Saint Croix National Scenic Riverway

(SACN 245498)

Replace Obsolete Alarm System and Incorporate New Technologies Project

System Equipment Data Sheets

Product Data for reference only - Not intended to be sole sourced

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Fire and Intrusion Alarm Control Unit

VISTA-128FBP/V128FBP-24

VISTA® Commercial Partitioned Fire and Burglary Alarm Control Panel

The VISTA-128FBP provides the ultimate protection of life and property. This UL Listed commercial fire and burglary control panel supports up to eight partitions and up to 128 zones/points using hardwired, wireless and V-Plex® addressable technologies. A diverse line of Honeywell Home initiating devices, notification circuits, communication devices, keypads, RF receivers and relays are also supported. The VISTA-128FBP has been designed to mount quickly and easily in an attack resistant cabinet, and is available in 12V and 24V models.



Now UL864 9th Edition Approved

FEATURES

- Eight hardwired zones standard, expandable to 120 V-Plex addressable points/zones or 128 wireless points/zones
- Can control eight separate areas independently (8 partitions)
- Supports commercial wireless fire and burglary devices
- Stores up to 512 events
- Accommodates 150 user codes and up to 250 access card holders using VISTAKEY®
- Supports V-Plex addressable VISTAKEY access control (1 to 8 doors)
- Two on-board notification (bell) circuits delivering 2.3A @ 12V
- Automatic smoke detector sensitivity maintenance testing
- Four-wire smoke reset using onboard J2 output trigger
- Supports dynamic signaling for AlarmNet® Communicators
- Supports Internet and GSM alarm reporting*
- Supports graphical user interfaces for burglary use
- Supports 6160CR-2 multi-LED fire keypad
- Listed to UL864 9th Edition
- Upload/download via Ethernet*
- Carbon monoxide (CO) zone support

* When used with AlarmNet® devices.

VISTA-128FBP/V128FBP-24

VISTA® Commercial Partitioned Fire and Burglary Alarm Control Panel

ADDITIONAL FEATURES

- **Notification Appliance Circuits (two):**
  - Programmable
  - Temporal code compliant
  - Individually silenceable
- **Programmable on-board auxiliary relay**
- **False alarm reduction features:**
  - Exit error logic
  - Exit delay reset
  - Cross zoning
  - Call waiting defeat
  - Recent close report
- **Supports commercial hardwired, addressable V-Plex® polling loop and wireless zones**
- **Hardwired zones**
- **Provides eight style B hardwired zones**
  - EOLR supervised for Fire and UL burglary installations- Supports N.O. or N.C sensors
  - Individually assignable to any of eight partitions
  - Up to 16 two-wire smoke detectors each on zone one and two (32 total)
  - Up to 50 two-wire glassbreak detectors on zone eight
- **Patented addressable V-Plex polling loop technology**
  - Supports 120 two-wire zones points
  - Global polling technology for faster processing
  - Supervised by panel
  - Zones individually assignable to partitions, notification circuit (bell) output or auxiliary relay
  - 4,000 ft. capability without the use of shielded cable
  - Extender/Isolation bus modules
  - Eight zone - Class A and B expander module
  - Eight zone - Class B expander module
  - Single-zone supervised contact module
- **UL Listed wireless expansion**
  - Supports up to 128 wireless zones/points
  - Supervised by control for check-in signals
  - Tamper protection for transmitters Individually assignable up to eight partitions
  - Supports commercial wireless smoke detectors
- **Up to eight doors using VISTAKEY V-Plex Access Control**
- **Event reporting**
- **Local printer for event log printing**
- **Communication**
  - Phone line, GSM and IP communicator support
  - Panel operation during download

VISTA-128FBP/V128FBP-24

VISTA® Commercial Partitioned Fire and Burglary Alarm Control Panel

SPECIFICATIONS

Applications:

The VISTA-128FBP control is well suited for a variety of applications as an integrated fire and burglary control. Some of the applications supported are: medical and professional buildings, churches or synagogues, office buildings, schools, strip malls, larger residences and factory or warehouse environments.

Electrical:

Primary power: 18VAC @ 72VA Honeywell No. 1451

Control panel quiescent current draw: 300mA

Backup battery: 12VDC, 12AH min to 34.4AH max Lead acid battery (gel type)

Alarm power: 12VDC, 1.7A max for each notification (bell) circuit output Total 2.3A 12V

Aux. standby pwr: 12VDC, 1A max

Total power: 2.3A at 12VDC

Standby time: 24 hours with 1A standby load using 34.4AH battery

Fusing: Battery input, aux. and notification (bell) circuit outputs are protected using PTC circuit protectors. All outputs are power limited. Optional 24-volt kit

Main Dialer:

Line seize: Double Pole

Ringer equiv: 0.7B

Formats: ADEMCO® Low Speed, ADEMCO 4+2 Express, ADEMCO High Speed, ADEMCO Contact ID, Sescoa and Radionics

Backup Communication:

Dual phone line capability using 5140DLM module AlarmNet® GSM, i-GSM and IP Communicators

Cabinet Dimensions:

18" H x 14.5" W x 4.3"D

Environmental:

Storage temp: 14°F to 158°F (-10°C to 70°C)

Operating temp: 32°F to 122°F (0°C to 50°C)

Humidity: 85% RH

EMI: Meets or exceeds the following requirements:

- FCC Part 15, Class B Device
- FCC Part 68
- IEC EMC Directive

Agency Listings:

UL609 Grade A Local Mercantile Premises and Mercantile Safe and Vault

UL611/1610 Grades A, AA, Central Station

UL365 Grades A, AA Police Connect

UL864/NFPA72 Local, Central Station and Remote Station

UL985

Factory Mutual

California State Fire Marshal

MEA

CAN/ULC S304 – Central and Monitoring Station Burglar Alarm Unit

CAN/ULC S527 – Central Unit for Fire Alarm Systems

CAN/ULC S303 – Local Burglar Alarm Unit

CAN/ULC S525 – Audible Signal Appliances

VISTA-128FBP/V128FBP-24

VISTA® Commercial Partitioned Fire and Burglary Alarm Control Panel

COMPATIBLE DEVICES

Auxiliary Devices
- 6160CR-2 - Red Fire Keypad
- 6160 - Burglary Keypad
- 4204 - Relay Module, four form C contacts
- 4204CF - Two supervised output circuits
- 5881 Series RF receiver
- 5883H RF receiver
- 6220S - System printer used with 4100SM serial module

