



Building Systems Submittal Package

**Summit Building
1501 39th Street
Puyallup, WA 98375
(Kessler Center Network)**

**Portable Addition 2022
Fire Alarm System TI**

June, 29th 2022

**Johnson Controls Fire Protection
9520 10th Avenue South, Suite 100
Seattle, WA 98108
Phone: 206-291-1400
Fax: 206-291-1500
www.JohnsonControls.com**

**Mcgann Electric
PO Box 940
Black Diamond, WA 98010
Phone: 425-241-3882
Contact: Jack Mcgann**



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Scheduling

Thank you for working with Johnson Controls on this project. We would like to take this opportunity to introduce you to the project team. **Cheryl Graves** is the Johnson Controls Project Manager assigned to this project to help with generic project information. **ERIC BECK** is the project system specialist to assist with drawings/design questions. **YVONNE THOMPSON** is available for scheduling technicians.

Office: (206) 291-1400

Fax: (206) 291-1500

In an effort to assist you in your installation we require you to arrange a Pre-Construction meeting with one of our Technicians. This meeting will allow your field foreman to ask any questions they may have in regard to the installation of your system. Based on the equipment quantities and current scope of work our Technician will need no less than 30 business days to complete all necessary programming and commissioning from the time the below checklist is complete prior to any AHJ testing. Please make sure this time is allowed for in the General Construction CPM schedule as it cannot be compressed. Change orders, change of scope, etc. may require additional time allotment to field personnel.

Installation Checklist

Johnson Controls is committed to providing the highest quality service available. As part of this service we want to ensure that the installation results in a trouble-free system. Please review the Checklist below and ensure each item is complete prior to our site visit.

A Technician will be dispatched only after the below checklist items have been completed. If these items are not completed prior to the visit by our technician, you may incur additional charges not covered by our quotation. Please feel free to contact our office if you have any questions.

- Fire Alarm Panel(s) have been mounted and all wiring (power, IDNET, signal, door-holders, etc.) pulled into panel(s).
- All wiring pulled into panel(s) or junction boxes have been permanently marked with wire markers and can easily be identified by a Johnson Controls
- System Power is supplied and on a dedicated circuit (Do Not Energize prior to Technician visit).
- All peripheral devices have been mounted (Smoke Detectors still covered).
- All end-of-line resistors have been installed.
- All alarm initiating circuits (smoke detectors, pull stations, etc.) have been checked for shorts, opens and grounds.
- All alarm notification circuits (speakers, horns, strobes, etc.) have been checked for shorts, opens and grounds.
- All remaining wiring (door-holders, FACP 24VDC, etc.) has been checked.
- Flows, Tamper, and Pressure Switches installed, properly wired and adjusted.
- All devices are properly protected against construction dust and contamination.
- Contact us immediately if there is no digital dialer or system monitoring provisions already in place. The dialer, phone lines and service will be required for system testing.
- There are no missing parts or equipment.



Hardware Warranty

- 1) JOHNSON CONTROLS WARRANTY STATEMENT:
 - a) JOHNSON CONTROLS WARRANTS TO THE PURCHASER OF NEW JOHNSON CONTROLS PRODUCT(S) THAT THE PRODUCTS SHALL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIAL.
- 2) WARRANTY PERIOD:
 - a) THE WARRANTY PERIOD WILL TERMINATE IMMEDIATELY FOLLOWING THE EARLIEST OCCURRENCE OF EITHER OF THE FOLLOWING:
 - i) 18 MONTHS HAVE ELAPSED FOLLOWING SHIPMENT OF ANY SYSTEM OR SUB-SYSTEM FROM JOHNSON CONTROLS TO THE CUSTOMER, OR
 - ii) 12 MONTHS HAVE ELAPSED FOLLOWING THE FINAL CONNECTION OPERATION AND BENEFICIAL USE OF ALL OR ANY PART OF THE SYSTEM.
 - iii) AS STATED IN THE SPECIFICATIONS AND/OR CONTRACT DRAWINGS
- 3) JOHNSON CONTROLS OBLIGATION UNDER THE TERMS OF THE WARRANTY:
 - a) JOHNSON CONTROLS'S SOLE RESPONSIBILITY SHALL BE TO REPAIR, ADJUST OR REPLACE, AT ITS OPTION, ANY JOHNSON CONTROLS PRODUCT WHICH FAILS DURING THIS PERIOD PROVIDING PURCHASER HAS PROMPTLY REPORTED SUCH FAILURE TO JOHNSON CONTROLS IN WRITING. REPLACEMENT PARTS WILL BE WARRANTED ONLY FOR THE BALANCE OF THE EQUIPMENT WARRANTY. JOHNSON CONTROLS AGREES TO CONTINUE TO HONOR ALL OF THE UNEXPIRED EXPRESSED WARRANTIES SPECIFIED ABOVE ON DEFECTIVE EQUIPMENT AFTER TRANSFER OF THE EQUIPMENT TO PURCHASER'S CUSTOMER, PROVIDED PURCHASER'S CUSTOMER ASSUMES THE PURCHASER'S OBLIGATIONS SPECIFIED BELOW.
 - b) EXCEPT FOR THE EXPRESSED WARRANTIES STATED HEREIN, JOHNSON CONTROLS DISCLAIMS ALL WARRANTIES ON PRODUCTS FURNISHED HEREUNDER, INCLUDING WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THE STATED WARRANTIES ARE IN LIEU OF ALL OBLIGATIONS OR LIABILITIES ON THE PART OF THE JOHNSON CONTROLS ARISING OUT OF OR IN CONNECTION WITH THE PERFORMANCE OF THE PRODUCTS. THE SELLER SHALL NOT BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE TO THE PRUCHASER OR USER OF THIS EQUIPMENT ARISING OUT OF THE FAILURE OF THE EQUIPMENT TO OPERATE IN EXCESS OF THE PURCHASE PRICE OF SAID EQUIPMENT.
 - c) JOHNSON CONTROLS MAKES NO WARRANTY AND NO WARRANTY SHALL BE DEEMED TO EXIST, THAT PURCHASER HOLDS THE GOODS FREE OF THE CLAIM OF ANY THIRD PERSON BYWAY OF PATENT INFRINGEMENT OR THE LIKE.
- 4) PURCHASER'S OBLIGATIONS UNDER THE TERMS OF THE WARRANTY.
 - a) THIS WARRANTY IS CONTINGENT UPON THE PROPER INSTALLATION AND USE OF THE PRODUCT(S). SUCH WARRANTY SHALL NOT APPLY IF THE PRODUCT FAILURE IS THE RESULT OF ACCIDENT, UNUSUAL PHYSICAL, ELECTRICAL OR ELECTROMECHANICAL STRESS, NEGLIGENCE, MISUSE, USER PROGRAMMING ERRORS, FAILURE OF ELECTRICAL POWER, AIR CONDITIONING OR HUMIDITY CONTROL, CONSTRUCTION DUST, DAMAGING FOREIGN SUBSTANCES, TRANSPORTATION OR CAUSES OTHER THAN MANUFACTURING DEFECT. PURCHASER AGREES TO PROVIDE FULL AND FREE ACCESS TO AUTHORIZED JOHNSON CONTROLS EMPLOYEES.
 - b) WARRANTY SERVICE HOURS
 - i) SERVICES PROVIDED UNDER THIS WARRANTY WILL BE PERFORMED DURING THE HOURS OF 8:00A.M. TO 5:00P.M., MONDAY THROUGH FRIDAY, EXCLUDING LOCALLY OBSERVED JOHNSON CONTROLS HOLIDAYS. OFF HOURS RESPONSE IS AVAILABLE AS AN EXTRA COST SERVICE OPTION.
- 5) WARRANTY EXCLUSIONS:
 - a) LABOR, TRAVEL, AND MILEAGE FOR:
 - i) SERVICE OUTSIDE OF JOHNSON CONTROLS NORMAL BUSINESS HOURS.
 - ii) PROGRAMMING AND/OR LABEL CHANGES.
 - iii) FAILURE DUE TO EXTERNAL CAUSES (LIGHTNING SURGES, CONSTRUCTION DUST, ETC.) OTHER THAN MANUFACTURING DEFECT.
 - b) ELECTRICAL WORK EXTERNAL TO THE EQUIPMENT SUPPLIED BY JOHNSON CONTROLS OR MAINTENANCE OF ACCESSORIES, ALTERATIONS, ATTACHMENTS OR OTHER DEVICES NOT FURNISHED BY JOHNSON CONTROLS.
 - c) BATTERIES.
 - d) COVERAGE OF EQUIPMENT CLASSED AS A WATER FLOW MONITORING/CONTROL DEVICES INSTALLED IN OR ON WATER PIPING.



Manufacturer's Recommendation

- 1) CONTRACTOR IS EXPECTED TO PULL AND TERMINATE ALL CONDUCTORS AND INSTALL ALL DEVICES FOR A COMPLETE AND OPERATING SYSTEM.
- 2) WHERE FAN SHUTDOWN, ELEVATOR RECALL OR SPECIAL AUXILIARY FUNCTIONS ARE REQUIRED, CONTRACTOR IS TO VERIFY WIRING REQUIREMENTS WITH THE JOHNSON CONTROLS FACTORY TECHNICIAN ASSIGNED TO THE PROJECT (IN MANY CASES, SPECIAL WIRING WILL NOT BE SHOWN ON THE DRAWINGS).
- 3) WHERE POSSIBLE, THE CONTRACTOR IS TO USE COLOR CODE FOR ALL WIRING.
- 4) SMOKE DETECTORS ARE NOT TO BE MOUNTED WITHIN 3 FEET OF AIR OUTLETS.
- 5) CONTRACTOR MUST NOT INSTALL SMOKE DETECTOR HEADS IN BASES OR DUCT HOUSING UNTIL FINAL CHECKOUT TIME TO ENSURE THAT DIRT OR DUST DOES NOT CONTAMINATE THE UNITS. DIRTY DETECTORS ARE NOT COVERED BY WARRANTY.
- 6) DO NOT POWER-UP SYSTEM UNTIL JOHNSON CONTROLS FACTORY TECHNICIAN IS PRESENT.
- 7) A SEPARATE GROUND (ISOLATION FROM CONDUIT GROUND) MUST BE PULLED TO ALL CABINETS.
- 8) LOADS GREATER THAN 10 AMPS (FOR AUXILIARY FUNCTIONS) ARE NOT ALLOWED IN THE SAME CONDUIT AS FIRE ALARM.
- 9) CONTRACTOR IS TO ENSURE THAT ALL WIRING AND SHIELDS ARE FREE OF SHORTS, GROUNDS AND OPENS.
- 10) UNDERGROUND WIRING MUST MAINTAIN ONE MEGAOHM, 20F RESISTANCE TO GROUND.
- 11) ANY MANUFACTURER'S RECOMMENDATION IN CONFLICT WITH ENGINEERING DRAWINGS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION. CONTRACTOR SHALL ADVISE JOHNSON CONTROLS OF ANY CHANGES.
- 12) PROTECTIVE COVERS ON SMOKE DETECTORS ARE NOT TO BE REMOVED UNTIL OWNERS ACCEPTANCE OF THE SYSTEM. (PREVENTS CONTAMINATION OF SMOKE CHAMBER).
- 13) IT IS THE CONTRACTOR'S RESPONSIBILITY TO REQUEST THE STATE OR LOCAL FIRE MARSHAL TO BE ON SITE FOR FINAL ACCEPTANCE AND CHECK OUT IF REQUIRED.
- 14) IT IS THE CONTRACTOR'S RESPONSIBILITY TO INVENTORY ALL EQUIPMENT RECEIVED FROM JOHNSON CONTROLS AGAINST THE CONTRACT DOCUMENTS AND REPORT ANY DISCREPANCIES WITHIN THIRTY (30) DAYS OR JOHNSON CONTROLS WILL ASSUME THE ORDER TO BE ACCURATE AND COMPLETE.
 - a) *NOTE: IN THE EVENT OF DISCREPANCIES IN THE NUMBER OF DEVICES SUPPLIED, THE FOLLOWING JOHNSON CONTROLS POLICY WILL APPLY:
 - i) TOO FEW DEVICES: IF THE DEVICE IS SHOWN ON THE CONTRACT DOCUMENTS AND HAS NOT BEEN ADDED AS A RESULT OF A POST BID ADDITION OR CHANGE ORDER, JOHNSON CONTROLS WILL SUPPLY THE DEVICE AT NO CHARGE TO THE CONTRACTOR OR END USER PER JOHNSON CONTROLS'S CONTRACT OBLIGATIONS.
 - ii) TOO MANY DEVICES: IF THE DEVICE SHOWN IS EXTRA, DUE TO A POST BID ADDITION OR CHANGE ORDER; IT REMAINS THE PROPERTY OF THE CONTRACTOR OR END USER. IF THE DEVICE IS EXTRA DUE TO AN ERROR IN QUANTITIES SUPPLIED, THE DEVICE MUST BE RETURNED TO JOHNSON CONTROLS. NO CREDIT WILL BE ISSUED FOR THE RETURN OF EXTRA EQUIPMENT ABOVE THE QUANTITIES GIVEN IN THE CONTRACT DOCUMENTS.
- 15) OWNERS PRESENCE FOR FINAL DEMONSTRATION AND ACCEPTANCE.



