified for the installation. In such cases, it is permissible to modify a sampling tube that is longer than necessary to span the duct width.

Use a 0.193-inch diameter (#10) drill and add the appropriate number of holes so that the total number of holes exposed to the air flow in the duct is 10 to 12. Space the additional holes as evenly as possible over the length of the tube.

CAUTION: This procedure should only be used as a temporary fix. It is not intended as a permanent substitute for ordering the correct length tubes.

[5.4] REMOTE SAMPLING TUBE INSTALLATION

The detector arrangement can also incorporate the remote mounting of the sampling tube and/or exhaust tube. In this case both the detector, sampling tube and exhaust tube (if included) should be rigidly mounted to withstand the pressure and vibrations caused by the air velocity. The location of the detector's sampling tube should be such that there is uniform airflow in the cross section area.

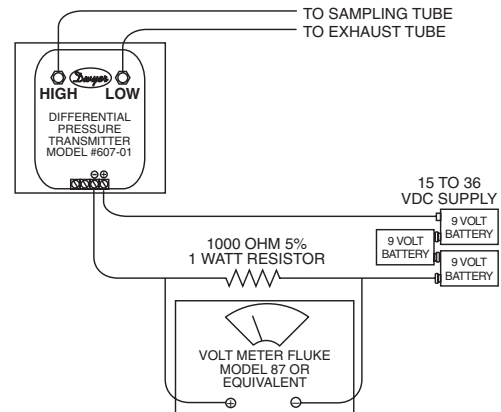
Pressure differential across the sampling and exhaust ports in the detector housing shall be verified to be between 0.01 and 1.11 inches of water. Do so by measuring the pressure difference between the inlet and outlet ports on the detector housing using a manometer as described in the Measurement Tests section of this manual.

[6] MEASUREMENT TESTS

[6.1] AIR FLOW

The SK-Duct is designed to operate over an extended air speed range of 100 to 4000 FPM. To verify sufficient sampling of ducted air, turn the air handler on and use a manometer to measure the differential pressure between the two sampling tubes. The differential pressure should measure at least 0.01 inches of water and no more than 1.11 inches of water. Because most commercially available manometers cannot accurately measure very low pressure differentials, applications with less than 500 FPM of duct air speed may require one of the following: 1) the use of a current-sourcing pressure transmitter (Dwyer Series 607) or 2) the use of aerosol smoke, see below for test descriptions.

FIGURE 5. PROCEDURE FOR VERIFYING AIR FLOW:



H0163-01

[6.2] LOW FLOW AIR FLOW TEST USING DWYER SERIES 607 DIFFERENTIAL PRESSURE TRANSMITTER

Verify the air speed of the duct using an anemometer. Air speed must be at least 100 FPM. Wire the Dwyer transmitter as shown in Figure 5. Connect the leads of the meter to either side of the 1000Ω resistor. Allow unit to warm up for 15 seconds. With both HIGH and LOW pressure ports open to ambient air, measure and record the voltage drop across the 1000Ω resistor (measurement 1), 4.00 volts is typical. Using flexible tubing and rubber stoppers, connect the HIGH side of the transmitter to the sampling tube of the duct smoke detector housing, and the LOW side of the transmitter to the exhaust tube of the duct smoke detector housing. Measure and record the voltage drop across the 1000Ω resistor (measurement 2). Subtract the voltage recorded in measurement 1 from the voltage recorded in measurement 2. If the difference is greater than 0.15 volts, there is enough air flow through the duct smoke detector for proper operation.

[7] FIELD WIRING; INSTALLATION GUIDELINES

All wiring must be installed in compliance with the National Electrical Code and the local codes having jurisdiction. Proper wire gauges should be used. The conductors used to connect smoke detectors to control panels and accessory devices should be color-coded to prevent wiring mistakes. Improper connections can prevent a system from responding properly in the event of a fire.

For signal wiring (the wiring between detectors or from detector to auxiliary devices), it is usually recommended that single conductor wire be no smaller than 18 gauge. The duct smoke detector terminals accommodate wire sizes up to 12 gauge. Flexible conduit is recommended for the last foot of conduit; solid conduit connections may be used if desired.

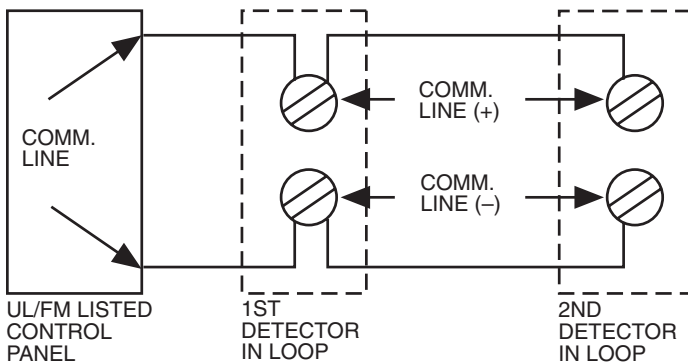
Duct smoke detectors and alarm system control panels have specifications for Signaling Line Circuit (SLC) wiring. Consult the control panel manufacturer's specifications for wiring requirements before wiring the detector loop.

[7.1] WIRING INSTRUCTIONS

Disconnect power from the communication line before installing the SK-Duct duct smoke detector.

The SK-Duct detectors are designed for easy wiring. The housing provides a terminal strip with clamping plates. Wiring connections are made by sliding the bare end under the plate, and tightening the clamping plate screw. See Figure 6 below for system wiring.

FIGURE 6. SYSTEM WIRING DIAGRAM FOR SK-DUCT:

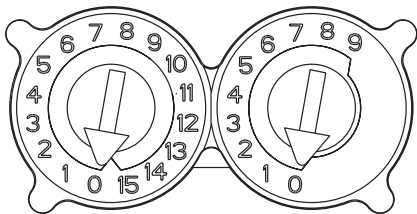


HO572-00

[7.2] SET THE ADDRESS

Set the desired address on the sensor head code wheel switches on the back of the sensor head.