Two-Wire Smoke Detectors Conventional
- System Sensor
- ESL
- DSC

Horn/Strobes
- System Sensor
- Wheelock
- Gentex

Manual Pull Stations
- 5140MPS-1
- 5140MPS-2

V-Plex (Addressable) Devices
- 4208U Universal Eight-zone Expansion Module
- 4101SN Single Relay/Zone Module
- 4208SNF Class A/B Expander Module
- 4190SN Remote Point Module - two zones
- 4193SN and 4193SNP Two-zone Expander Modules

V-Plex Extender/Isolation Modules
- 4297 Extender/Isolator Module
- VSI Isolator Module

V-Plex Smoke Detectors
- 5193SD
- 5193SDT

V-Plex Passive Infrared Detectors
- 998MX
- IS2500SN
- DT7500SN

V-Plex (Addressable) Contacts
- 4939SN-WH
- 4944SN-WH
- 4959SN

V-Plex Glassbreak Detectors
- FG1625SN

Optional 24V Kit
- Order number: V128FBP924KT

Commercial Wireless Devices
- 5808W3 - Photoelectric Smoke/Heat Detector
- 5806W3 - Photoelectric Smoke Detector
- 5809 - Wireless Heat Detector
- 5817CB - Wireless Commercial Transmitter
- 5869 - Hold-Up Transmitter
- 5881ENHC - RF Receiver
- 5883H - RF Receiver

Access Control
- VISTAKEY® V-Plex (addressable) Access Control
- VISTAKEY-SK Starter Kit
- VISTAKEY-EX Expansion Kit

Alarm Communications
- 7845i-ENT - Internet/Intranet Communicator
- 7845GSM - Digital Cellular Communicator
- 7845i-GSM - Internet and Digital Cellular Communicator
- GSMCF/iGSMCF - Commercial Fire Communication Kits (when available)
- IPGSM-DP Internet and Digital Cellular Communicator
- MEA
- CAN/ULC S304 – Central and Monitoring Station Burglar Alarm Unit
- CAN/ULC S527 – Central Unit for Fire Alarm Systems
- CAN/ULC S303 – Local Burglar Alarm Unit
- CAN/ULC S525 – Audible Signal Appliances

Product specifications subject to change.

ORDERING

V128FBP-9	Commercial Fire and Partitioned Burglary Alarm Control Panel 12V Model
V128FBP9-24	Commercial Fire and Partitioned Burglary Alarm Control Panel 24V Model

For more information

security.honeywellhome.com

resideo

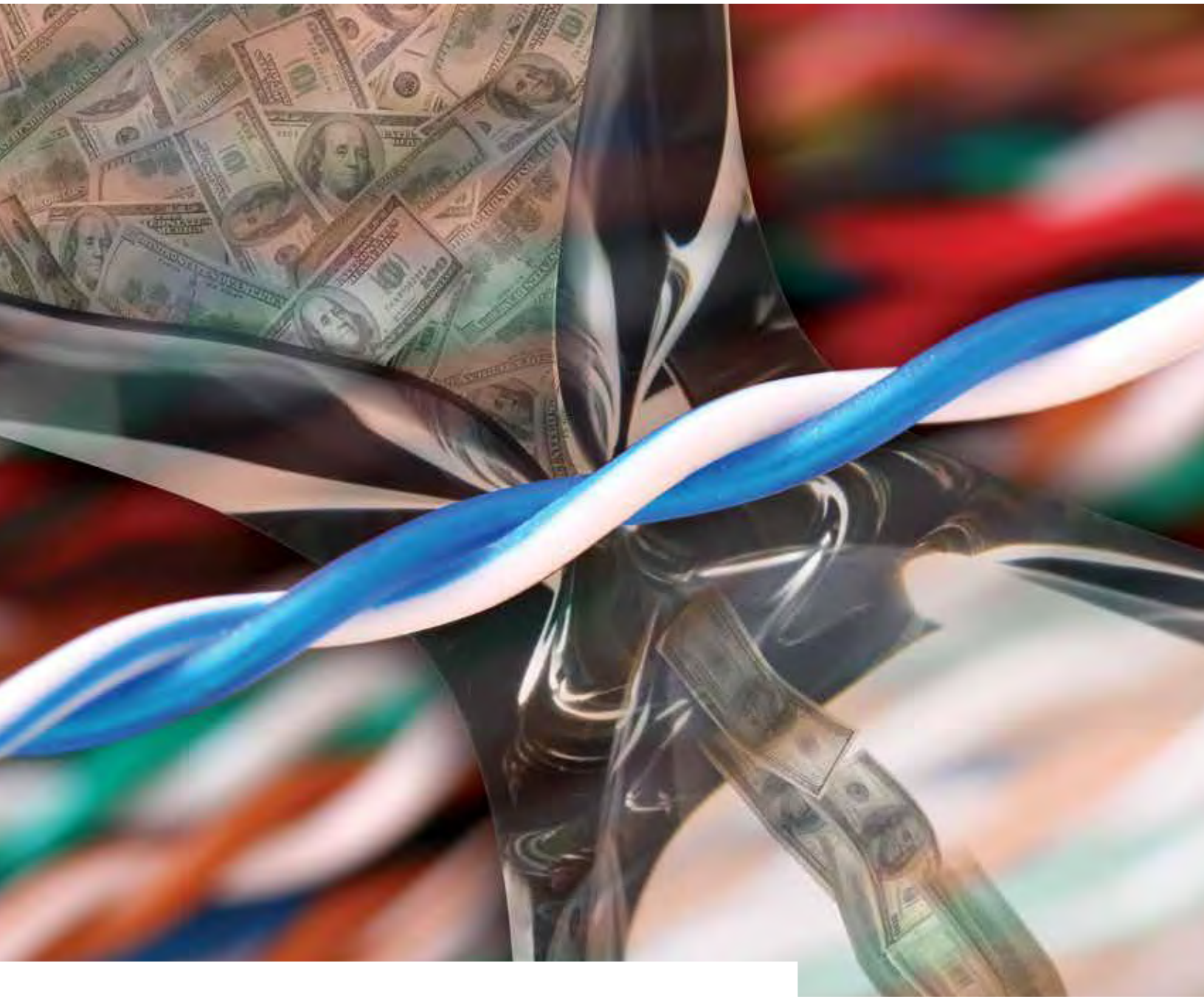
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Honeywell Home

Honeywell



V-Plex®
The wiring solution that saves time and money

Addressable Technology

The V-Plex® Advantage

The Industry's Leading Addressable Technology

V-Plex is the patented polling loop technology that literally defines price and performance on a simple pair of wires.