Special Instructions - Johnson Controls

- 1) JOHNSON CONTROLS WILL PROVIDE WIRING INSTRUCTIONS FOR INSTALLATION OF JOHNSON CONTROLS EQUIPMENT.
- 2) JOHNSON CONTROLS WILL PROVIDE A FACTORY TRAINED TECHNICIAN TO ASSIST IN TRAINING:
 - a) OPERATION OF THE CONTROL PANEL AND FUNCTIONS
 - b) ALARM TEST OF ALL JOHNSON CONTROLS PERIPHERAL DEVICES (SMOKE DETECTOR, MANUAL PULL STATION, ETC.)
 - c) SUPERVISE TEST OF ALL INITIATING, SIGNALING, AND CONTROL CIRCUITS.
- 3) JOHNSON CONTROLS WILL PROVIDE (1) INSTRUCTION AT FINAL TEST OF THE SYSTEM TO:
 - a) OWNER REPRESENTATIVE
 - b) FIRE INSPECTOR AND ELECTRICAL INSPECTOR
 - c) ARCHITECT AND ENGINEER
- 4) UPON COMPLETION OF FINAL TEST, JOHNSON CONTROLS WILL PROVIDE:
 - a) TEST REPORT
 - b) CERTIFICATION (IF REQUIRED)
 - c) ONE YEAR WARRANTY



Testing Procedure for Devices

GENERAL:

FOR ALL DEVICES (SUPPLIED BY JOHNSON CONTROLS) VISUALLY VERIFY PROPER LOCATION AND INSTALLATION.

SMOKE DETECTOR:

ACTIVATE THE DEVICE USING A SMOKE GENERATOR AND VERIFY ALARM CONDITION ON PANEL. RESET PANEL AND VERIFY RESET OF SMOKE DETECTOR AND PANEL. TEST FOR ALARM VERIFICATION IF APPROPRIATE.

HEAT DETECTOR:

FIXED TEMPERATURE REPLACEMENT ELEMENT - REMOVE ELEMENT ON HEAT DETECTOR TO INITIATE ALARM AND VERIFY ALARM CONDITION AT PANEL. REINSTALL ELEMENT, RESET SYSTEM, AND VERIFY.

NON-REPLACEABLE ELEMENT - NON-REPLACEABLE ELEMENT HEAT DETECTORS CAN ONLY BE TESTED FOR CONTINUITY.

RATE-OF-RISE DETECTORS - RATE OF RISE DETECTORS ARE TESTED WITH A HEATER OR BLOW DRYER UNTIL THEY INITIATE ALARM, THEN ALLOWED TO COOL. RESET PANEL AND VERIFY.

PULL STATIONS:

ACTIVATE STATION WITH THE T-HANDLE, VERIFY ALARM AND LABEL FOR LOCATION, RESET STATION, RESET PANEL.

DUCT DETECTOR:

(IF PROVIDED BY JOHNSON CONTROLS) WITH AIR HANDLING UNIT TURNED ON, OPEN ONE OF THE TEST PORT HOLES BY REMOVING THE RED COVER ON THE DUCT DETECTOR/SENSOR HOUSING. USING AN EXTENDED NOZZLE ON THE SMOKE DETECTOR AEROSOL TESTER SPRAY A FOUR TO EIGHT SECOND BURST OF AEROSOL THROUGH THE TEST PORT BUT NOT DIRECTLY AT THE DETECTOR/SENSOR HEAD. THE NOZZLE OF THE SMOKE DETECTOR AEROSOL TESTER SHOULD NOT EXTEND BEYOND THE INLET TUBE. AEROSOL IS SPRAYED INTO THE STREAM OF INCOMING AIR AND NOT DIRECTLY INTO DETECTOR/SENSOR. VERIFY ALARM, TEST ALL INDICATORS OR MANUAL TEST SWITCHES, RESET DETECTOR, RESET PANEL, TEST SAMPLE AND REFERENCE TUBE FOR POSITIVE AIR FLOW. (IF NOT PROVIDED BY JOHNSON CONTROLS) VERIFY THAT ZONE CIRCUIT IS PRESENT AT THE DEVICE.

AUDIBLES AND VISIBLES:

ACTIVATE ALARM AND CONFIRM THAT ALL INDICATING APPLIANCES, AUDIBLES AND VISIBLES, ARE OPERATING.

DOOR HOLDERS:

VERIFY THAT DOORS CLOSE ON ALARM.

VALVE SUPERVISORY SWITCHES (TAMPER):

(IF PROVIDED BY JOHNSON CONTROLS) ACTIVATE SWITCH BY MOVING VALVE OFF NORMAL, VERIFY STATUS CHANGE, RESET SWITCH, RESET PANEL. (IF NOT PROVIDED BY JOHNSON CONTROLS) VERIFY THAT ZONE CIRCUIT IS PRESENT AT THE SWITCH.

FLOW SWITCHES AND PRESSURE SWITCHES:

(IF PROVIDED BY JOHNSON CONTROLS) ACTIVATE SWITCH (WITH SPRINKLER CONTRACTOR PRESENT) BY A FLOW OF WATER, VERIFY STATUS CHANGE, RESET SWITCHES, RESET PANEL. (IF NOT PROVIDED BY JOHNSON CONTROLS) VERIFY THAT ZONE CIRCUIT IS PRESENT AND SUPERVISED AT THE SWITCH.

FAN/DAMPER CONTROL CIRCUITS:

VERIFY (WITH HVAC CONTRACTOR PRESENT) THAT THE CONTROL CIRCUIT IS OPERATING, AND THE DEVICES IS BEING CONTROLLED IN ACCORDANCE WITH THE SPECIFIED SEQUENCE OF OPERATION.

ELEVATOR CONTROL CIRCUITS:

VERIFY (WITH ELEVATOR CONTRACTOR PRESENT) THAT THE ELEVATOR IS BEING CONTROLLED IN ACCORDANCE WITH THE SPECIFIED SEQUENCE OF OPERATION.

TRAINING:

JOHNSON CONTROLS SHALL PROVIDE A ONE TRAINING SESSION TO THE CUSTOMER.

WARRANTY:

THE SYSTEM SHALL BE PROVIDED WITH A ONE YEAR HARDWARE WARRANTY.



Equipment List & Data Sheets Fire Alarm System

<u>Quantity</u>	<u>Product ID</u>	<u>Product Description</u>
3	4098-9714	Photo Smoke Sensor Head (Addressable)
3	4098-9792	Sensor Base (Addressable)
1	4099-9004	Manual Pull Station (Addressable)
1	49AV-WWF	Horn/Strobe, MC, Wall, White (Addressable)
1	49AV-APPLW-O	Weatherproof Horn/Strobe, MC, Wall, White (Addressable)
1	49WPBB-AVVOWR	Weatherproof backbox
1	49AVC-WRFIRE-O	Red Cover
1	CUSTOM	Graphic Map

Equipment List Subject to Change.

Features

TrueAlarm analog sensing provides:

- Digital transmission of analog sensor values via IDNet or MAPNET II two-wire communications

For use with the following Simplex® products:

- 4007ES, 4010, 4010ES, 4100ES, and 4100U Series control panels; and 4008 Series control panels with reduced feature set (refer to data sheet S4008-0001 for details)
- 4020, 4100, and 4120 Series control panels, Universal Transponders, and 2120 TrueAlarm CDTs equipped for MAPNET II operation

Fire alarm control panel provides:

- Peak value logging allowing accurate analysis of each sensor for individual sensitivity selection
- Sensitivity monitoring satisfying NFPA 72 sensitivity testing requirements; automatic individual sensor calibration check verifies sensor integrity
- Automatic environmental compensation, multi-stage alarm operation, and display of sensitivity directly in percent per foot
- Ability to display and print detailed sensor information in plain English language

Photoelectric smoke sensors provide:

- Seven levels of sensitivity from 0.2% to 3.7% (refer to additional information on page 3)

Heat sensors provide:

- Three fixed temperature sensing thresholds: 135° F, 155° F and 190° F
- Rate-of-rise temperature sensing
- Utility temperature sensing
- Listed to UL 521 and ULC-S530

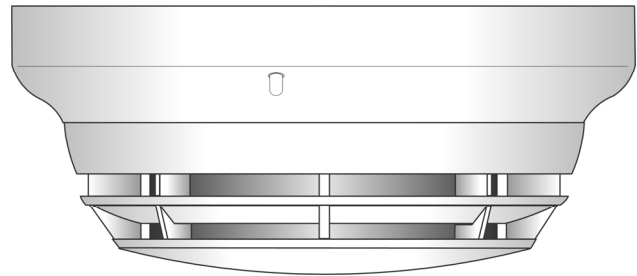
General features:

- Operation is for ceiling or wall mounting
- Listed to UL 268 and ULC-S529
- Louvered smoke sensor design enhances smoke capture by directing flow to chamber; entrance areas are minimally visible when ceiling mounted
- Designed for EMI compatibility
- Magnetic test feature is provided
- Different bases are available to support a supervised or unsupervised output relay, and/or a remote LED alarm indicator

Additional base reference:

- For isolator bases, refer to data sheet S4098-0025
- For sounder bases, refer to data sheet S4098-0028
- For photo/heat sensors, refer to data sheet S4098-0024 (single address) and S4098-0033 (dual address)

* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7272-0026:218, 7271-0026:231, 7270-0026:216, and 7300-0026:217 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable, contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.



4098-9714 TrueAlarm Photoelectric Sensor Mounted in Base

Description

Digital Communication of Analog Sensing. TrueAlarm analog sensors provide an analog measurement digitally communicated to the host control panel using Simplex addressable communications. At the control panel, the data is analyzed and an average value is determined and stored. An alarm or other abnormal condition is determined by comparing the sensor's present value against its average value and time.

Intelligent Data Evaluation. Monitoring each sensor's average value provides a continuously shifting reference point. This software filtering process compensates for environmental factors (dust, dirt, etc.) and component aging, providing an accurate reference for evaluating new activity. With this filtering, there is a significant reduction in the probability of false or nuisance alarms caused by shifts in sensitivity, either up or down.