FIGURE 7. ROTARY ADDRESS SWITCHES



HO112-01

[8] VERIFICATION OF OPERATION

[8.1] INSTALL THE COVER

Install the covers making sure that the cover fits into the base groove. Tighten the seven screws that are captured in the covers. Note that the cover must be properly installed for proper operation of the sensor.

[8.2] POWER THE UNIT

Activate the communication line on terminals COM + and COM -.

[8.3] DETECTOR CHECK

Standby - If programmed by the system control panel, look for the presence of the flashing LEDs through the transparent housing cover. The LED will flash with each communication.

Trouble - If programmed by the system control panel and the detector LEDs do not flash, then the detector lacks power (check wiring, missing or improperly placed cover, panel programming, or power supply), the sensor head is missing (replace), or the unit is defective (return for repair).

[8.4] DUCT SMOKE DETECTOR TEST & MAINTENANCE PROCEDURES

Test and maintain duct smoke detectors as recommended in NFPA 72. The tests contained in this manual were devised to assist maintenance personnel in verification of proper detector operation.

Before conducting these tests, notify the proper authorities that the smoke detection system will be temporarily out of service. Disable the zone or system under test to prevent unwanted alarms.

[8.4.1] TEST THE UNIT

1. M02-04-00 Magnet Test (not included) - This sensor can be functionally tested with a test magnet. The test magnet electronically simulates smoke in the sensing chamber, testing the sensor electronics and connections to the control panel.
2. Remote Test Accessory - The use of a remote accessory for visible indication of power and alarm is recommended.

Verify system control panel alarm status and control panel execution of all intended auxiliary functions (i.e. fan shutdown, damper control, etc.).

Two LEDs on the sensor are controlled by the panel to indicate sensor status. Coded signals, transmitted from the panel, can cause the LEDs to blink, latch on, or latch off. Refer to the control panel technical documentation for sensor LED operation and expected delay to alarm.

[8.4.2] THE DETECTOR MUST BE RESET BY THE SYSTEM CONTROL PANEL

[8.4.3] SMOKE ENTRY TEST USING AEROSOL SMOKE

This test is intended for low-flow systems (100-500 FPM). If the air speed is greater than 500 FPM, use a conventional manometer to measure differential pressure between the sampling tubes, as described under Measurement Tests on Page 3.

Drill a 1/4-inch hole 3 feet upstream from the duct smoke detector. With the air handler on, measure the air velocity with an anemometer. Air speed must be at least 100 FPM. Spray aerosol smoke* into the duct through the 1/4-inch hole for five seconds. Wait two minutes for the duct smoke detector to alarm. If the duct smoke detector alarms, air is flowing through the detector. Remove the duct smoke detector cover and blow out the residual aerosol smoke from the chamber and reset the duct smoke detector at the panel. Use duct tape to seal the aerosol smoke entry hole. Remember to replace the cover after the test or the detector will not function properly.

*Aerosol smoke can be purchased from Home Safeguard Industries at homesafeguard.com, model 25S Smoke Detector Tester, and Chekkit Smoke Detector Tester model CHEK02 and CHEK06 available from SDi. When used properly, the canned smoke agent will cause the smoke detector to go into alarm. Refer to the manufacturer's published instructions for proper use of the canned smoke agent.

CAUTION

Canned aerosol simulated smoke (canned smoke agent) formulas will vary by manufacturer. Misuse or overuse to these products may have long term adverse effects on the smoke detector. Consult the canned smoke agent manufacturer's published instructions for any further warnings or caution statements.

[9] DETECTOR CLEANING PROCEDURES

Notify the proper authorities that the smoke detector system is undergoing maintenance, and that the system will temporarily be out of service. Disable the zone or system undergoing maintenance to prevent unwanted alarms and possible dispatch of the fire department.

[9.1] DETECTOR SENSOR

1. Remove the sensor to be cleaned from the system.
2. Remove the sensor cover by pressing firmly on each of the four removal tabs that hold the cover in place.
3. Vacuum the screen carefully without removing it. If further cleaning is required continue with Step 4, otherwise skip to Step 7.
4. Remove the chamber cover/screen assembly by pulling it straight out.
5. Use a vacuum cleaner or compressed air to remove dust and debris from the sensing chamber.
6. Reinstall the chamber cover/screen assembly by sliding the edge over the sensing chamber. Turn until it is firmly in place.
7. Replace the cover using the LEDs to align the cover and then gently pushing it until it locks into place.
8. Reinstall the detector.

[9.2] REINSTALLATION

1. Reinstall the detector in its housing.
2. Restore system power.
3. Perform Detector Check.
4. Notify the proper authorities testing has been completed and the smoke detector system is back in operation.

[10] SENSOR REPLACEMENT

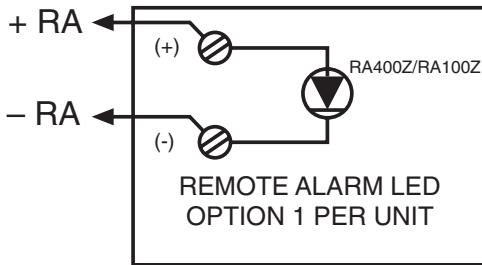
1. Remove the sensor head by rotating counterclockwise.
2. Pull gently to remove it.
3. To replace the sensor head, align the mounting features and rotate clockwise into place.

[11] OPTIONAL ACCESSORIES

Optional accessories include RA400Z/RA100Z, RTS451/RTS151 and RTS451KEY/RTS151KEY.

NOTE: Ensure blue wire always remains connected to RA + on the field connector side of the terminal block.

FIGURE 8. WIRING DIAGRAM FOR TO RA400Z/RA100Z:



H0570-03

Note: If using a RA400Z, the tab should be broken for use with the intelligent duct smoke detector. If using RA100Z, ensure that jumper is removed.

The RTS451/RTS151/RTS451KEY/RTS151KEY Remote Test Station facilitates test of the alarm capability of the duct smoke detector. These accessories provide the stimulus to initiate an alarm condition at the detector. The SK-Duct duct smoke detector must be reset by the system control panel.