By using two wires instead of four, V-Plex offers significant advantages over home run wiring or the conventional four-wire multiplex—providing economical expansion of peripheral devices and point identification to your central monitoring station.



Benefits

Reduced Costs

Since each V-Plex sensor can be installed using two wires for power and data—including existing wiring in many cases—costs are substantially reduced.

Reduced Power Consumption

V-Plex devices draw minimal amounts of current, minimizing the need for auxiliary power supplies.

Fast, Accurate Identification and Response

Point ID allows you to quickly and easily pinpoint the source of alarm or trouble from the keypad and communicate the information to the proper authorities—and lets you bypass protection at any specific point.

Reduced Time and Labor

V-Plex offers a labor and time-saving maintenance feature that gives you the ability to diagnose and pinpoint defects. As a result, installation and service professionals can arrive at the site already knowing the exact location of the problem. Service calls become much more efficient, saving you the time and labor costs associated with repeat visits.

Reduced Maintenance Costs

V-Plex can initiate functional smoke detector testing from a VISTA-32FB, VISTA-128FBP or VISTA-250FBP series system keypad—automatically logging results locally and sending them to a monitoring center. This drastically reduces system maintenance costs when annual tests or inspections are performed.

The Honeywell Home V-Plex addressable technology offers many new and exciting innovations while fully supporting existing addressable loop products. You'll experience efficiencies in installation and reliability that will add up quickly on your bottom line. Begin experiencing the V-Plex advantage today!

ACCESSORIES



DT7500SN V-Plex DUAL TEC Motion Sensor

- 35' or 50' (11m or 15m) lenses
- Pattern containment and pattern shaping through K-Band microwave technology
- 0, 50, 100 lbs (0, 23, 45 Kg) selectable pet immunity with optional lens



5193SD/5193SDT One Piece Photoelectric Smoke Detector

- 5193SDT features (135°F/57°C) heat sensor



4959SN Addressable Overhead Door Contact

- Rugged aluminum housing and adjustable L bracket type magnet
- Standard gap: 2" (51mm)
- Tamper



4193SN/4293SN Micro-miniature V-Plex Adapter

- Makes any hardwired device V-Plex ready
- Built-in serial number for addressing
- One supervised, one unsupervised zone



IS2500SN V-Plex PIR Motion Sensor

- 35' or 50' (11m or 15m) lenses
- 0, 40, 80 lbs (0, 18, 36 Kg) selectable pet immunity with optional lens



269SN V-Plex Holdup Switch

- Fully supervised
- Reset key for testing and reset of alarm
- Stainless steel protective cover



4939SN Addressable Surface Mount Contact

- Traditional "39" style with snap on cover to conceal mounting screws
- Standard gap: 1.25" (32mm)
- 5' (1.5m) CL ll jacketed cable



4190SN Two Zone Remote Point Module

- DIP switch programmable
- Left Zone-EOLR supervised, open or closed circuit sensors
- Right Zone-unsupervised, closed circuit sensors



FG1625SN FlexGuard®

- FlexCore signal processor
- Selectable sensitivity
- Easy installation with FG-701 Tester
- No minimum range
- 25' (9.6m) max range



4191SN-WH Recessed

- 1/2" (12.7mm) diameter case
- Standard gap: 7/8" (22mm)
- Programmable recessed contact with built-in RPM (Remote Point Module)
- Also available with steel door adapter



4101SN Relay Module

- Form C contacts rated at 2A, 28VACNDC with contact supervision
- One class B B/style B EOLR supervised aux. input zone
- Operating and power and communication with control via V-Plex loop



4208SNF Universal Class A & Class B Expander Module

- Provides up to six class B supervised zones and converts two panel zones to class A supervised zones
- Powered from addressable loop or DC power supply
- Serial number addressing via DIP switch



4297 Polling Loop Extender Module

- Isolates and protects different areas of protection
- Extends loop distance
- Separate DC input, no loop current drain



4208SN Universal Eight Zone Remote Point Module

- Remote expansion zone module
- Supports serial number application

VISTAKEY
Access Control



Now, you can quickly and easily add access control every time you install a VISTA® commercial security system. VistaKey maximizes security investments by integrating access control, intrusion detection and fire detection into a single system. You can offer your customers 1-15 doors of seamless integration, and a unique combination of security and access control features:

- Arms and disarms security system with access card
- Conveniently connects to the V-Plex bus
- Tracks employee door entry and locks/unlocks doors on schedule
- Restricts access based on job function, time or location
- Events can be recorded to the VISTA event log; printer optional

VPLEX-VSI
V-Plex Short Isolator



- Detects and isolates polling loop branches with complete or resistive shorts, and overload or defective polling loop devices on initial power up
- Can be used to isolate burglary devices from fire devices, increasing life safety and protection
- LED indicator reduces troubleshooting time and maintenance costs
- Powered directly from the V-Plex two-wire polling loop
- Can be placed on any major or minor branch in any configuration on the polling loop

For more information
security.honeywellhome.com/hsc

resideo

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Honeywell Home

4208SN

Serialized Eight Zone Remote Point Module



The 4208SN Remote Point Module (RPM) is an eight-zone expander that allows the use of available expansion zones on ADEMCO controls that support V-Plex polling loop devices.