Control Panel Selection. Peak activity per sensor is stored to assist in evaluating specific locations. The alarm set point for each TrueAlarm sensor is determined at the host control panel, selectable as more or less sensitive as the individual application requires.

Timed/Multi-Stage Selection. Sensor alarm set points can be programmed for timed automatic sensitivity selection (such as more sensitive at night, less sensitive during day). Control panel programming can also provide multi-stage operation per sensor. For example, a 0.2% level may cause a warning to prompt investigation while a 2.5% level may initiate an alarm.

Sensor Alarm and Trouble LED Indication. Each sensor base's LED pulses to indicate communications with the panel. If the control panel determines a sensor is in alarm, or is dirty or has some other type of trouble, the details are annunciated at the control panel and that sensor base's LED will be turned on steadily. During a system alarm, the control panel will control the LEDs such that an LED indicating a trouble will return to pulsing to help identify the alarmed sensors.

TrueAlarm Sensor Bases and Accessories

Sensor Base Features

Base mounted address selection:

- Address remains with its programmed location
- Accessible from front (DIP switch under sensor)

General features:

- Automatic identification provides default sensitivity when substituting sensor types
- Integral red LED for power-on (pulsing), or alarm or trouble (steady on)
- Locking anti-tamper design mounts on standard outlet box
- Magnetically operated functional test

Sensor Bases

4098-9792, Standard Sensor Base

4098-9789, Sensor Base with wired connections for:

- 2098-9808 Remote LED alarm indicator or 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

Supervised Relay Bases (not compatible with 2120 CDT):

- **4098-9791, 4-Wire Sensor Base**, use with remote or locally mounted 2098-9737 relay, requires separate 24 VDC
- **4098-9780, 2-Wire Sensor Base**, use with remote or locally mounted 4098-9860 relay, no separate power required
- Supervised relay operation is programmable and can be manually operated from control panel
- Includes wired connections for remote LED alarm indicator or 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

Sensor Base Options

2098-9737, Remote or local mount supervised relay:

- DPDT contacts for resistive/suppressed loads, power limited rating of 3 A @ 28 VDC; non-power limited rating of 3 A @ 120 VAC (requires external 24 VDC coil power)

4098-9860, Remote or local mount supervised relay:

- SPDT dry contacts, power limited rating of 2 A @ 30 VDC, resistive; non-power limited rating of 0.5 A @ 125 VAC, resistive

4098-9822, LED Annunciation Relay:

- Activates when base LED is on steady, indicating local alarm or trouble
- DPDT contacts for resistive/suppressed loads, power limited rating of 2 A @ 28 VDC; non-power limited rating of 1/2 A @ 120 VAC, (requires external 24 VDC coil power)

4098-9832, Adapter plate:

- Required for surface or semi-flush mounting to 4" square electrical box and for surface mounting to 4" octagonal box
- Can be used for cosmetic retrofitting to existing 6-3/8" diameter base product

2098-9808, Remote red LED Alarm Indicator:

- Mounts on single gang box (shown in illustration to right)



Description

TrueAlarm sensor bases contain integral addressable electronics that constantly monitor the status of the detachable photoelectric or heat sensors. Each sensor's output is digitized and transmitted to the system fire alarm control panel every four seconds.

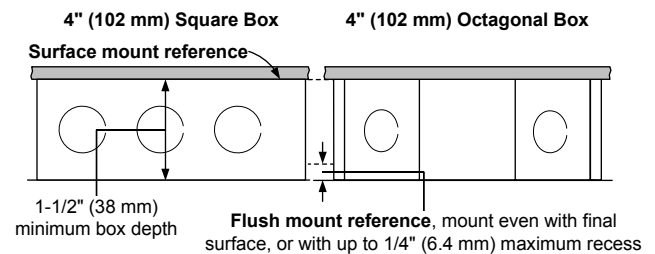
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing them to be disabled), heat sensors may be installed without reprogramming the control panel. Although the control panel will indicate an incorrect sensor type, the heat sensor will operate at a default sensitivity providing heat detection for building protection at that location.

Mounting Reference

Electrical Box Requirements: (boxes are by others)

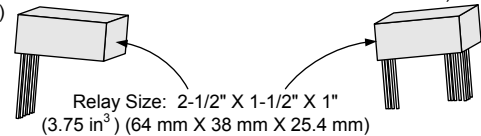
Without relay in the box: 4" octagonal or 4" square, 1-1/2" deep; single gang, 2" deep

With relay in the box: 4" octagonal or 4" square, 1-1/2" deep, with 1-1/2" extension ring

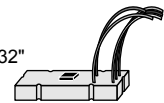


2098-9737 Supervised Relay (mounts in base electrical box or remotely)

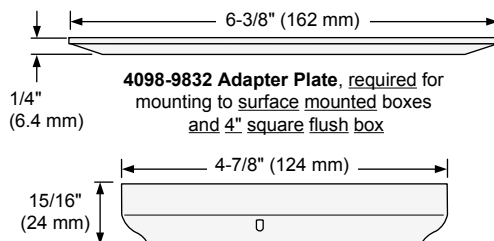
4098-9822 Relay (mounts in base electrical box)



4098-9860 Supervised Relay (mounts in base electrical box or remotely; 2-3/8" X 1-1/4" X 11/32" (1 in³) (60.4 mm X 31.8 mm X 8.6 mm))



NOTE: Review total wire count, wire size, and accessories being wired to determine required box volume.



TrueAlarm Bases
4098-9780, 4098-9789, 4098-9791, & 4098-9792

TrueAlarm Sensors

Features

Sealed against rear air flow entry

Interchangeable mounting

EMI/RFI shielded electronics

Heat sensors:

- Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation
- Rated spacing distance between sensors:

Fixed Temp. Setting	UL & ULC Spacing	FM Spacing, Either Fixed Temperature Setting
135° F / 190° F* (57.2° C / 88° C)	60 ft x 60 ft (18.3 m)	20 ft x 20 ft (6.1 m) for fixed temperature only; RTI = Quick
155° F (68° C)	40 ft x 40 ft (12.2 m)	50 ft x 50 ft (15.2 m) for fixed temperature with either rate-of-rise selection; RTI = Ultra Fast

*Note: 190° F (88° C) ratings apply only to the 4098-9734 sensor.

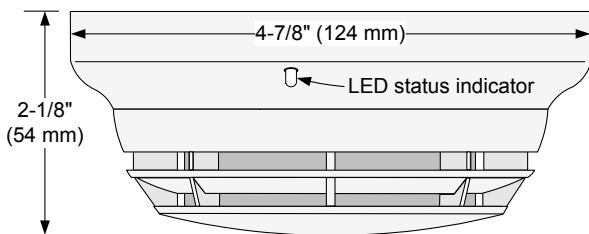
Smoke Sensors:

- Photoelectric technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

4098-9714 Photoelectric Sensor

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then monitored at the fire alarm control panel.*

The sensor head design provides 360° smoke entry for optimum response to smoke from any direction. Due to its photoelectric operation, air velocity is not normally a factor, except for impact on area smoke flow.



4098-9714 Photoelectric Sensor with Base

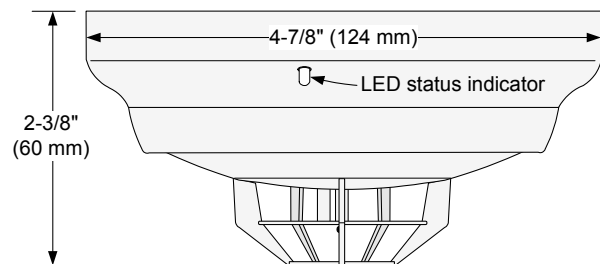
4098-9733 and 4098-9734 Heat Sensors

TrueAlarm heat sensors are self-restoring and provide rate compensated, fixed temperature sensing, selectable with or without rate-of-rise temperature sensing. Due to its small thermal mass, the sensor accurately and quickly measures the local temperature for analysis at the fire alarm control panel.

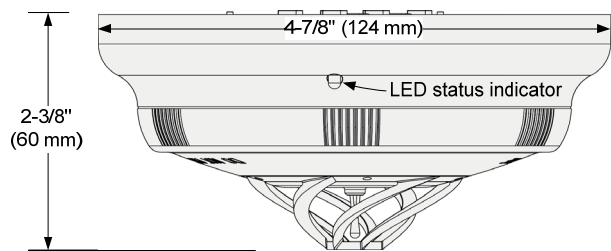
Rate-of-rise temperature detection is selectable at the control panel for either 15° F (8.3° C) or 20° F (11.1° C) per minute. Fixed temperature sensing is independent of rate-of-rise sensing and programmable to operate at 135° F (57.2° C) or 155° F (68° C). The 4098-9734 sensor provides an additional 190° F (88° C) set point.

In a slow developing fire, the temperature may not increase rapidly enough to operate the rate-of-rise feature. However, an alarm will be initiated when the temperature reaches its rated fixed temperature setting.

TrueAlarm heat sensors can be programmed as a utility device to monitor for temperature extremes in the range from 32° F to 155° F (0° C to 68° C). This feature can provide freeze warnings or alert to HVAC system problems. *Refer to specific panels for availability.*



4098-9733 Heat Sensor with Base



4098-9734 High Temperature Heat Sensor with Base

WARNING: In most fires, hazardous levels of smoke and toxic gas can build up before a heat detection device would initiate an alarm. In cases where Life Safety is a factor, the use of smoke detection is highly recommended.

Application Reference

Sensor locations should be determined only after careful consideration of the physical layout and contents of the area to be protected. Refer to NFPA 72, the *National Fire Alarm and Signaling Code*. On smooth ceilings, smoke sensor spacing of 30 ft (9.1 m) may be used as a guide.*

* For detailed application information including sensitivity selection, refer to Installation Instructions 574-709.

TrueAlarm Analog Sensing Product Selection Chart

TrueAlarm Sensor Bases (for use with Sensors 4098-9714 and 4098-9733)

(Refer to Application Manual 574-709 and Installation Instructions 574-707 for additional information)

Model*	Color	Description	Compatibility	Mounting Requirements
4098-9792	White	Standard Sensor Base	No options	4" octagonal or 4" square box, 1-1/2" min. depth; or single gang box, 2" min. depth
4098-9776	Black			
4098-9789	White	Sensor Base with connections for Remote LED Alarm Indicator or Unsupervised Relay	2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	4" octagonal or 4" square box Note: Box depth requirements depend on total wire count and wire size, refer to accessories list below for reference. ** NOTE: 4098-9791 and 4098-9780 are NOT compatible with the 2120 CDT
4098-9789 IND	White			
4098-9775	Black			
4098-9791**	White	4-Wire Sensor Supervised Relay Base with connections for LED Indicator or Unsupervised Relay	2098-9737 Supervised Remote Relay 2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	
4098-9780**	White	2-Wire Sensor Supervised Relay Base with connections for LED Indicator or Unsupervised Relay	4098-9860 Supervised Remote Relay 2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	

TrueAlarm Sensors

Model*	Model*	Description	Compatibility	Mounting Requirements
4098-9714	White	Photoelectric Smoke Sensor	Bases 4098-9775, 4098-9776, 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Refer to base requirements
4098-9714 IND				
4098-9774	Black			
4098-9733	White	Heat Sensor		
4098-9734	White	High Temperature Heat Sensor		

TrueAlarm Sensor/Base Accessories

Model	Description	Compatibility	Mounting Requirements
2098-9737	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9791 base	Remote Mounting requires 4" octagonal or 4" square box, 1-1/2" minimum depth
4098-9860	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9780 base	Base Mounting requires 4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
2098-9808	Remote Red LED Alarm Indicator on single gang stainless steel plate	Bases 4098-9789, 4098-9791, and 4098-9780	Single gang box, 1-1/2" minimum depth
4098-9822	Unsupervised Relay, tracks base LED status; Note: Mounts only in base electrical box	Bases 4098-9789, 4098-9791, and 4098-9780	4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Required for surface or semi-flush mounted 4" square box and for surface mounted 4" octagonal box

* Note: Model numbers ending in IND are assembled in India.