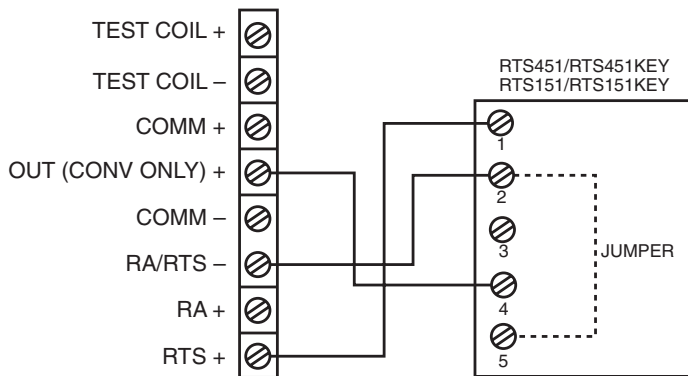
**[11.1] OPTION 1:
REMOTE TEST USING SENSOR WITH REMOTE TEST CAPABILITY
(WITHOUT A TEST COIL):**

A sensor with suffix "R" is available for use inside the SK-Duct. Suffix "R" represents a head with Remote Test Capability. Using this head inside the SK-Duct eliminates the need for a test coil when wired to a RTS451/RTS151/RTS451KEY/RTS151KEY Remote Test Station.

To install the RTS451/RTS151/RTS451KEY/RTS151KEY, using the sensor with remote test capability connect the device as shown in **Figure 9**; wire runs must be limited to 25 Ω or less per interconnecting wire.

NOTE: Resistor assembly must be in place between RA + and OUT + inside the SK-Duct for Remote Test function to operate.

FIGURE 9. RTS451/RTS451KEY/RTS151/RTS151KEY USING SENSOR WITH REMOTE TEST CAPABILITY



H0633-00

[11.2] OPTION 2:

REMOTE TEST USING A TEST COIL:

The use of a remote test station requires the installation of an accessory coil, part number DCOIL, sold separately.

- 1) Install DCOIL in housing pocket insuring that arrow is pointing toward detector.
- 2) Install DCOIL mounting screw.
- 3) Connect each DCOIL lead to a Test Coil Terminal.

See **Figure 10** below for reference.

FIGURE 10. SK-DUCT USING A TEST COIL

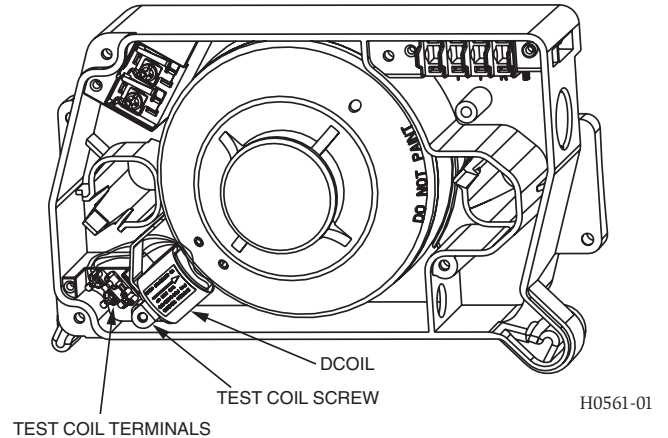
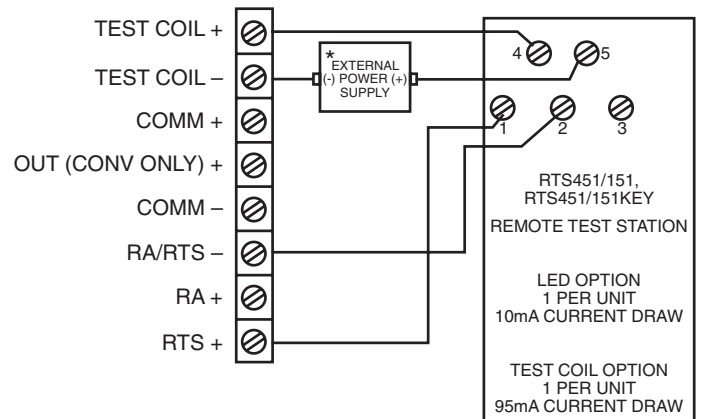


FIGURE 11. WIRING DIAGRAM FROM SK-DUCT TO RTS451/RTS151/RTS451KEY/RTS151KEY USING A TEST COIL:



H0571-07

NOTE: The RTS451/151, RTS451/151KEY test coil circuit requires an external 24 VDC power supply which must be UL listed.

[11.3] ADDITIONAL MODULE OPTION

The SK-Duct can also accommodate a relay or control module (sold separately) within the power board side of the housing. The relay or control module must be listed as compatible to the fire alarm control panel.

Physical Module Mounting

- 1) Remove the breakaway tabs at the four corners of the module
- 2) Locate the module at right most corner of the power board. The upper left corner mounting hole of the module will align with a screw boss in the housing.
- 3) Install a #8 x 3/8" Plastite screw at the screw boss location

Note: See the corresponding module Installation Instructions for general description, control panel compatibility, wiring and ratings.

Please refer to insert for the Limitations of Fire Alarm Systems

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for the enclosed product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: Honeywell, 12220 Rojas Drive, Suite 700, El Paso

TX 79936, USA. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



SK-DUCT

Intelligent Air Duct Smoke Detector

The SK-DUCT Intelligent air duct smoke detector is used with SK-PHOTOR (included) for detecting smoke and products of combustion present in air moving through an HVAC air handling system. When smoke is detected in a duct, the unit communicates the condition to the Honeywell Silent Knight control panel. The panel, in turn, depending on programming and wiring, turns off fans, blowers, and other devices. The duct housing allows for mounting of SK-RELAY addressable relay module.

The Model SK-DUCT Air Duct Smoke Detector utilizes photoelectric technology for the detection of smoke. It provides early detection of smoke and products of combustion present in air moving through HVAC ducts in Commercial and Industrial applications.

The SK-DUCT is in a heavy duty gray steel back box with a clear cover. It features a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct. It installs quickly and easily.