FEATURES

- Can be used on controls that support up to 250 zones
- Can be optionally powered from an external DC power supply to reduce the amount of current draw from the polling loop
- Uniquely identifies eight EOLR supervised zones (all zones use 10K resistors, supplied)
- Each zone is identified by a unique serial number, which is assigned via on-board DIP Switches
- Detects faults on all zones within 400ms of occurrence
- Loops A & B can be programmed for fast (10ms) response
- Provides cover tamper protection, which may be enabled or disabled via on-board DIP Switches

SPECIFICATIONS

Physical

- 6-7/16”W X 4-1/4”H X 1-1/4” D 163mm x 108mm x 32mm

Electrical

Polling Loop Voltage

- 11V nominal; 8.7 - 14VDC range

Current

- 33.6mA when polling loop provides power to module, 0.6mA when 12VDC input provides power to module. See chart below.

12VDC Input Voltage

- 12V nominal; 9.4 - 14VDC range

Expander Sensor Loop Response

- Slow: 400msec (all loops)
- Fast: 10msec (option for loops A and B)

Expander Sensor Loop Current

- 0.52mA (normal)
- 1.3mA (shorted)

NOTE: These currents apply when polling loop input = 11VDC and 10VDC input is not connected to external supply

Sensor Loop Max. Resistance

- Up to 300 ohms of wire resistance + 10K EOLR

Agency Listings

- UL 985 Household Fire
- UL 1023 Household Burglary
- UL 609 Commercial Burglary
- UL 864 Commercial Fire
- CSFM
- FM (Pending)
- CUL
- CE (requires #N6361)

Power Input Source	Current Draw (all zones shorted)	
	From Polling Loop	From External Power
Polling Loop Only	33.6m	AN/A
Polling Loop and External Power Input	0.6mA	33mA

For UL Listed Commercial Fire Usage:
Use N.O. contacts. Style B supervise these loops using Model #EOL 100 fire listed 10K EOLRs (purchased separately).

For UL Listed Commercial Burglary Usage:
Use N.O. or N.C. contacts. Supervise using EOLRs supplied.

ORDERING

4208SN Eight Zone Expander

Honeywell



4208U

Universal Eight Zone Remote Point Module

The 4208U Remote Point Module (RPM) is an eight-zone expander that allows the use of available expansion zones on ADEMCO controls that support V-Plex polling loop devices.

FEATURES

- Can be optionally powered from an external DC power supply to reduce the amount of current draw from the polling loop
- Uniquely identifies eight EOLR supervised zones (all zones use 10K resistors, supplied)
- DIP Switches can be used to set zone numbers or serial numbers
- When used in the serial number mode, each serial number in the selected group can be assigned to any zone number
- Loops A & B can be programmed for fast (10msec) response
- Provides cover tamper protection, which may be enabled or disabled via on-board DIP Switches

SPECIFICATIONS

Physical

- 6-7/16" W X 4-1/4"H X 1-1/4"D 163mm X 108mm X 32mm

Electrical

Polling Loop input:

- 7.3 - 14VDC range

Current draw:

- 28.6mA max. External power and polling loop. See chart below.

External Power Input (optional):

- 12VDC @ 28mA (from control panel's auxiliary power)

Sensor Loop Response:

- Slow: 400 msec (all loops)
- Fast: 10msec (option for loops A and B)

Sensor Loop Current:

- Polling loop input = 11VDC, no external power input):0.52mA (normal), 1.3mA (shorted)

Sensor Loop Max. Current:

- Up to 300 ohms of wire resistance + 10K EOLR

Agency Listings

- UL 985 Household Fire
- UL 1023 Household Burglary
- UL 609 Commercial Burglary
- UL 864 Commercial Fire
- CSFM
- FM
- CUL
- CE (requires #N6361)

Power Input Source (Input Voltage: 11-14VDC)	**Current Draw** (all zones shorted)	
	From Polling Loop	**From External Power**
Polling Loop Only	27.3mA	N/A
Polling Loop and External Power Input	0.6mA	33mA

For UL Listed Commercial Fire Usage: Use N.O. contacts. Style B supervise these loops using Model #EOL 100 fire listed 10K EOLRs (purchased separately).

For UL Listed Commercial Burglary Usage: Use N.O. or N.C. contacts. Supervise using EOLRs supplied.

ORDERING

4208U Eight Zone Expander

Honeywell Security & Custom Electronics
PO Box 9035,
Syosset, NY 11791
www.security.honeywell.com/sce

L/4208FAM/D
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5800RP

Wireless Repeater



The Honeywell Home 5800RP is a wireless repeater that extends the range of 5800 Series RF devices. For installations that require increased RF range, the 5800RP eliminates the need to run wires to a remotely installed secondary receiver and also eliminates the need to upgrade to a larger control panel that supports two receivers.

FEATURES AND BENEFITS

- Extends the range of 5800 Series wireless devices
- Receives alarm, status and control messages from 5800 RF devices, and repeats these messages to the control panel via the primary receiver
- Compatible with all 5800 Series wireless devices (including bidirectional devices)
- UL residential burglary listed when used with optional transformer (300-07753) or consist-of-kit 5800RP-ULKT (5800RP + 300-07753)
- AC powered with a six-hour battery back-up
- Tamper protected

TECHNICAL SPECIFICATIONS

DIMENSIONS	7-3/8" W x 4-3/8" (10-7/8" with antenna) H x 2-1/8" D/ 188mm W x 112mm H (277mm with antenna) x 54mm D
INPUT VOLTAGE:	9VAC, 15VA (transformer sold separately - 300-07753)
CURRENT	80mA
BATTERY PACK:	Rechargeable, part number 300-03865
COMPATIBILITY	Compatible with the 5881ENL, M & H family, 6150RF, 6160RF, 5883H for VISTA™ systems and all LYNX systems

ORDERING

PART NUMBERS	DESCRIPTION
5800RP	Wireless Repeater
300-07753	Transformer for UL Installs, 9VAC, 15VA
5800RP-ULKT	5800RP with 300-07753 Transformer
300-03865	Replacement Rechargeable Battery

For more information

security.honeywellhome.com/hsc

resideo

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L/5800RPD/D | 04/19
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Fire Alarm Field Devices

FCPS-24FS6(C/E)

6 Amp, 24 Volt Remote Power Supply

FIRE·LITE ALARMS by Honeywell

The **Fire•Lite FCPS-24FS6(C/E)** is a compact, cost-effective, 6-amp remote power supplies with battery charger. The FCPS-24FS6(C/E) may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may stand-alone. Primary applications include notification appliance (bell) circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24 volt system accessories. The FCPS provides *regulated and filtered* 24 VDC power to four notification appliance circuits configured as either two Class B (Style Y) and Class A (Style Z, with ZNAC-4 option module) or four class B only. Alternately, the four outputs may be configured as any combination of resettable/non-resettable power outputs (optimal for powering four-wire smoke detectors. The FCPS-24FS6(C/E) also contains a battery charger capable of charging up to 7.0 AH batteries. The FCPS-24FS6C is ULC-listed.