Specifications

General Operating Specifications

Communications and Sensor Supervisory Power	IDNet or MAPNET II communications, auto-selected, 1 address per base	
Communications Connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm ² to 2.08 mm ²)	
Remote LED Alarm Indicator Current	1 mA typical, no impact to alarm current	
Remote LED Alarm Indicator and Relay Connections	Color coded wire leads, 18 AWG (0.82 mm ²)	
UL Listed Operating Temperature Range	32° to 100° F (0° to 38° C)	
Operating Temperature Range	with 4098-9733 Heat Sensor	32° to 122° F (0° to 50° C)
	with 4098-9714 Smoke Sensor	15° to 122° F (-9° to 50° C)
	With 4098-9734 Heat Sensor	32° to 150° F (0° to 66° C)
Storage Temperature Range	0° F to 140° F (-18° C to 60° C)	
Humidity Range	10 to 95% RH	
4098-9714 Smoke Sensor Air Velocity Rating	0-4000 ft/min (0-1220 m/min)	
Housing Color	Frost White or Black	

4098-9791 Base With Supervised Remote Relay 2098-9737 (see page 2 for contact ratings)

Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	270 µA, from 24 VDC supply
Alarm Current with 2098-9737 Relay	28 mA, from 24 VDC supply

4098-9780 Base With Supervised Remote Relay 4098-9860 (see page 2 for contact ratings)

Power	Supplied from communications
-------	------------------------------

4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789, 4098-9791, and 4098-9780 (see page 2 for contact ratings)

Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	Supplied from communications
Alarm Current	13 mA from separate 24 VDC supply

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Features

Individually addressable manual fire alarm stations with:

- Power and data supplied via IDNet or MAPNET II addressable communications using a single wire pair
- Operation that complies with ADA requirements
- Visible LED indicator that flashes during communications and is on steady when the station has been activated
- The NO GRIP Single Action Station and Retrofit Kit are available with a more easily operated pull lever for applications where anticipated users may find the standard station lever difficult to activate
- Pull lever that protrudes when alarmed
- Break-rod supplied (use is optional)
- Models are available with single or double action (breakglass or push) operation
- UL listed to Standard 38

Compatible with the following Simplex® control panels:

- Model Series 4007ES, 4008, 4010, 4010ES, 4100ES, 4100U, 4020, 4100, and 4120 fire alarm control panels equipped with either IDNet or MAPNET II communications
- Model Series 2120 Communicating Device Transponders (CDTs) equipped with MAPNET II communications

Compact construction:

- Electronics module enclosure minimizes dust infiltration
- Allows mounting in standard electrical boxes
- Screw terminals for wiring connections

Tamper resistant reset key lock (keyed same as Simplex fire alarm cabinets)

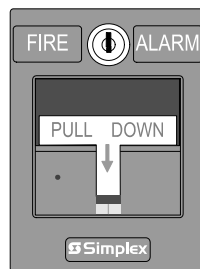
Multiple mounting options:

- Surface or semi-flush with standard boxes or matching Simplex boxes
- Flush mount adapter kit
- Adapters are available for retrofitting to commonly available existing boxes

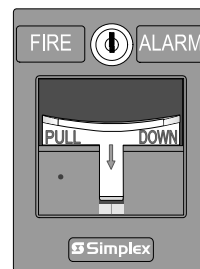
Description

The Simplex addressable manual station combines the familiar Simplex manual station housing with a compact communication module that is easily installed to satisfy demanding applications. Its integral individual addressable module (IAM) constantly monitors status and communicates changes to the connected control panel via IDNet or MAPNET II communications wiring.

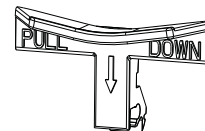
* Refer to page 2 for specific model listings. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7150-0026:224 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.



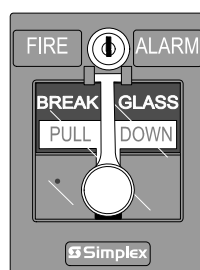
4099-9004
Single action



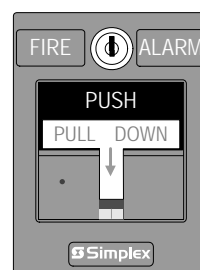
4099-9021
NO GRIP
Single action



4099-9805
NO GRIP
Retrofit kit



4099-9005
Breakglass



4099-9006
Push



With 2099-9828
Institutional
Cover kit

Operation

Activation of the 4099-9004 single action manual station requires a firm downward pull to activate the alarm switch. Completing the action breaks an internal plastic break-rod (visible below the pull lever, use is optional). The use of a break-rod can be a deterrent to vandalism without interfering with the minimum pull requirements needed for easy activation. The pull lever latches into the alarm position and remains extended out of the housing to provide a visible indication.

Single Action NO GRIP Station 4099-9021. For applications such as California Building Code, Title 24, which requires “Controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist” the model 4099-9021 station provides a more easily operated pull lever compared to standard stations. Retrofit of existing stations is available using the 4099-9805 Retrofit kit.

Double Action Stations (Breakglass) require the operator to strike the front mounted hammer to break the glass and expose the recessed pull lever. The pull lever then operates as a single action station.

Double Action Stations (Push Type) require that a spring loaded interference plate (marked PUSH) be pushed back to access the pull lever of the single action station.

Station reset requires the use of a key to reset the manual station lever and deactivate the alarm switch. (If the break-rod is used, it must be replaced.)

Station testing is performed by physical activation of the pull lever. Electrical testing can be also performed by unlocking the station housing to activate the alarm switch.

Addressable Manual Station Product Selection

Addressable Manual Stations, Red Housing with White Letters and White Pull Lever

Model	Description	Housing	Pull Lever	Listings
4099-9004	Single Action, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM
4099-9004CB	Single Action, Bilingual English and French	FEU FIRE	TIREZ PULL	ULC
4099-9004CF	Single Action, French	ALARME FEU	ABAISEZ	
4099-9004PO	Single Action, Portuguese	FOGO ALARME	PUXE	UL, FM
4099-9004SP	Single Action, Spanish	ALARMA FUEGO	JALE	
4099-9005	Double Action, Breakglass operation, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM
4099-9005PO	Double Action, Breakglass operation, Portuguese	FOGO ALARME	PUXE	UL, FM
4099-9005SP	Double Action, Breakglass operation, Spanish	ALARMA FUEGO	JALE	
4099-9006	Double Action, Push operation, English	FIRE ALARM	PUSH PULL DOWN	UL, ULC, FM, CSFM
4099-9006PO	Double Action, Push operation, Portuguese	FOGO ALARME	EMPURRE PUXE	UL, FM
4099-9006SP	Double Action, Push operation, Spanish	ALARMA FUEGO	EMPUJE JALE	
4099-9021	Single Action NO GRIP operation, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM

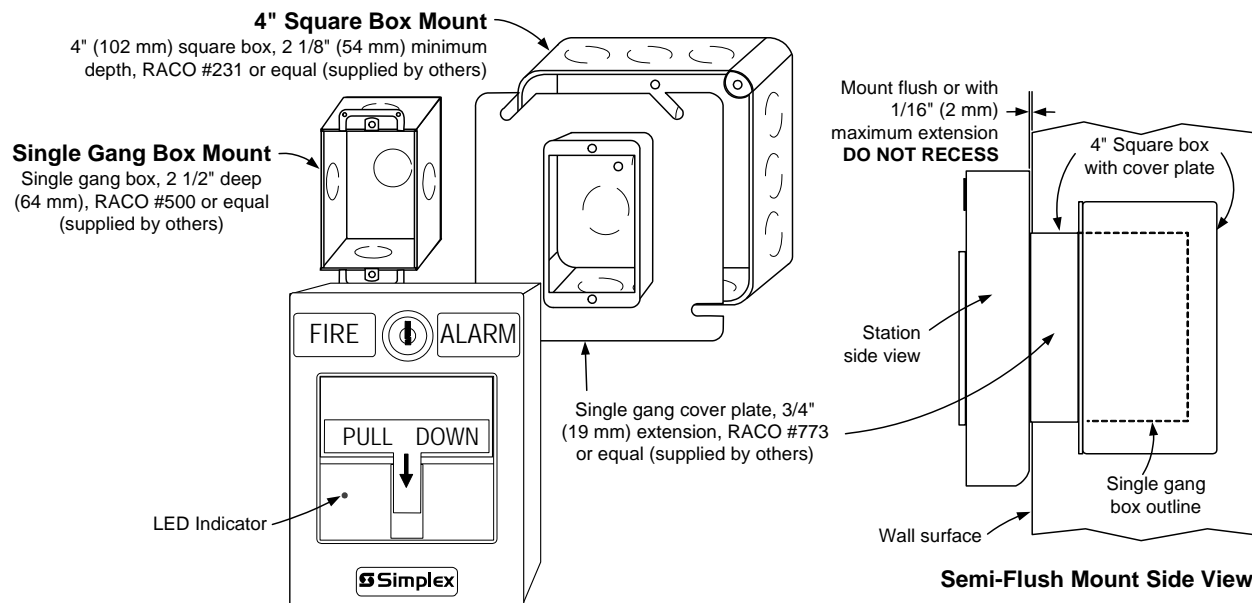
Accessories (refer to pages 3 and 4 for details)

Model	Description	Model	Description
2975-9022	Cast aluminum surface mount box, red	2099-9803	Replacement breakglass
2975-9178	Surface mount steel box, red	2099-9804	Replacement break-rod
2099-9813	Semi-flush trim plate for double gang switch box, red	2099-9828	Institutional cover kit for field installation on 4099-9004; Note: Covers LED indicator
2099-9819	Flush mount adapter kit, black	2099-9814	Surface trim plate for Wiremold box V5744-2, red
2099-9820	Flush mount adapter kit, beige		
4099-9805	Retrofit Kit for field conversion of a single action station to a NO GRIP station; refer to Installation Instructions 579-1007 for details		

Specifications (refer to Installation Instructions 579-1135 for additional information)

Power and Communications	IDNet or MAPNET II communications, 1 address per station
Address Means	DIP switch, 8 position
Wire Connections	Screw terminal for in/out wiring, for 18 to 14 AWG wire (0.82 mm ² to 2.08 mm ²)
UL Listed Temperature Range	32° to 120° F (0° to 49° C) intended for indoor operation
Humidity Range	Up to 93% RH at 100° F (38° F)
Housing Color	Red with white raised lettering
Material	Housing and pull lever are Lexan polycarbonate or equal
Pull Lever Color	White with red raised lettering
Housing Dimensions	5" H x 3 3/4" W x 1" D (127 mm x 95 mm x 25 mm)