The unit senses smoke in the most challenging conditions, operating in airflow speeds of 100 to 4000 feet per minute, temperatures of -4°F to 158°F, and a humidity range of 0 to 95 percent (non-condensing).



SK-DUCT

FEATURES & BENEFITS

- Versatile mounting options: square or rectangular configuration
- New Cover tamper signal
- LED alarm indication and communication on sensor head
- Detects and limits the spread of smoke
- Rugged steel back box with clear plastic cover
- Easy to clean
- Large terminal connection screws
- Transparent cover for convenient visual inspection
- Patented sampling tube installs from front or back of the detector with no tools required
- Available space within housing to accommodate mounting of relay module
- UL listed

SK-DUCT Technical Specifications

PHYSICAL

(Rectangular): 14.38" (37 cm) L X 5" (12.7 cm) W X 2.5" (6.6 cm) D

(Square): 7.75" (19.7cm) L x 9"(22.9cm) W x 2.5" D (6.35cm)

Weight: 1.6lb (0.73kg)

ELECTRICAL (using SK-Photo or SK-PhotoR)

Operating Voltage: 15–32 VDC

Standby Current: 300 μ A @ 24 VDC max.

Alarm Current: 6.5 mA @ 24 VDC max (with LED on)

ENVIRONMENTAL

Operating Temperature: -4°F – 158°F (-20°C – 70°C)

Humidity: 0% – 95% (non-condensing)

AIR VELOCITY

100 to 4000 ft/min: (0.5 – 20.3 m/sec.)

ORDERING INFORMATION

SK-DUCT: Intelligent non-relay duct smoke detector

SK-PHOTO: Addressable Photo Detector

SK-PHOTOR: Addressable Photo Detector with remote test capability (included with SK-Duct)

SK-RELAY: Addressable Relay Module, must be added if relay function is required, (fits in housing)

ACCESSORIES

DST1: Metal Sampling Tube Duct Width up to 1'

DST1.5: Metal Sampling Tube Duct Widths 1' – 2'

DST3: Metal Sampling Tube Duct Widths 2' – 4'

DST5: Metal Sampling Tube Duct Widths 4' – 8'

DST10: Metal Sampling Tube Duct Widths 8' – 12'

DH400OE-1: Weatherproof Enclosure

ETX: Metal Exhaust Tube Duct width 1'

RA100Z: Remote LED Annunciator

DCOIL: Duct accessory coil, required if using with SK-PHOTO and not SK-PHOTOR (included) with SK-DUCT

RTS151: Magnetic Remote Test station

RTS151KEY: Key-Activated Remote Test station
M02-04-00 Test Magnet P48-21-00 Replacement End Cap for Metal Sampling Tube

APA151: Remote annunciator with piezo alarm

IMPORTANT NOTES:

- The use of either RTS151 or RTS151KEY requires the installation of an accessory coil, DCOIL, sold separately. Please refer to the SK-DUCT installation instructions for more information
- The RTS151/RTS151KEY test coil circuit requires an external 24VDC power supply which must be UL listed.

ACCESSORY CURRENT LOADS AT 24VDC		
Device	Standby	Alarm
RA100Z	0mA	12mA Max.
RTS151	0mA	12mA Max
RTS151KEY	12mA	12mA Max

COMPATIBILITY

The SK-DUCT is compatible with the following Honeywell Silent Knight fire alarm control panels:

6820: Addressable fire alarm control panel

6820EVS: Addressable fire alarm control panel with an emergency mass notification system.

6808: Addressable fire alarm control panel

6700: Addressable fire alarm control panel

5700: Addressable fire alarm control panel

5808: Addressable fire alarm control panel

5820XL: Addressable fire alarm control panel

5820XL-EVS: Addressable fire alarm control panel with an emergency mass notification system.

For a complete listing of all compliance approvals and certifications, please visit www.silentknight.com.

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For Technical Support, call 800-446-6444.

For more information

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Honeywell Silent Knight

12 Clintonville Road
Northford, CT 06472
800-328-0103



SK-MONITOR

Intelligent Monitor Module

The SK-MONITOR is an addressable monitor module for use with Honeywell Silent Knight Series fire alarm control panels (FACPs). The SK-MONITOR is intended for use in intelligent, two-wire systems, where individual address of each module is selected using the built-in rotary switches.

The SK-MONITOR supports Class A supervised or Class B supervised wiring to the load device. Conventional 4-wire smoke detectors can be monitored for alarm and trouble conditions.

INSTALLATION

The SK-MONITOR mounts directly into a 4" square electrical box. The box must have a minimum depth of 2-1/8". A surface mount electrical box (System Sensor® PN SMB500) is available from Silent Knight.



SK-MONITOR

FEATURES & BENEFITS

- Single contact monitor
- Support for Class A and Class B wiring
- Fully supervised
- Panel controlled status LED that flashes green in normal state and is solid red in alarm
- SEMS screws for easy wiring
- UL Listed
- Rotary address switches for fast installation

SK-MONITOR Technical Specifications

PHYSICAL

Height: 4.5"H x 4" W x 1.25"D (11.4 X 10.2 X 3cm)

Shipping Weight: 6.3 oz (196 g)

ELECTRICAL

Operating Voltage: 15 – 32VDC

Current Draw (LED on): 5.0mA max

Operating Current (LED flashing): 375µA

Standby Current: 400 µA max @ 24 VDC (one communication every 5 sec with 47K EOL); 550 µA max @ 24 VDC (one communication every 5 sec with EOL <1K)

5.5 mA (with LED latched on)

LED Current: 5.5 mA (with LED latched on)

End-of-Line Resistance: 47K Ω

Initiating Device Circuit Wiring Resistance: 1,500 Ω max

SLC Loop Resistance: 40 Ω max.

ENVIRONMENTAL

Operating Temperature: 32°F – 120°F (0°C – 49°C)

Humidity: 10% – 93% non-condensing

ORDERING INFORMATION

SK-MONITOR: Monitor Module

ACCESSORIES

SMB500: 4" Square surface mount electrical box

COMPATIBILITY

The SK-MONITOR is compatible with the following Honeywell Silent Knight fire alarm control panels:

6820: Addressable fire alarm control panel

6820EVS: Addressable fire alarm control panel with an emergency mass notification system.