NOTE: *Unless otherwise specified, the term FCPS-24FS6 used in this document refers to the FCPS-24FS6, FCPS-24FS6C, and FCPS-24FS6E.*



Features

- UL-Listed Notification Appliance Circuit (NAC) synchronization using System Sensor®, Wheelock®, or Gentex® "Commander^2" appliances
- Operates as a "sync-follower" or as a "sync-generator" (default) *See note on page 2.*
- Contains two fully-isolated input/control circuits - triggered from FACP NAC (NAC expander mode) or jumped permanently "ON" (stand-alone mode)
- Two Class B (Style Y) or Class A (Style Z, with ZNAC-4 module) NACs (circuits 1 & 3)
- 6-amp full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864)
- 4-amp continuous output in stand-alone mode (UL 1481)
- Compatible with coded inputs; signals passed through
- Optional power-supervision relay (EOLR-1)
- In stand-alone mode, output power circuits may be configured as: resettable, (reset line from FACP required), non-resettable, or a mix of two and two
- Fully regulated and filtered power output - optimal for powering four-wire smoke detectors, annunciators, and other system peripherals requiring regulated/filtered power
- Power-limiting technology meets UL power-limiting requirements
- Form-C normally-closed trouble relay
- Fully supervised power supply, battery, and NACs
- Selectable earth fault detection
- AC trouble report selectable for immediate 2-hour delay
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated bell power)
- Requires input trigger voltage of 9 - 32 VDC
- Self-contained in compact, locking cabinet - 15"H x 14.5"W x 2.75"D (cm: 38.1H x 36.83W x 6.985D)
- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries
- Battery charger may be disabled via DIP switch for applications requiring larger batteries
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm^2) wire

Specifications

Primary (AC) Power:

- **FCPS-24FS6/C**: 120 VAC, 60 Hz, 3.2A maximum
- **FCPS-24FS6E:** 240 VAC, 50 Hz, 1.6A maximum
- Wire Size: minimum #14 AWG (2.0mm^2) with 600 V insulation

Control Input Circuit:

- **Trigger Input Voltage:** 9 to 32 VDC
- **Trigger Current:** 2.0 mA (16 - 32 V); Per Input: 1.0 mA (9 - 16 V)

Trouble Contact Rating: 5 A at 24 VDC

Auxiliary Power Output: Special application power 500 mA maximum

Output Circuits:

- +24 VDC filtered, regulated
- 3.0 A maximum for any one circuit
- Total continuous current for all outputs (stand-alone mode): 4.0 A maximum
- Total short-term current for all outputs (NAC expander mode): 6.0 A maximum

Secondary Power (Battery) Charging Circuit:

- Supports lead-acid batteries only
- Float-charge voltage: 27.6 VDC
- Maximum current charge: 250 mA
- Maximum battery capacity: 7.0 AH

Applications

Example 1: Expand notification appliance power an additional 6.0 A. Use up to four Class B (Style Y) outputs or four Class A (Style Z) outputs (using ZNAC-4). For example, the FACP notification appliance circuits will activate the FCPS when reverse-polarity activation occurs. Trouble conditions on the FCPS are sensed by the FACP through the notification appliance circuit.

Example 2: Use the FCPS to expand auxiliary regulated 24-volt system power up to 4.0 A. Both resettable and non-resettable power options are available. Resettable outputs are created by connecting the resettable output from the FACP to one or both of the FCPS inputs.

Example 3: Use addressable control modules to activate the FCPS instead of activating it through the FACP notification appliance circuits. This typically allows for mounting the FCPS at greater distances* away from the FACP while expanding system architecture in various applications.

For example, an addressable control module is used to activate the FCPS, and an addressable monitor module is used to sense FCPS trouble conditions. Local auxiliary power output from the FCPS provides power to the addressable control module.

***NOTE:** Addressable FACPs are capable of locating control and monitor modules at distances of up to 10,000 feet (3,046 meters).*

Sync Follower/Generator Note

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes accomplish this by monitoring very short timing pulses on the NAC power which are created by the FACP. When installed at the end of a NAC wire run, the FCPS-24FS6 can track (i.e. "follow") the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attaches to the FCPS.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync follower," the FCPS' NAC outputs track the strobe synchronization pulses present at the FCPS' sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync generator," the FCPS' sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS' NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

Standards and Codes

The FCPS-24FS6 complies with the following standards:

- **NFPA 72** National Fire Alarm Code.
- **UL 864** Standard for Control Units for Fire Alarm Systems (NAC expander mode).
- **UL 1481** Power Supplies for Fire Alarm Systems.

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:** S2424, S1287
- **ULC Listed:** S2424
- **CSFM Approved:** 7315-0075:0206
- **MEA:** 387-94E
- **FM Approved**

Ordering Information

FCPS-24FS6: 6.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

FCPS-24FS6C: Same as FCPS-24FS6, ULC-listed

FCPS-24FS6E: 6.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

ZNAC-4: Class A (Style Y) NAC option module

EOLR-1: 12/24 VDC end-of-line relay for monitoring four-wire smoke detector power

BAT-1270: Battery, 12-volt, 7.0 AH (two required)

PS-1270: Battery, 12-volt, 7.0 AH (two required)

90286: Optional module mounting kit, is required to install an addressable module on the power supply main circuit board

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ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING QUALITY SYSTEMS

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We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105.
www.firelite.com

Country of Origin: USA

NBG-12LX

Addressable Manual Pull Station

NOTIFIER® by Honeywell

General

The Notifier NBG-12LX is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface for any Notifier intelligent control panel except FireWarden series panels, and the NSP-25 panel. Because the NBG-12LX is addressable, the control panel can display the exact location of the activated manual station. This leads fire personnel quickly to the location of the alarm.