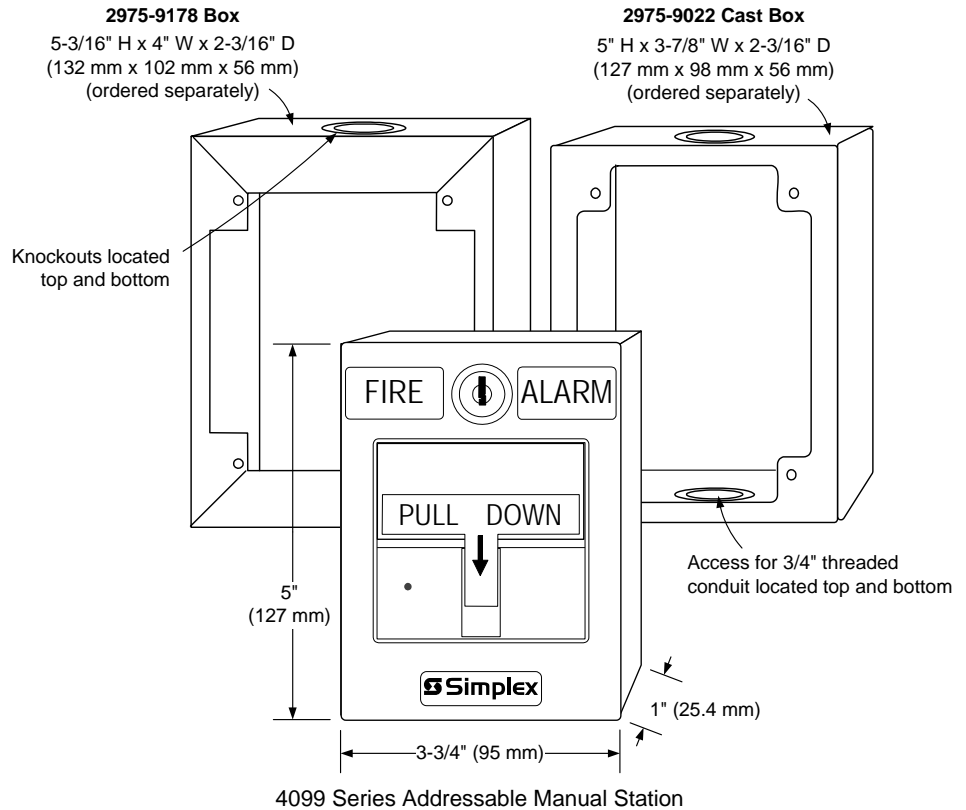
Addressable Manual Station Semi-Flush Mounting



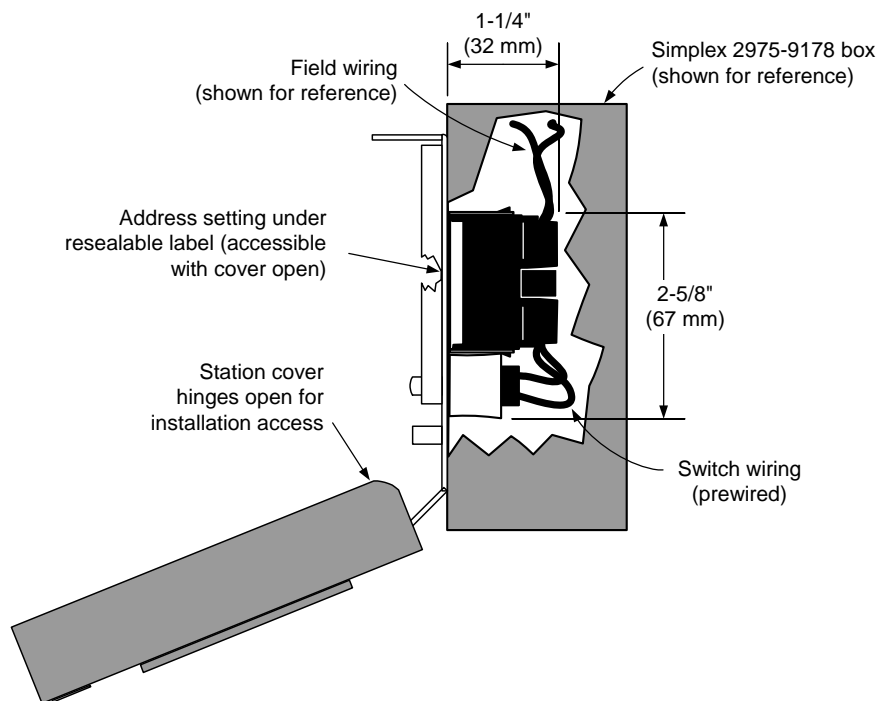
Addressable Manual Stations Surface Mounting

Preferred Mounting. For surface mounting of these addressable manual stations, the preferred electrical boxes are shown in the illustration to the right.

Additional Mounting Reference. Refer to page 4 for Wiremold box mounting compatibility.



Surface Mount Side View with Internal Detail



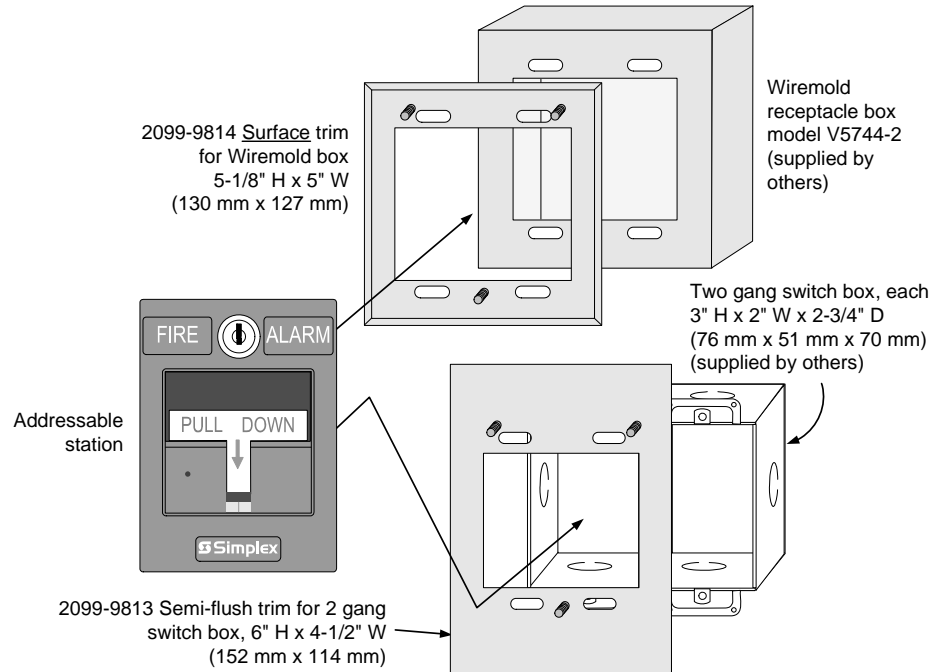
Application Reference

Refer to NFPA 72, the *National Fire Alarm and Signaling Code*, and all applicable local codes for complete requirements for manual stations. The following summarizes the basic requirements.

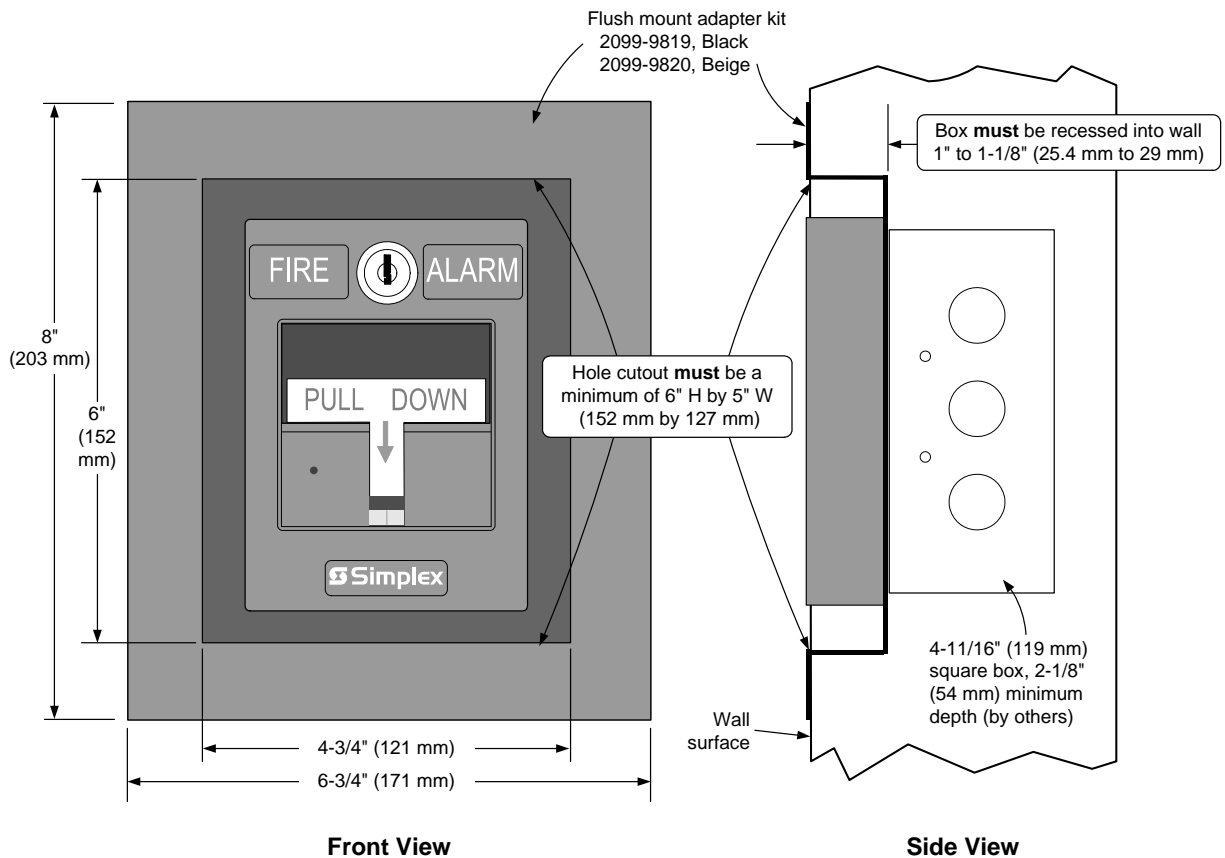
1. Stations shall be located in the normal path of exit and distributed in the protected area such that they are unobstructed and readily accessible.
2. Mounting shall be with the operable part not less than 42 in (1.07 m) and not more than 48 in (1.22 m) above floor level.
3. At least one station shall be provided on each floor. Additional stations shall be provided to obtain a travel distance not more than 200 ft (61 m) to the nearest station from any point in the building.
4. When manual station coverage appears limited in any way, additional stations should be installed.

Addressable Manual Station, Additional Mounting Information

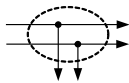
For retrofit and new installations, additional compatible mounting boxes and the required adapter plates are shown in the illustration to the right.