6808: Addressable fire alarm control panel

6700: Addressable fire alarm control panel

5700: Addressable fire alarm control panel

5808: Addressable fire alarm control panel

5820XL: Addressable fire alarm control panel

5820XL-EVS: Addressable fire alarm control panel with an emergency mass notification system

For a complete listing of all compliance approvals and certifications, please visit www.silentknight.com.

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For more information

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Honeywell Silent Knight

12 Clintonville Road
Northford, CT 06472
800-328-0103

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SK-MONITOR-2

Addressable Dual Monitor Module

The SK-MONITOR-2 module is capable of monitoring two separate Class B circuits simultaneously, making it ideal for waterflow tamper switch and flow switch monitoring.

The SK-MONITOR-2 is an addressable monitor module with two initiating circuits for use with Honeywell Silent Knight series fire alarm control panels (FACPs). The SK-MONITOR-2 acts as an interface to contact devices, such as waterflow switches and pull stations.

The SK-MONITOR-2 supports Class B supervised wiring to the load device. Conventional 4-wire smoke detectors can be monitored for alarm and trouble conditions..

INSTALLATION

SK-MONITOR-2 mounts directly into a 4" square electrical box. The box must have a minimum depth of 2-1/8". A surface mount electrical box (System Sensor® part number SMB500) is available from Silent Knight.

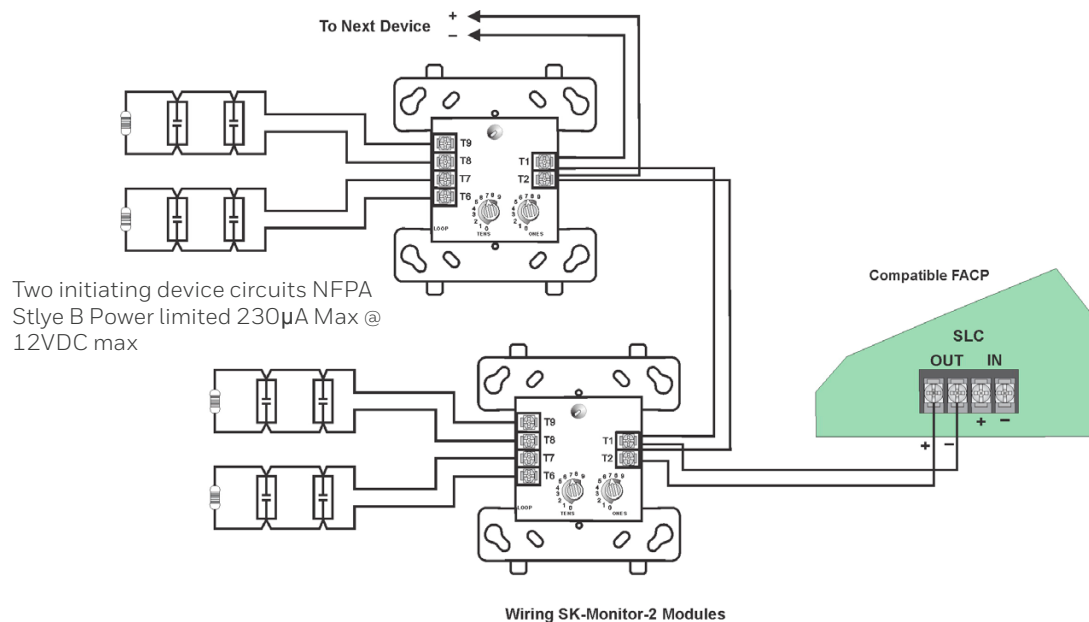


SK-MONITOR-2

FEATURES & BENEFITS

- Monitor two circuits, with unique addresses, simultaneously
- Support for Class B wiring
- Fully supervised
- Panel controlled status LED that flashes green in normal state and is solid red in alarm
- Attractive ivory cover plate
- Rotary address switches for fast installation
- SEMS screws for easy wiring

SK-MONITOR-2 Technical Specifications



For a complete listing of all compliance approvals and certifications, please visit www.silentknight.com.

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For Technical Support, call 800-446-6444.

PHYSICAL

Height: 4.5" H x 4" W x 1.25" D
Shipping Weight: 6.3 oz (196 g)

ELECTRICAL

Operating Voltage: 15 – 32 VDC
Standby and Alarm Current: 750 μ A max @ 24VDC
(one communication every 5 sec with 47K EOL)
End-of-Line Resistance: 47K Ω

ENVIRONMENTAL

Operating Temperature: 32°F – 120°F (0°C – 49°C)
Humidity: 10% – 93% non-condensing

ORDERING INFORMATION

SK-Monitor-2: Dual Monitoring Module

ACCESSORIES

SMB500: 4" Square Surface Mount Electrical Box

AGENCY LISTINGS AND APPROVALS

UL Listed
CSFM Approved
City of New York Approved

COMPATIBILITY

The SK-MONITOR-2 is compatible with the following Honeywell Silent Knight fire alarm control panels:

- 6820: Addressable fire alarm control panel
- 6820EVS: Addressable fire alarm control panel with an emergency mass notification system.
- 6808: Addressable fire alarm control panel
- 6700: Addressable fire alarm control panel
- 5700: Addressable fire alarm control panel
- 5808: Addressable fire alarm control panel
- 5820XL: Addressable fire alarm control panel
- 5820XL-EVS: Addressable fire alarm control panel with an emergency mass notification system.

For more information

Learn more about Honeywell Silent Knight and other products by visiting www.silentknight.com

Honeywell Silent Knight

12 Clintonville Road
Northford, CT 06472
800-328-0103

SK-PHOTO-W SERIES

Addressable Photoelectric Smoke Detectors

The Silent Knight® SK-PHOTO-W Series feature a modern design and expanded color options support a variety of contemporary aesthetic demands. In addition, each detector is constructed for exceptional installation and maintenance efficiency.