Features

- Maintenance personnel can open station for inspection and address setting without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes in normal operation and latches steady red when in alarm.
- Handle latches in down position and the word “ACTIVATED” appears to clearly indicate the station has been operated.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.25 mm² wire).
- Can be surface mounted (with SB-10 or SB-I/O) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Smooth dual-action design.
- Meets ADAAG controls and operating mechanisms guidelines (Section 4.1.3[13]); meets ADA requirement for 5 lb. maximum activation force.
- Highly visible.
- Attractive shape and textured finish.
- Key reset.
- Includes Braille text on station handle.
- Optional trim ring (BG12TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Up to 99 NBG-12LX stations per loop on CLIP protocol loops.
- Up to 159 NBG-12LX stations per loop on FlashScan® protocol loops.
- Dual-color LED blinks green to indicate normal on FlashScan® systems.

Construction

Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC standby current:** 375 µA.
- **Maximum SLC alarm current:** 5 mA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**



The NBG-12LX
Addressable Manual Pull Station

Installation

The NBG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the NBG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

Operation

Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word “ACTIVATED” (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Each manual station, on command from the control panel, sends data to the panel representing the state of the manual switch. Two rotary decimal switches allow address settings (1 – 159 on FlashScan® systems, 1 – 99 on CLIP systems).

Architectural/Engineering Specifications

Manual Fire Alarm Stations shall be non-coded, with a key-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored polycarbonate material with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or

4" (10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch. Manual stations shall provide address setting by use of rotary decimal switches.

The loop poll LED shall be clearly visible through the front of the station. The LED shall flash while in the normal condition, and stay steadily illuminated when in alarm.

Product Line Information

NBG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

NBG-12LXSP: Spanish/English labelled version.

NBG-12LXP: Portuguese labelled version.

SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

BG12TR: Optional trim ring.

17021: Keys, set of two.

NY-Plate: New York City trim plate.

Agency Listings and Approvals

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/ULC Listed:** S692 (listed for Canadian and non-Canadian applications).
- **MEA:** 67-02-E.
- **CSFM:** 7150-0028:0199.
- **FDNY:** COA #6085 (NFS2-640), COA #6098 (NFS2-3030).
- **BSMI:** CI313066760047.
- **U.S. Coast Guard.**
- **Lloyd's Register.**
- **FM Approved.**

Patented: U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

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www.notifier.com

i³ Series

Photoelectric Smoke Detectors

FIRE·LITE ALARMS by Honeywell

General

System Sensor's i³™ Series photoelectric and photoelectric/thermal smoke detectors represent a significant advancement in conventional detection, incorporating three key features: installation ease, intelligence, and instant inspection.

Installation ease. The i³ Series redefines installation ease with its plug-in design. This allows an installer to pre-wire the bases included with the heads. The large wire-entry port and in-line terminals provide ample room for neatly routing the wiring inside the base. The base accommodates a variety of backbox mounting methods, as well as direct mounting with drywall anchors. To complete the installation, i³ Series heads plug into the base with a simple Stop-Drop 'N Lock™ action.

Intelligence. i³ Series detectors offer a number of intelligent features to simplify testing and maintenance. Drift compensation and smoothing algorithms, to minimize nuisance alarms, are standard in the i³ Series. When connected to the 2W-MOD loop test/maintenance module, two-wire i³ detectors are capable of generating a remote maintenance signal when they need cleaning. This signal is indicated by LEDs located at the module and at the panel. To read the sensitivity of i³ detectors, the SENS-RDR is a wireless device that displays sensitivity in terms of percent-per-foot obscuration.

Instant inspection. The i³ Series provides wide-angle red and green LED indicators for instant inspection of detector condition. The LEDs indicate: normal standby, out-of-sensitivity, alarm, or freeze trouble conditions. The "EZ Walk" loop test feature is available on two-wire i³ Series detectors when connected to the 2W-MOD loop test/maintenance module. The "EZ Walk" feature verifies the initiating loop wiring by providing LED status indication at each detector.

Features

- Plug-in detector line — mounting base included.
- Large wire-entry port.
- In-line terminals with SEMS screws.
- Mounts to octagonal and single-gang backboxes, 4" (101.6 mm) square backboxes, or directly to ceiling.
- Stop-Drop 'N Lock attachment to base.
- Removable detector cover and chamber for easy cleaning.
- Built-in remote maintenance signaling.
- Drift compensation and smoothing algorithms.
- Simplified sensitivity measurement.
- Wide-angle, dual-color LED indication.
- Loop testing via "EZ Walk" feature.
- Built-in test switch.

Specifications

PHYSICAL SPECIFICATIONS

Operating Temperature Range: For models 2W-B and 4W-B: 32°F to 120°F (0°C to 49°C); for thermal models 2WT-B and 4WT-B: 32°F to 100°F (0°C to 37.8°C).

Operating Humidity Range: 0% – 95% RH, non-condensing.

Thermal Sensor: 135°F (57.2°C) fixed (models 2WT-B, 4WT-B).



Freeze Trouble: 41°F (5°C) (models 2WT-B and 4WT-B).

Sensitivity: 2.5%/foot (0.762%/meter) nominal.

Input Terminals: Utilize 14 to 22 AWG wire.

Dimensions (including base): 5.3" (134.62 mm) diameter, 2.0" inches (50.8 mm) high.

Weight: 6.3 oz. (178.6 grams).

Mounting Options: 3.5" (88.9 mm) octagonal backbox; 4" (101.6 mm) octagonal backbox; single-gang backbox; 4" (101.6 mm) square backbox with a plaster ring; or direct mount to ceiling.

ELECTRICAL SPECIFICATIONS

Operating Voltage: 12/24 V non-polarized nominal; 8.5 V minimum; 35 V maximum.

Maximum Alarm Current" *For two-wire models:* 130 mA limited by control panel; *For four-wire models:* 20 mA @ 12 V, 23 mA @ 24 V.

Alarm Contact Ratings: For four-wire models: 0.5 A @ 30 VAC/VDC; not applicable for two-wire models.