Addressable Manual Station, Flush Mounting Information



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Features

Individually addressed and controlled multi-candela TrueAlert ES A/V (audible/visible) notification appliances provide:

- Multi-candela xenon strobe with synchronized 1 Hz flash rate and with intensity *programmable from the control panel* or jumper selected as 15, 30, 75, 110, 135, or 185 cd
- Advanced addressable notification controlled by **IDNAC SLCs** providing *regulated 29 VDC* allowing strobes to operate with lower current even under battery backup
- Wiring supervision to each appliance allowing “T-tapped” connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)
- **Self-Test Mode** allows on-board sensors to detect the strobe and horn output and then report their status to the control panel
- **TrueAlert Device Reports** at the control panel detailing appliance point ID, custom label, type, and candela setting (see sample on page 3)
- **Magnet Test diagnostics** to assist checkout and testing of appliances and wiring
- **Electrical test point access** without removing cover
- Compatibility with ADA requirements; (refer to important installation information on page 3)
- Compatibility with legacy TrueAlert addressable systems for upgrade and replacement (see page 4)
- Strobe operation is listed to UL Standard 1971 and ULC Standard S526; Horn operation is listed to UL Standard 464 and ULC Standard S525

LED Indicator and Magnet Test feature:

- Appliance LED can be selected to display each polling cycle to indicate appliance supervision
- When the controller is in diagnostic mode, the Magnet Test pulses the LED to indicate appliance address and can be set to also briefly flash the strobe and sound the horn

Mechanical design features include:

- Rugged, high impact, flame retardant thermoplastic housing in red with white letters or white with red letters, with clear lens, available with FIRE, FEU, ALERT, FEU/FIRE, or blank lettering
- Separate covers are available to change application type on-site or for replacement
- A separate mounting plate allows wiring to be completed before appliance is mounted; use with single gang, double gang, or 4-inch square box, flush or surface mount
- Covers can be easily removed without disturbing the connected housing and avoiding trouble conditions
- In/out wiring terminals for 18 AWG to 12 AWG
- Optional mounting adapters are available to cover surface mounted electrical boxes and to adapt to Simplex 2975-9145 boxes
- Optional red wire guards (see page 2 for details)



TrueAlert ES Addressable A/Vs are Available in Red with White Lettering and White with Red Lettering

Features (Continued)

Audible notification appliance (horn):

- Harmonically rich output sound for either coded or steady operation
- Horns sound as Temporal Code 3, March Time pattern, continuous; or Temporal Code 4, controlled separately from visible appliances on the same two-wire circuit
- Selectable March Time rates of 20, 60, or 120 beats per minute
- Output is “high” or “low” (~5 dBA difference) selectable at the appliance or from the controller with FACP mode selected at the appliance

Description

TrueAlert ES addressable A/Vs are individually addressed audible/visible notification appliances that receive power, supervision, and control signals from a Simplex fire alarm control panel providing **IDNAC** Signaling Line Circuits (SLCs). (See compatibility list on page 4.)

Strobe Application Reference

Proper selection of visible notification is dependent on occupancy, location, local codes, and proper applications of: the *National Fire Alarm Code* (NFPA 72), ANSI A117.1; the appropriate model building code: BOCA, ICBO, or SBCCI; and the application guidelines of the Americans with Disabilities Act (ADA).

* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7125-0026:0373 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

TrueAlert ES Operation Advantage

TrueAlert ES addressable appliances on IDNAC SLCs provide separate visible and audible notification using a single two-wire circuit that also *confirms connection to the individual notification appliance's electronic circuit*. This operation increases circuit supervision integrity by providing supervision that extends beyond the appliance wiring connections.

Reduced current allows efficient IDNAC SLC operation. With *IDNAC SLCs*, a *constant 29 VDC* source voltage is maintained, even during battery standby, allowing strobes to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby. Efficiencies include wiring distances up to 2 to 3 times farther than with conventional notification, or support for more appliances per IDNAC SLC, or use of smaller gauge wiring, or combinations of these benefits, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

Reducing Installation and Testing Time. With separate controls on the same two-wire SLC, installation time and expense for both retrofit and new construction can be significantly reduced. When Class B wiring is used, *wiring can be "T" tapped*, allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency. Use of Self-Test and Magnet Test features improve installation efficiency. TrueAlert device reports conveniently identify information about each connected appliance.

Product Selection

TrueAlert ES Wall Mount Addressable Audible/Visible Appliances

TrueAlert ES addressable A/V appliances include cover and matching mounting plate except as noted; Dimensions with Cover = 5 1/8" H x 5" W x 2 5/8" D (130 mm x 127 mm x 67 mm)

Model*	Cover Color	Wording	Lens Color	Model*	Cover Color	Wording	Lens Color
49AV-WRF(-BA)	Red	FIRE	Clear	49AV-WRS(-BA)	Red	Blank	Clear
49AV-WWF(-BA)	White			49AV-WWS-BA	White		
49AV-WRQ	Red	FEU		49AV-APPLW	Select cover and mounting plate separately		

Separate Mounting Plate

Model	Color	Model	Color	Note
49MP-AVVOWR	Red	49MP-AVVOWW	White	Mounting Plate is required when ordering model 49AV-APPLW

Separate Covers (Required when ordering model 49AV-APPLW)

Model*	Color	Wording	Model*	Color	Wording
49AVC-WRFIRE	Red	FIRE	49AVC-WRFEU	Red	FEU
49AVC-WWFIRE	White		49AVC-WWFEU	White	
49AVC-WRALT	Red	ALERT	49AVC-WRBLNG	Red	FEU/FIRE
49AVC-WWALT	White		49AVC-WWBLNG	White	
49AVC-WRS	Red	Blank	49AVC-WWS	White	Blank

* **Note:** (-BA) indicates model is available either with or without the -BA suffix. Model numbers ending in -BA, APPLW models, and separate mounting plates are assembled in the USA.

Mounting Adapters and Wire Guard

Model	Color	Description	Dimensions
4905-9937	Red	Surface Mount Adapter Skirt	5 3/8" H x 5 1/4" W x 1 5/8" D (136 mm x 133 mm x 41 mm) Total depth with strobe = 4 3/8" (111 mm)
4905-9940	White		
4905-9931	Red Adapter Plate for mounting to Simplex 2975-9145 Box (typically for retrofit, mount vertical or horizontal)		8 5/16" x 5 3/4" x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145	Red Mounting Box, requires 4905-9931 Adapter Plate		7 7/8" x 5 1/8" x 2 3/4" D (200 mm x 130 mm x 70 mm)
4905-9961	Red wire guard with mounting plate, compatible with semi-flush or surface mount boxes		6 1/16" H x 6 1/16" W x 3 1/8" D (154 mm x 154 mm x 79 mm)

TrueAlert ES Diagnostics

Test Features. When IDNAC SLCs are in diagnostic mode, *Self-Test* and *Magnet Test* features provide individual appliance testing. With the *Self-Test* feature, *appliance operation can be confirmed without leaving the control panel*. Additionally, each appliance's LED can be selected to pulse when it receives a supervision poll during normal operation.

Self-Test Details. Selecting Self-Test Mode from the control panel allows on-board sensors, depending on the device type, to detect its own strobe and/or horn output and then report their status to the control panel. Operation is by selected VNAC appliance groups and is either automatic (all briefly simultaneously activated) or individually activated by applying a magnet. (Refer to control panel data sheet for more Self-Test information, see list on page 4.)

Silent Appliance Magnet Test. In this test mode, in response to application of a magnet, the appliance LED pulses sequentially to conveniently indicate the appliance's address.

Operational Appliance Magnet Test. In this test mode, after the address is indicated by pulsing the appliance LED, the strobe will briefly flash and the horn will briefly sound to indicate proper operation.

TrueStart Instrument Two (TSIT). The 2nd generation of the Simplex TrueStart Test Instrument adds testing of IDNAC SLC wiring and TrueAlert ES appliances to its ability to test IDCs, NACs, and IDNet communications *before connection to the control panel*. Please contact your local Simplex representative for additional information.

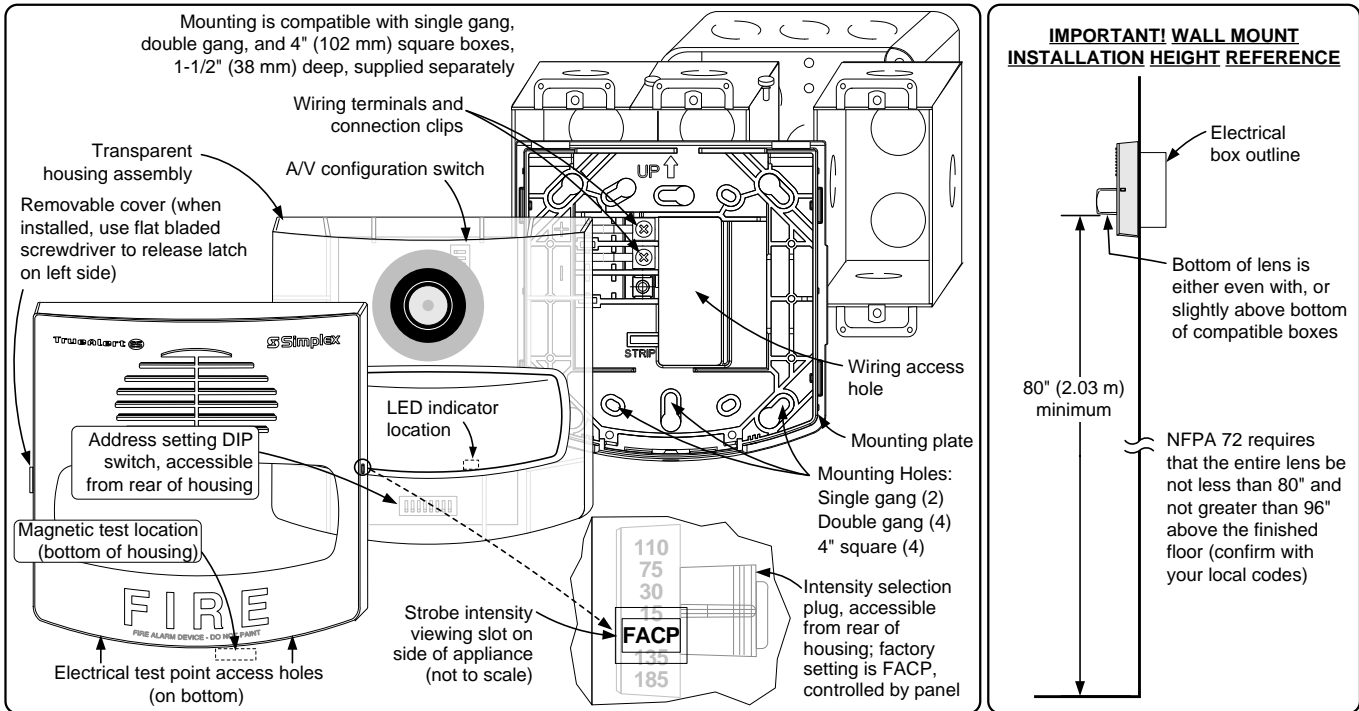
TrueAlert Addressable Wiring Isolator

Isolator Model 4905-9929 is available for remote mounting on TrueAlert addressable circuits to isolate short circuited wiring from functioning wiring. (See data sheet S4905-0001.)