The SK-PHOTO-W Series intelligent plug-in smoke detectors are designed for both performance and aesthetics, and are direct replacements for the SK-PHOTO Series detectors. A new modern, sleek, contemporary design and enhanced optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources in accordance with more stringent code standards. The SK-PHOTO-W Series detector sensitivity can be programmed in the control panel software. Sensitivity is continuously monitored and reported to the panel. Point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for selective maintenance when chamber contamination reaches an unacceptable level. Dual electronic thermistors add 135°F (57°C) fixed temperature thermal sensing on the SK-PHOTO-T-W. The SK-PHOTO-R-W is a remote test capable detector for use with DNR Series duct detector housings.

FEATURES AND BENEFITS

- Designed to meet UL 1268 7th Edition
- Sleek and stylish contemporary design
- Stable communication technique with noise immunity
- Addressable by device
- Rotary, decimal addressing (Refer to the Silent Knight panel manuals for device capacity)
- Two-wire SLC connection
- LEDs blink every time the unit is polled
- 360°-field viewing angle of the visual alarm indicators (two bi-color LEDs); LEDs blink green in Normal condition and turn on steady red in Alarm
- Integral communications and built-in device-type identification
- Remote test feature from the panel
- Built-in functional test switch activated by external magnet
- Walk test with address display (an address of 121 will blink the detector LED 12-(pause)-1)
- Low standby current
- Built-in tamper-resistant feature
- Designed for direct-surface or electrical-box mounting
- Sealed against back pressure
- Plugs into separate base for ease of installation and maintenance
- Expanded color options
- SEMS screws for wiring of the separate base
- Optional remote, single-gang LED accessory
- Optional sounder, relay, and isolator bases

INSTALLATION

The SK-PHOTO-W Series plug-in intelligent thermal detectors use a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector.

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see SK-61045.

Note: Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring.

Note: When using relay or sounder bases, consult the SK-ISO installation sheet I56-3627 for device limitations between isolator modules and isolator bases.

OPERATION

Each SK-PHOTO-W Series detector uses one of the panel's addresses (total limit is panel dependent) on the Signaling Line Circuit (SLC). It responds to regular polls from the control panel and reports its type and the status. If it receives a test command from the panel (or a local magnet test), it stimulates its electronics and reports an alarm. It blinks its LEDs when polled and turns the LEDs on when commanded by the panel. The SK-PHOTO-W Series offers features and performance that represent the latest in smoke detector technology.

PRODUCT LINE INFORMATION

Note: "-IV" suffix indicates ivory color.

SK-PHOTO-W: White, low-profile photoelectric sensor

SK-PHOTO-T-W: White, same as SK-PHOTO-W but includes a built-in 135°F (57°C) fixed-temperature thermal device

SK-PHOTO-R-W: White, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW

B300-6: White, standard flanged low-profile mounting base

B300-6-BP: Bulk pack of B300-6, package contains 10

B300-6-IV: Ivory, standard flanged low-profile mounting base

B501-WHITE: White, standard European flangeless mounting base

B501-BL: Black, standard European flangeless mounting base

B501-IV: Ivory, standard European flangeless mounting base

B501-WHITE-BP: Bulk pack of B501-WHITE, contains 10

B200S-WH: White, Intelligent, programmable sounder base

B200S-IV: Ivory, Intelligent, programmable sounder base

B200SR-WH: White, Intelligent sounder base for retrofit applications

B200SR-IV: Ivory, Intelligent sounder base for retrofit applications

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base

B200SR-LF-WH: White, Low Frequency Intelligent sounder base for retrofit applications

B200SR-LF-IV: Ivory, Low Frequency Intelligent sounder base for retrofit applications

B224RB-WH: White, plug-in System Sensor® relay base

B224RB-IV: Ivory, plug-in System Sensor relay base

B224BI-WH: White, plug-in System Sensor isolator detector base

B224BI-IV: Ivory, plug-in System Sensor isolator detector base

ACCESSORIES

TR300: White, replacement flange for B210LP or B300-6 bases

TR300-IV: Ivory, replacement flange for B210LP or B300-6 bases

RA100Z(A): Remote 3 – 32 VDC LED annunciator, mounts to a U.S. single-gang electrical box, for use with B501 and B300-6 bases only

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: White, detector color kit, pack of 10

CK300-IV: Ivory, detector color kit, pack of 10

CK300-BL: Black, detector color kit, pack of 10

SK-PHOTO-W SERIES TECHNICAL SPECIFICATIONS

PHYSICAL/ENVIRONMENTAL

Sensitivity:

- UL Applications: 0.5% to 4.0% per foot obscuration.
- ULC Applications: 0.5% to 3.5% per foot obscuration

Size: 2.0" (5.3 cm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases, see SK-61045.

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- SK-PHOTO-W: 32°F to 122°F (0°C to 50°C)
- SK-PHOTO-T-W: 32°F to 100°F (0°C to 38°C)
- SK-PHOTO-R-W installed in a DNR/DNRW: -4°F to 158°F (-20°C to 70°C)

UL/ULC Listed Velocity Range: 0-4000 ft/min. (1219.2 m/min.), suitable for installation in ducts

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC ("ON")

DETECTOR SPACING AND APPLICATIONS

Silent Knight recommends spacing detectors in compliance with NFPA 72. In low airflow applications with smooth ceiling, space detectors 30 feet (9.1m). For specific information regarding detector spacing, placement, and special applications refer to NFPA 72. A *System Smoke Detector Application Guide*, document A05-1003, is available at www.systemsensor.com.

AGENCY LISTINGS AND APPROVALS

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. *Consult factory for latest listing status.*

- **UL Listed:** S6173
- **FM Approved**
- **CSFM:** 7272-0559:0512

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This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice.

Country of origin: Mexico

Honeywell Silent Knight

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Honeywell



SK-PULL-SA / SK-PULL-DA

Intelligent Pull Stations

The SK-PULL-SA is a single action pull station requiring only one motion to activate the station. The SK-PULL-DA is a dual action pull station requiring two motions to activate the station. The SK-PULL-SA and SK-PULL-DA are for use with Honeywell Silent Knight Series fire control panel (FACP).