LED Modes	Green LED	Red LED
Power Up	Blink every 10 seconds	Blink every 10 seconds
Normal (Standby)	Blink every 5 seconds	OFF
Out of Sensitivity	OFF	Blink every 5 seconds
Freeze Trouble	OFF	Blink every 10 seconds
Alarm	OFF	Solid ON

Power Up Sequence for LED Indication	
Condition	**Duration**
Initial LED Status Indication	80 Seconds

Architectural/Engineering Specifications

Smoke detector shall be a System Sensor i³ Series model number _____, Listed to Underwriters Laboratories UL 268 Fire Protection Signaling Systems. The detector shall be a photoelectric type (models 2W-B, 4W-B) or a combination photoelectric/thermal (models 2WT-B, 4WT-B) with thermal sensor rated at 135°F (57.2°C). The detector shall include a mounting base for mounting to 3.5" (88.9 mm) and 4" (101.6 mm) octagonal, single-gang, and 4" (101.6 mm) square backboxes with a plaster ring, or directly mount to the ceiling using drywall anchors. Wiring connections shall be made by means of SEMS screws. The detector shall allow pre-wiring of the base and the head shall be a plug-in type. The detector shall have a nominal sensitivity of 2.5%/foot (0.762%/meter) as measured in the UL smoke box. The detector shall be capable of automatically adjusting its sensitivity by means of drift compensation and smoothing algorithms. The detector shall provide dual-color LED indication which blinks to indicate power-up, normal standby, out-of-sensitivity, alarm, and freeze trouble (models 2WT-B, 4WT-B) conditions. When used in conjunction with the 2W-MOD module, two-wire models shall include a maintenance signal to indicate the need for maintenance at the alarm control panel, and shall provide a loop testing capability to verify the circuit without testing each detector individually.

Agency Listings and Approvals

In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. *Consult factory for latest listing status.*

- **UL/ULC Listed:** S911
- **FM Approved**
- **CSFM:** 7272-1653:152
- **MEA:** 290-01-E
- **Maryland State Fire Marshal:** Permit # 2093

Product Line Information

2W-B: Two-wire photoelectric smoke detector.

C2W-BA: Same as 2W-B, ULC listing.

2WT-B: Two-wire photoelectric smoke detector with 135°F (57.2°C) fixed thermal sensor.

C2WT-BA: Same as 2WT-B, ULC listing.

4W-B: Four-wire photoelectric smoke detector.

C4W-BA: Same as 4W-B, ULC listing.

4WT-B: Four-wire photoelectric smoke detector with 135°F (57.2°C) fixed thermal sensor.

C4WT-BA: Same as 4WT-B, ULC listing.

ACCESSORIES:

2W-MOD2: Two-wire loop test/maintenance module.

SENS-RDR: Sensitivity reader.

A77-AB2: Retrofit adapter bracket, 6.6” (167.7cm) diameter.

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Technology that saves lives

Rate Compensation Heat Detectors

302 Series



MEA

Overview

Series 302 heat detectors are designed for use in normal environments as well as environments where the detectors are subject to weather, moisture (internal condensation), and explosive atmospheres. They are normally-open devices designed to close an electrical circuit upon activation. All models feature rate compensation and are available with either 135 °F (57.2 °C) or 194 °F (90 °C) ratings. They are self restoring, hermetically sealed, shock and corrosion resistant, and are tamperproof.

Standard Features

- Rate compensation offsets thermal lag
- Self-restoring – no manual reset required
- Explosion proof and weatherproof models available
- Weatherproof models available that do not require a special backbox
- Box mount and surface mount models available

Application

Sensors rated at 135 °F (57.2 °C) will not respond to momentary temperature fluctuations less than 30 °F/minute between 60 °F (16 °C) and 100 °F (38 °C). Sensors rated at 194°F (90 °C) will not respond to momentary temperature fluctuations less than 50 °F/minute between 60 °F (16 °C) and 150 °F (66 °C). 302 Series sensors should not be used in environments where conditions exceed these parameters. Do not install them in hot air ducts, in front of heaters, in paint booths that use heat to cure paint, or any other location subject to temperature fluctuation.

Sensor's Rated Temperature	Minimum Ambient Air Temperature	Maximum Ceiling Temperature
135 °F (57.2 °C)	-40 °F (-40 °C)	100 °F (38 °C)
194 °F (90 °C)	-40 °F (-40 °C)	150 °F (66 °C)

The sensor's aluminum tube acts as a heat collector when sources of heat radiate directly on the tube. Install these sensors out of direct sunlight and away from radiating heat sources including the direct flow from heaters and heat ducts.

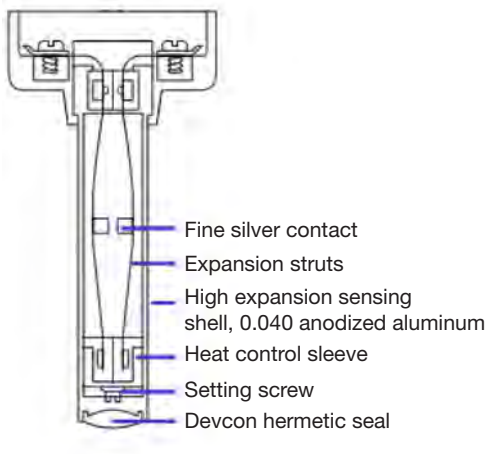
Rate Compensation

302 Series sensors feature rate compensation, which improves performance by offsetting thermal lag, an inherent property of conventional fixed temperature heat sensors.

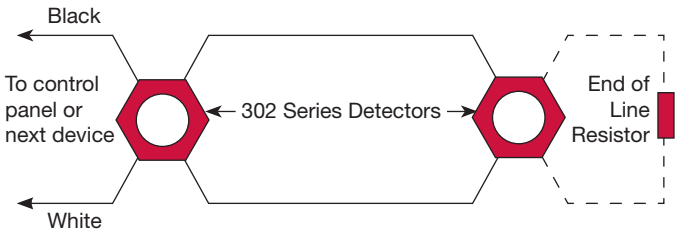
A slow rate of temperature rise allows the heat to penetrate the inner expansion struts. The tubular shell and the struts expand slowly until the total device has been heated to its rated temperature level of 135 °F (57.2 °C) or 194 °F (90 °C). At this point, the silver contact points close and an alarm is initiated.