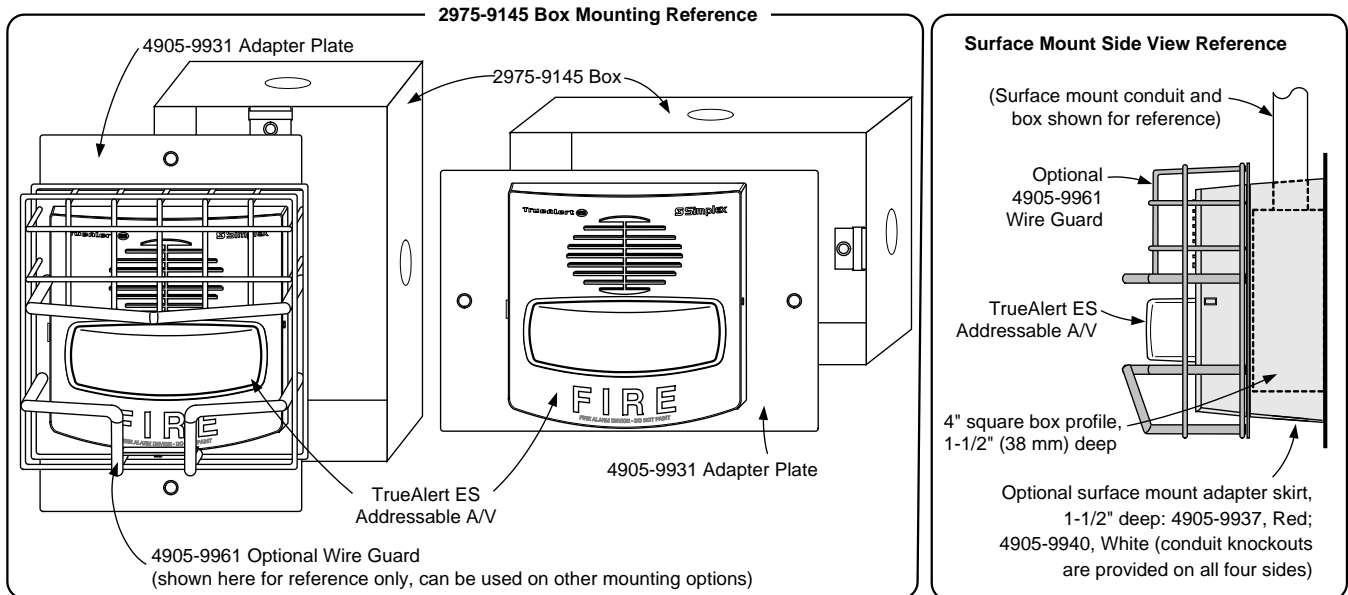
TrueAlert Device Reports Reference

Service Port		Page 1	
REPORT 5 : TrueAlert Device Report		12:34:56am	TUE 27-Jan-15
POINT ID	CUSTOM LABEL	DEVICE TYPE	CANDELA
T14-1-1	Location Label . . . up to 40 characters	V/O	15
T14-1-2	Break Room 5	A/V	110
T14-1-3	Boiler Room	A/V	75
T14-1-4	Elec. Room 7	A/V	135

Installation Reference



Adapter Plate and Surface Mount Installation Reference



IDNAC SLC Controller Compatibility Reference

Compatible Controllers	Data Sheet Reference	Controller Output	IDNAC SLC Output Voltage	Appliance Voltage Design Reference
4100ES with EPS+ or EPS Power Supply	S4100-0100	IDNAC SLC	29 VDC (regulated)	23 VDC (with 6 VDC drop)
4009 IDNAC Repeater	S4009-0004			
4007ES with IDNAC Notification	S4007-0002			
4010ES with ESS Enhanced System Supply	S4010-0011			

TrueAlert ES AV Specifications

Electrical Ratings	Typical Operating Voltage Range	23 VDC to 31 VDC, Special Application (see below for 17 VDC rating)
	Supervisory Requirements	1 unit load (= 0.8 mA control panel current)
	IDNAC SLC Loading	Maximum of 127 addresses per SLC, 139 unit loads

Sound Output Ratings @ 10 ft (3 m) @ 23 VDC (with IDNAC SLCs)

Sound Type/Setting	Steady/High	Steady/Low	Coded/High	Coded/Low
Reverberant Chamber, UL 464 Test	90.1 dBA	83.6 dBA	85.7 dBA	80.1 dBA
Anechoic Chamber, ULC 525 Test	94.1 dBA	88.1 dBA	94.1 dBA	88.1 dBA

Sound Output Dispersion per ULC S541 Anechoic Testing

Horizontal	-3 dBA @ 50°; -6 dBA @ 63°; left and right from center					
Vertical	-3 dBA @ 20° above, 48° below; -6 dBA @ 65° above, 60° below; ref. to center					
Candela Setting	15 cd	30 cd	75 cd	110 cd	135 cd	185 cd
23 VDC RMS Current Ratings, with horn on continuous at high setting	59 mA	67 mA	107 mA	139 mA	166 mA	215 mA

General Specifications

Sound Characteristics	2400 to 3700 Hz sweep, modulated at 120 Hz rate	Connections	Terminal blocks on mounting plate for 18 AWG to 12 AWG (0.82 mm ² to 3.31 mm ²); two wires per terminal for in/out wiring
Temperature Range	32° to 122° F (0° to 50° C)		
Humidity Range	10% to 93%, non-condensing @ 104° F (40° C)		
Installation Instructions	579-1031		

IDNAC SLC Wiring Specifications

(refer to control panel installation instructions for more information)	UTP, unshielded twisted pair recommended
	Maximum wire length allowed with "T-Taps" for Class B wiring per SLC = 10,000 ft (3048 m)
	Maximum wire length to any appliance = 4000 ft (1219 m)

Note: UL 464 test coded values are typical of the output measured with a Temporal or a March Time pattern and with a sound level meter reading on a "fast" setting. Under the same test conditions, coded horn output "peak" sound level readings are typically 4 dBA higher. Anechoic horn output ratings are typically more representative of actual installed sound output.

TrueAlert ES AV LEGACY Compatibility Reference

Compatible Controller	Data Sheet Reference	Controller Output	Available Strobe Intensity	Available Horn Control	Appliance Voltage Minimum
4100ES or 4100U with TrueAlert Power Supply	S4100-0031	TrueAlert Addressable SLC	15, 30, 75, and 110 cd	Continuous, Temporal Code 3, and March Time of 60 or 120 bpm	17 VDC
4009 TPS, Remote TrueAlert Power Supply	S4100-0037				
TrueAlert Addressable Controller (4009T)	S4009-0003				

Electrical Ratings Differences for Legacy Applications (refer to above specifications for other ratings)

	Voltage Range	17 VDC to 31 VDC, Special Application			
Sound Output Ratings @ 10 ft (3 m) @ 17 VDC	Sound Type/Setting	Steady/High	Steady/Low	Coded/High	Coded/Low
	Reverberant Chamber, UL 464 Test	87.8 dBA	81.6 dBA	83.4 dBA	77.0 dBA
	Anechoic Chamber, ULC 525 Test	91.7 dBA	85.4 dBA	91.7 dBA	85.4 dBA
	Candela Setting	15 cd	30 cd	75 cd	110 cd
17 VDC RMS Current Ratings, with horn on continuous at high setting, use when connected to TrueAlert Addressable SLCs per above		74 mA	85 mA	140 mA	185 mA

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Features



Figure 1: Weatherproof A/V (top) and Strobe (bottom), side view of A/V on Weatherproof Mounting Boxes (right)

TrueAlert ES weatherproof addressable appliances provide visible and audible/visible notification for indoor and outdoor, extended temperature and extended humidity applications. They are individually addressed and receive power, supervision, and control signals from a Simplex fire alarm control unit providing IDNAC Signaling Line Circuits (SLCs).

Individually addressed and controlled multi-candela TrueAlert ES weatherproof notification appliances for extended temperature and humidity range provide:

- Multi-candela xenon strobe with synchronized 1 Hz flash rate and with intensity programmable from the control unit or jumper selected as 15, 75, WP 75, or WP 185 cd
- Advanced addressable notification controlled by IDNAC SLCs providing regulated 29 VDC allowing strobes to operate with lower current even under battery backup
- Wiring supervision to each appliance allowing "T-tapped" connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)
- Self-Test Mode allows on-board sensors to detect the strobe and horn output and then report their status to the control unit
- TrueAlert Device Reports at the control unit detailing appliance point ID, custom label, type, and candela setting
- Magnet Test diagnostics to assist checkout and testing of appliances and wiring
- Electrical test point access without removing cover

LED Indicator and Magnet Test:

- Appliance LED can be selected to display each polling cycle to indicate appliance supervision
- When the controller is in diagnostic mode, the Magnet Test pulses the LED to indicate appliance address and can be set to also briefly flash the strobe and sound the A/V horn

Mechanical design:

- Rugged, high impact, flame retardant thermoplastic housing in red with white letters or white with red letters, with clear lens
- Standard models are available with FIRE lettering or blank; configured models are available with additional lettering of FEU, FEU/FIRE, ALERT,

and blank

- Mounting matches weatherproof boxes (required), ordered separately
- Separate covers are available to change application type on-site or for replacement
- In/out wiring terminals for 18 AWG to 12 AWG
- Enclosure is rated NEMA 3R
- Convenient wiring terminal access at front of housing

Agency listings:

- UL 1638 listed for outdoor applications with strobe rated at 75 cd (WP75) or 185 cd (WP185)
- UL 1971 listed for indoor applications with strobe intensity selectable as 15 or 75 cd; indoor applications are compatible with ADA requirements
- Horn operation is listed to UL Standard 464
- Refer to data sheet *S49WP-0002* for ULC listed models

For A/V Models with horn:

- Harmonically rich output sound for either coded or steady operation
- Horns sound as Temporal Code 3, March Time pattern, continuous; or Temporal Code 4, controlled separately from visible appliances on the same two-wire circuit
- Selectable March Time rates of 20, 60, or 120 beats per minute
- Output is "high" or "low" (~5 dBA difference) selectable at the appliance or from the controller with FACU mode selected at the appliance

Strobe Application Reference

Proper selection of visible notification is dependent on occupancy, location, local codes, and proper applications of: the National Fire Alarm Code (NFPA 72), ANSI A117.1; the appropriate model building code: BOCA, ICBO, or SBCCI; and the application guidelines of the Americans with Disabilities Act (ADA).

TrueAlert ES Operation

Separate visible and audible notification

TrueAlert ES addressable appliances on IDNAC SLCs provide separate visible and audible notification using a single two-wire circuit that also confirms connection to the individual notification appliance's electronic circuit. This operation increases circuit supervision integrity by providing supervision that extends beyond the appliance wiring connections.

Reduced current allows efficient IDNAC SLC operation

With IDNAC SLCs, a constant 29 VDC source voltage is maintained, even during battery standby, allowing strobes to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby. Efficiencies include wiring distances up to 2 to 3 times farther than with conventional notification, or support for more appliances per IDNAC SLC, or use of smaller gauge wiring, or combinations of these benefits, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

Reduced Installation and Testing Time.

With separate controls on the same two-wire SLC, installation time and expense for both retrofit and new construction can be significantly reduced. When Class B wiring is used, wiring can be "T" tapped, allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency. Use of Self-Test and Magnet Test features improves installation efficiency. TrueAlert device reports conveniently identify information about each connected appliance.

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7125-0026:0371 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

TrueAlert ES Diagnostics

Test Features

When IDNAC SLCs are in diagnostic mode, Self-Test and Magnet Test features provide individual appliance testing. With the Self-Test feature, appliance operation can be confirmed without leaving the control unit. Additionally, each appliance's LED can be selected to pulse when it receives a supervision poll during normal operation.

Self-Test Details

Selecting Self-Test Mode from the control unit allows on-board sensors, depending on the device type, to detect its own strobe and/or horn output and then report their status to the control unit. Operation is by selected VNAC appliance groups and is either automatic (all briefly simultaneously activated) or individually activated by applying a magnet.

Silent Appliance Magnet Test

In this test mode, in response to the application of a magnet, the appliance LED pulses sequentially to conveniently indicate the appliance's address.

Operational Appliance Magnet Test

In this test mode, after the address is indicated by pulsing the appliance LED, the strobe will briefly flash and the A/V horn will briefly sound to indicate proper operation.

TrueStart Instrument Two (TSIT)

The 2nd generation of the Simplex TrueStart Test Instrument adds testing of IDNAC SLC wiring and TrueAlert ES appliances to its ability to test IDCs, NACs, and IDNet communications before connection to the control unit. Please contact your local Simplex representative for additional information.

TrueAlert Addressable Wiring Isolator

Isolator Model 4905-9929 is available for remote mounting on TrueAlert addressable circuits to isolate short circuited wiring from functioning wiring. Refer to data sheet *S4905-0001* for additional information.