Extremely easy to operate, the SK-PULL-DA and SK-PULL-SA provide a fast and practical means of manually initiating a fire alarm signal. The FACP recognizes each manual pull station by its specific address saving precious seconds in determining the location of an alarm.

INSTALLATION

The SK-PULL-SA and SK-PULL-DA can be surface mounted to an SB-I/O surface back box or semi-flush mounted on a standard single-gang with a minimum depth of 2.13"(5.40 cm) or double gang or 4" (10.61 cm) square electrical box. You can also use the optional (System Sensor® PN BG-TR) trim ring if the station is being semi-flush mounted.



SK-PULL-SA



SK-PULL-DA

FEATURES & BENEFITS

- Installer can open station without causing an alarm condition
- Dual-color LED is visible through handle of station blinks green to indicate normal operation and remains steady red in an alarm condition
- Key operated test and reset lock using lock plate actuator
- Key matches compatible FACP locks
- Meets ADA requirement for 5 lbs maximum pull force to active
- Meets the Americans with Disabilities Act Accessibility Guidelines (ADAAG) controls and operating mechanisms guidelines (Section 4.1.3[13])
- Shell, door, and handle molded from durable LEXAN®
- Reliable analog communications for trouble-free operation
- Braille text on station handle
- Rotary address switches for fast installation
- Handle latches in down position and the word Activated appears, clearly indicating the station has been pulled
- UL Listed, including UL 38, Standard of Manually Actuated Signaling System
- CSFM Listed
- MEA Listed

SK-PULL-SA / SK-PULL-DA Technical Specifications

PHYSICAL

Dimensions: 5.5" H x 4" W x 1.45" D (14 x 10.2 x 3.7cm)

Housing Material: LEXAN polycarbonate resin

Bi-Colored LED:

Blinking Green: Normal

Steady Red: Alarm

Switch: Single pole, single throw (SPST) normally open (N/O) switch which closes upon activation of the pull station

ELECTRICAL

Operating Voltage: 15 – 32VDC

SLC Standby and Alarm Current: 350 μ A

Wire Gauge: Up to 12AWG (3.1 mm²)

ENVIRONMENTAL

Operating Temperature: 32°F – 120°F (0°C – 49°C)

Humidity: 10% – 93% non-condensing

ORDERING INFORMATION

SK-Pull-SA: Single Action Pull Station

SK-Pull-DA: Dual Action Pull Station

ACCESSORIES

BG-TR: Optional trim ring.

SB-I/O: Surface backbox, indoor/outdoor.

* Unless otherwise noted, specifications apply to SK-Pull-SA and SK-Pull-DA

COMPATIBILITY

The SK-PULL-SA AND SK-PULL-DA are compatible with the following Honeywell Silent Knight fire alarm control panels:

6820: Addressable fire alarm control panel

6820EVS: Addressable fire alarm control panel with an emergency voice system.

6808: Addressable fire alarm control panel

6700: Addressable fire alarm control panel

5700: Addressable fire alarm control panel

5808: Addressable fire alarm control panel

5820XL: Addressable fire alarm control panel

5820XL-EVS: Addressable fire alarm control panel with an emergency voice system

For a complete listing of all compliance approvals and certifications, please visit www.silentknight.com.

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For Technical Support, call 800-446-6444.

For more information

Learn more about Honeywell Silent Knight and other products by visiting www.silentknight.com

Honeywell Silent Knight

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Honeywell



SK-RELAY

Intelligent Relay Module

The SK-RELAY is an addressable relay module for use with Honeywell Silent Knight Series fire alarm control panels (FACPs). The SK-RELAY allows a Silent Knight FACP to switch discrete contacts by code command. The relay contains two isolated sets of Form C contacts, which operate as a DPDT switch. No supervision is provided for the notification appliance circuit.

The SK-RELAY contacts can be used for virtually any normally open or normally closed application. Each SK-RELAY is programmed with a unique signaling line circuit (SLC) loop address. When an event occurs that controls the SK-RELAY, the relay is triggered by the FACP.

INSTALLATION

The SK-RELAY mounts directly into a 4" square electrical box. The box must have a minimum depth of 2-1/8". A surface mount electrical box (System Sensor® PN SMB500) is available from Silent Knight.



SK-RELAY

FEATURES & BENEFITS

- Two sets of Form C contacts
- Panel controlled status LED that flashes green in normal state and is solid red in alarm
- Polling LED visible through the cover plate
- Rotary address switches for fast installation
- Relay programming is completely flexible—can be mapped to zone conditions
- SEMS screws for easy wiring
- UL Listed
- Contacts are rated for a variety of amps (see Specifications)

SK-RELAY Technical Specifications

PHYSICAL

4.675" H x 4.275" W x 1.4" D

Shipping Weight: 6.3 oz (196 g)

ELECTRICAL

Operating Voltage: 15 – 32 VDC

End-of-Line Resistance: Not used

SLC Standby & Alarm Current: .255mA max @ 24VDC (one communication every 5 sec with LED enabled)

ENVIRONMENTAL

Operating Temperature: 32°F – 120°F (0°C – 49°C)

Humidity: 10% – 93% non-condensing

RELAY CONTACT RATINGS

3.0A @ 30VDC resistive

0.9A @ 110VDC resistive

0.9A @ 125VAC resistive

0.5A @ 125VAC inductive (PF = .35)

0.7A @ 75VAC inductive (PF = .35)

ORDERING INFORMATION

SK-RELAY: Relay Module

ACCESSORIES

SMB500: 4" Square Surface Mount Electrical Box

CB500 :Module Barrier

COMPATIBILITY

The SK-RELAY is compatible with the following Honeywell Silent Knight fire alarm control panels:

6820: Addressable fire alarm control panel

6820EVS: Addressable fire alarm control panel with an emergency mass notification system.