Weatherproof Appliance Installation

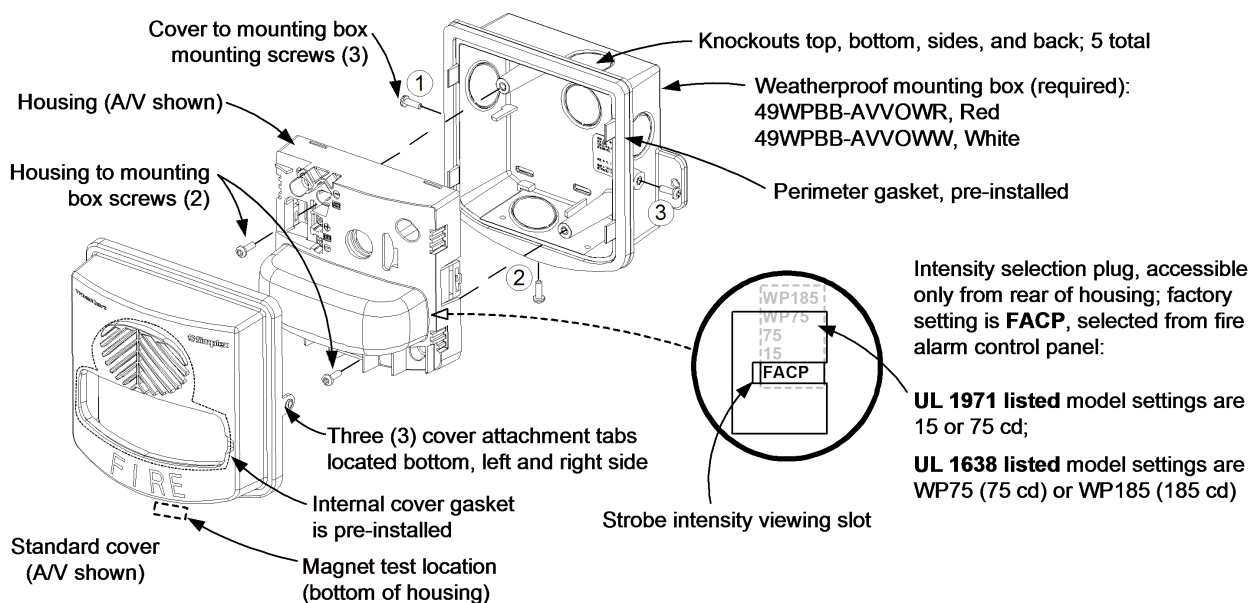


Figure 2: Weatherproof Appliance Installation

Dimension and Mounting Height Reference

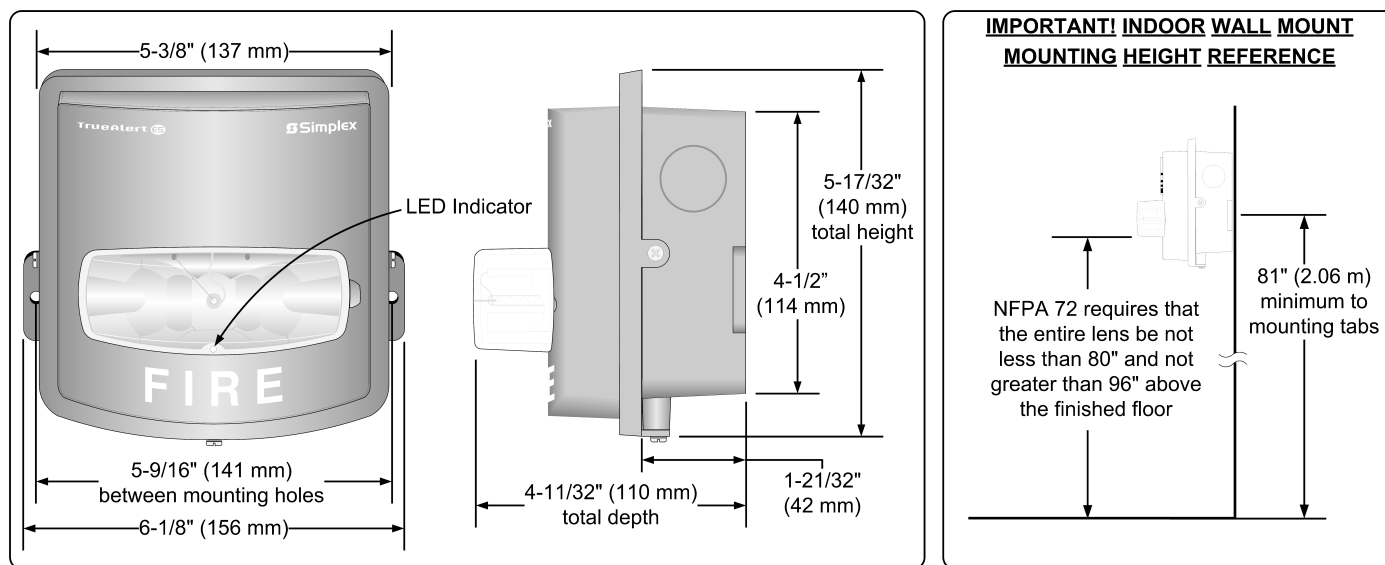


Figure 3: Dimension and Mounting Height

IDNAC SLC Controller Compatibility Reference

Table 1: IDNAC SLC Controller Compatibility Reference

Compatible Controllers	Data Sheet	Controller Output	IDNAC SLC Output Voltage	Appliance Voltage
4100ES with EPS+ or EPS Power Supply	S4100-0100	IDNAC SLC	29 VDC (regulated)	23 VDC (with 6 VDC drop)
4009 IDNAC Repeater	S4009-0004			
4007ES with IDNAC Notification	S4007-0002			
4010ES with ESS Enhanced System Supply	S4010-0011			

Product Selection

Note: Model numbers ending in -BA are assembled in the USA

Table 2: UL Listed TrueAlert ES Addressable Weatherproof Notification Appliances

Type	Model	Cover Color	"FIRE" Lettering	Description	Intensity Ratings	
					UL 1971	UL 1638
Strobe (V/O) A	49VO-WRFO	Red	White	UL listed weatherproof TrueAlert ES addressable appliance; requires weatherproof box, see below Note: (-BA) indicates model is available either with or without the -BA suffix; model numbers ending in -BA are assembled in the USA	15 cd or 75 cd	75 cd (setting WP75) or 185 cd (setting WP185)
	49VO-WRFO-BA		Blank			
	49VO-WRSO	Red	Blank			
	49VO-WRSO-BA					
	49VO-WWFO	White	Red			
	49VO-WWFO-BA					
	49VO-APPLW-O	order cover separately				
49VO-APPLW-O-BA						
Horn/Strobe (AV)	49AV-WRFO	Red	White			
	49AV-WRFO-BA		White			
	49AV-WWFO	White	Red			
	49AV-WWFO-BA					
	49AV-APPLW-O	order cover separately				
49AV-APPLW-O						

Note: Separate covers are required when ordering 49VO-APPLW-O, 49VO-APPLW-O-BA, 49AV-APPLW-O-BA or 49AV-APPLW-O.

Table 3: Wall Mount Weatherproof Boxes (Required)

Model	Color	Description	Dimensions
49WPBB-AVVOWR	Red	Surface Mount Weatherproof Mounting Box (required)	5 1/2" H x 6 1/8" W x 1 5/8" D (140 mm x 156 mm x 41 mm)
49WPBB-AVVOWW	White		

Table 4: Separate Covers

Wording	Red VO Cover Models	Red AV Cover Models	White VO Cover Models	White AV Cover Models
FIRE	49VOC-WRFIRE-O	49AVC-WRFIRE-O	49VOC-WWFIRE-O	49AVC-WWFIRE-O
ALERT	49VOC-WRALT-O	49AVC-WRALT-O	49VOC-WWALT-O	49AVC-WWALT-O
FEU	49VOC-WRFEU-O	49AVC-WRFEU-O	49VOC-WWFEU-O	49AVC-WWFEU-O
FEU/FIRE	49VOC-WRBLNG-O	49AVC-WRBLNG-O	49VOC-WWBLNG-O	49AVC-WWBLNG-O
Blank	49VOC-WRS-O	49AVC-WRS-O	49VOC-WWS-O	49AVC-WWS-O

Specifications

Table 5: Electrical specifications

Specifications	Rating
Typical Operating Voltage Range	23 VDC to 31 VDC, Special Application
Supervisory Requirements	1 unit load (= 0.8 mA control panel current)
IDNAC SLC Loading	Maximum of 127 addresses per SLC, 139 unit loads
Temperature Range	UL 1971 Listed Rating
	UL 1638 Listed Rating
Humidity Range	UL 1971 Listed Rating
	UL 1638 Listed Rating
IDNAC SLC Wiring Specifications (refer to control panel installation instructions for more information)	UTP, unshielded twisted pair recommended
	Maximum wire length allowed with "T-Taps" for Class B wiring per SLC = 10,000 ft (3048 m)
	Maximum wire length to any appliance = 4000 ft (1219 m)
Connections	Terminal blocks for 18 AWG to 12 AWG (0.82 mm ² to 3.31 mm ²); two wires per terminal for in/out wiring
Installation Instructions	579-1032

Table 6: A/V Horn Output Ratings @ 10 ft (3 m) @ 23 VDC

Sound Type	Steady/High	Steady/Low	Coded/High	Coded/Low
Reverberant Chamber, UL 464 Test	81.3 dB	73.8 dB	76.4 dB	69.9 dB
Anechoic Chamber, ULC 525 Test	87.4 dB	81.0 dB	87.2 dB	80.6 dB

Note: UL 464 test coded values are typical of the output measured with a Temporal or a March Time pattern and with a sound level meter reading on a "fast" setting. Under the same test conditions, coded horn output "peak" sound level readings are typically 4 dBA higher. Anechoic horn output ratings are typically more representative of actual installed sound output.

Table 7: 23 VDC RMS Current Ratings

Model	Rating	Temperature	Candela Setting	Current
V/O Models	UL 1971 Ratings	32 °F to 120 °F (0 °C to 49 °C)	15 cd	60 mA
			75 cd	160 mA
	UL 1638 Ratings	32 °F to 150 °F (0 °C to 66 °C)	WP75 cd	160 mA
			WP185 cd	185 mA
A/V Models, horn on continuous, high setting	UL 1971 Ratings	32 °F to 120 °F (0 °C to 49 °C)	15 cd	80 mA
			75 cd	165 mA
	UL 1638 Ratings	32 °F to 150 °F (0 °C to 66 °C)	WP75 cd	163 mA
			WP185 cd	189 mA
		-31 °F to below 32 °F (-35 °C to 0 °C)	WP75 cd	212 mA
			WP185 cd	239 mA
		-31 °F to below 32 °F (-35 °C to 0 °C)	WP75 cd	238 mA
			WP185 cd	274 mA

Table 8: UL 1638 WP75 and WP185 Light Output Reference

Angle	On-Axis	Vertical, Below Axis		Horizontal, Left/Right of Axis	
	0°	45°	90°	45°	90°
WP75 Minimum Candela Rating (over temp. range)	75 cd	69 cd	17 cd	60 cd	28 cd
WP75 Typical Candela at 77 °F (25 °C)	142 cd	86 cd	22 cd	74 cd	35 cd
WP185 Minimum Candela Rating (over temp. range)	185 cd	90 cd	21 cd	81 cd	40 cd
WP185 Typical Candela at 77 °F (25 °C)	220 cd	112 cd	27 cd	101 cd	50 cd
A/V Sound Dispersion per ULC-S525 Anechoic testing performed at 3 m (10 ft); referenced to on-axis = 0°	Level Decrease	Horizontal Angle		Vertical Angle	
	-3 dB	+50° (to right)		+55° (above axis)	
		-40° (to left)		-70° (below axis)	
	-6 dB	+85° (to right)		+60° (above axis)	
-85° (to left)		-90° (below axis)			