6808: Addressable fire alarm control panel

6700: Addressable fire alarm control panel

5700: Addressable fire alarm control panel

5808: Addressable fire alarm control panel

5820XL: Addressable fire alarm control panel

5820XL-EVS: Addressable fire alarm control panel with an emergency mass notification system.

For a complete listing of all compliance approvals and certifications, please visit www.silentknight.com.

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For more information

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SK-HEAT-W SERIES

Addressable Heat Detectors

The Silent Knight® SK-HEAT-W Series heat detectors are designed for both performance and aesthetics. A new modern, sleek, contemporary design and advanced thermal technologies make the SK-HEAT-W Series ideal for both system operation and building design.



The series includes a 135°F/57°C fixed-temperature, rate-of-rise, and a 180°F/88°C fixed high-temperature detectors and are direct replacements for the SK-HEAT Series heat detectors. The point ID address, set using rotary decimal switches, provide specific detector locations. These thermal detectors provide effective, intelligent property protection in a variety of applications.

- SK-HEAT-W offers 135°F fixed thermal detection.
- SK-HEAT-ROR-W offers 135°F fixed and rate-of-rise thermal detection.
- SK-HEAT-HT-W provides fixed high-temperature detection at 190°F.

FEATURES AND BENEFITS

- Designed to meet UL 268 7th Edition
- Sleek and stylish contemporary design
- Advanced thermal technology for fast response
- Fixed temperature model (SK-HEAT-W) factory preset to 135°F (57°C)
- Rate-of-rise model (SK-HEAT-ROR-W), 15°F (8.3°C) per minute
- High temperature model (SK-HEAT-HT-W) factory preset to 190°F (88°C)
- Addressable by device
- Rotary, decimal addressing (Refer to the Silent Knight panel manuals for device capacity)
- Two-wire SLC connection
- LEDs blink every time the unit is polled
- 360°-field viewing angle of the visual alarm indicators (two bi-color LEDs); LEDs blink green in Normal condition and turn on steady red in Alarm
- Integral communications and built-in device-type identification
- Remote test feature from the panel
- Built-in functional test switch activated by external magnet
- Walk test with address display (an address of 121 will blink the detector LED 12-(pause)-1)
- Low standby current
- Built-in tamper-resistant feature
- Designed for direct-surface or electrical-box mounting
- Sealed against back pressure
- Plugs into separate base for ease of installation and maintenance
- SEMS screws for wiring of the separate base
- Optional remote, single-gang LED accessory
- Optional sounder, relay, and isolator bases
- Optional flanged surface mounting kit

APPLICATIONS

Use thermal detectors for protection of property. For further information, refer to manual I56-6529, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

INSTALLATION

The SK-HEAT-W Series plug-in intelligent thermal detectors use a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector.

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see SK-61045.

Note: Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring.

Note: When using relay or sounder bases, consult the SK-ISO installation sheet I56-3627 for device limitations between isolator modules and isolator bases.

PRODUCT LINE INFORMATION

SK-HEAT-W: White, low-profile intelligent 135°F fixed thermal sensor

SK-HEAT-ROR-W: White, low-profile intelligent rate-of-rise thermal sensor

SK-HEAT-HT-W: White, low-profile intelligent 190°F fixed thermal sensor

B300-6: White, standard flanged low-profile mounting base

B300-6-BP: Bulk pack of B300-6, package contains 10

B300-6-IV: Ivory, standard flanged low-profile mounting base

B501-WHITE: White, standard European flangeless mounting base

B501-BL: Black, standard European flangeless mounting base

B501-IV: Ivory, standard European flangeless mounting base

B501-WHITE-BP: Bulk pack of B501-WHITE, contains 10

B200S-WH: White, Intelligent, programmable sounder base

B200S-IV: Ivory, Intelligent, programmable sounder base

B200SR-WH: White, Intelligent sounder base for retrofit applications

B200SR-IV: Ivory, Intelligent sounder base for retrofit applications

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base

B200SR-LF-WH: White, Low Frequency Intelligent sounder base for retrofit applications

B200SR-LF-IV: Ivory, Low Frequency Intelligent sounder base for retrofit applications

B224RB-WH: White, plug-in System Sensor® relay base

B224RB-IV: Ivory, plug-in System Sensor relay base

B224BI-WH: White, plug-in System Sensor isolator detector base

B224BI-IV: Ivory, plug-in System Sensor isolator detector base

ACCESSORIES

TR300: White, replacement flange for B210LP or B300-6 bases

TR300-IV: Ivory, replacement flange for B210LP or B300-6 bases

RA100Z(A): Remote 3 – 32 VDC LED annunciator, mounts to a U.S. single-gang electrical box, for use with B501 and B300-6 bases only

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: White, detector color kit, pack of 10

CK300-IV: Ivory, detector color kit, pack of 10

CK300-BL: Black, detector color kit, pack of 10

SK-HEAT-W SERIES TECHNICAL SPECIFICATIONS

PHYSICAL/ENVIRONMENTAL

Size: 2.0" (5.3 cm) high; base determines diameter

-**B300-6:** 6.1" (15.6 cm) diameter

-**B501:** 4" (10.2 cm) diameter

For a complete list of detector bases, see SK-61045.

Operating temperature range: SK-HEAT-W, SK-HEAT-ROR-W: -4°F to 100°F (-20°C to 38°C)

SK-HEAT-HT-W: -4°F to 150°F (-20°C to 66°C)

Detector spacing: UL approved for 50 ft. (15.24 m) center to center; FM approved for 25 x 25 ft. (7.62 x 7.62 m) spacing

Relative humidity: 10% – 93% non-condensing

Thermal ratings: Fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

ELECTRICAL SPECIFICATIONS

Voltage range: 15 – 32 volts DC peak

Standby current (max. avg.): 200uA @ 24 VDC (one communication every 5 seconds with LED enabled)

LED current (max.): 4.5mA @ 24 VDC ("ON")

AGENCY LISTINGS AND APPROVALS

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. *Consult factory for latest listing status.*

- **UL Listed:** S6228
- **FM Approved**
- **CSFM:** 7270-0559:0511

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Country of origin: Mexico