When subjected to a rapid rate temperature rise, there is not as much time for heat to penetrate the inner strut. However, the rapid lengthening of the shell allows the struts to come together at a lower level.

When the surrounding air temperature returns to below the rated level, the shell contracts, forcing the contacts to open, thus automatically resetting the sensor.



Typical Wiring



Electrical Rating

Voltage	Current
6-125 VAC	5 amps
6-25 VDC	1 amp
125 VDC	0.5 amp

Maintenance

302 Series heat sensors are low maintenance. Sensors automatically restore when temperatures drop below their rated temperatures. The accumulation of dust and dirt does not normally affect the sensors' operation.

Testing

Testing for operation is simple and can be done before or after the sensor has been installed. Heat the sensor with a hair dryer (do not use any device with an open flame to test sensors). The sensor should operate shortly after the hot air is applied.

Refer to NFPA 72, National Fire Alarm Code and/or the local authority having jurisdiction to determine testing frequency, record keeping, and other testing considerations.

Detector Spacing

Model	302	302-AW	302-ET	302-EPM
UL- Vertical Spacing (all models)	50' x 50' (15.2 x 15.2 m)	50' x 50' (15.2 x 15.2 m)	50' x 50' (15.2 x 15.2 m)	40' x 40' (12.2 x 12.2 m)
UL- Horizontal Spacing (all models)	40' x 40' (12.2 x 12.2 m)	40' x 40' (12.2 x 12.2 m)	40' x 40' (12.2 x 12.2 m)	30' x 30' (9.1 x 9.1m)
FM - Horizontal or vertical spacing.*	30' x 30' (9.1 x 9.1m)	30' x 30' (9.1 x 9.1m)	30' x 30' (9.1 x 9.1m)	Not Listed

Spacing is based on smooth ceilings that are up to 10' (3 m) high. Refer to NFPA 72 for ceilings that are not considered smooth or are higher than 10' (3 m).

* EPM models are not FM approved.

Dimensions

Model	ET	EMP
Tube Length	3" (76.2 mm)	3" (76.2 mm)
Tube Diameter	0.5" (12.7 mm)	0.5" (12.7 mm)
NPT Thread	0.5" (12.7 mm)	0.5" (12.7 mm)
Hex Base	1" (25.4 mm) plastic	1.25" (31.75 mm) brass

WARNING – Use For Property Protection Only: Heat detectors do not protect life against fire and smoke. In most fires, hazardous levels of smoke, heat and toxic gases can build up before a heat sensor would initiate an alarm. Independent studies indicate that heat sensors should only be used when property protection alone is involved. In cases where life safety is a factor, the use of smoke detectors is recommended.

Under no circumstances should heat detectors be relied upon as the sole measure to ensure fire safety. However, if they are spaced in accordance with the specifications found under Application, these sensors can contribute, within an overall fire safety program, to reducing the risk of avoidable property losses.

When used with automatic fire suppression systems such as pre-action and deluge sprinkler systems, carbon dioxide systems, halon systems, and dry chemical systems, at least two sensors should be used to initiate the alarm. This is commonly referred to as cross-zoning or priority matrix zoning and is necessary to eliminate premature discharge of the system. Refer to NFPA 72 for more information.

Ordering Information

Interior applications				Ship Wt.
302-135	Heat Detector - Rate Compensation, Interior Vertical Surface Mount FM & UL, 135 °F (57.2 °C)	For interior mounting.		0.2 lb. (0.09 kg)
302-194	Heat Detector - Rate Compensation, Interior Vertical Surface Mount FM & UL, 194°F (90 °C).			

Moisture & dust proof applications				Ship Wt.
302-AW-135	All-weather Heat Detector - Rate Compensation, Vertical Mounting FM & UL, 135 °F (57.2 °C)	Hermetically sealed for moisture proof or dust proof installations. Requires no special back box when the all-weather leads are properly spliced to “THW” or equivalent type wire and splices are moisture proof. For indoor or outdoor use.		0.2 lb. (0.09 kg)
302-AW-194	All-weather Heat Detector - Rate Compensation, Vertical Mounting FM & UL, 194°F (90 °C)			

Moisture & dust proof applications (box mount)				Ship Wt.
302-ET-135	All-weather Heat Detector - Rate Compensation, Vertical, Box Mount (½" NPT), FM & UL, 135 °F (57.2 °C). Requires STONCO27 or equivalent.	Hermetically sealed for moisture proof or dust proof installations. Requires no special back box. Has plastic hexagonal grip bushing with ½" conduit threads for attachment to threaded hub cover, or any outlet box. For indoor or outdoor use when watertight seal is required, use weatherproof box.		0.2 lb. (0.09 kg)
302-ET-194	All-weather Heat Detector - Rate Compensation, Vertical, Box Mount (½" NPT), FM & UL, 194°F (90 °C). Requires STONCO27 or equivalent.			

Explosion proof applications				Ship Wt.
302-EPM-135	Heat Detector - Rate Compensation, Explosionproof Mounting UL (Not FM approved), 135 °F (57.2 °C). RequiresJALX-11 or equivalent	Explosion proof for installation in hazardous locations. Has hexagonal grip bushing with ½" conduit threads for attachment to threaded hub covers of series JL fixture fitting manufactured by Killark Electric Co., or equivalent. Must be hand tightened only. For indoor use only.		0.3 lb. (0.14 kg)
302-EPM-194	Heat Detector - Rate Compensation, Explosionproof Mounting UL (not FM approved), 194°F (90 °C). RequiresJALX-11 or equivalent.			

Adapter plate			Ship Wt.
AP-P	Decorative white plastic adaptor plate for mounting 302 and 302-AW to any 3" outlet box or 4" octagon outlet box.		0.1 lb. (0.05 kg)

Outlet body	Ship Wt.
Use with standard backboxes and covers such as those manufactured by Killark Electric Co., or equivalent.	

Explosion proof outlet body			Ship Wt.
JALX11	Explosion proof outlet body with cover (½" thread hubs back, four sides and cover) - Killark		3.5 lb. (1.6 kg)

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D4120
Duct Smoke Detector

The InnovairFlex™ Series are the only duct smoke detectors flexible enough to fit configurations from square to rectangular and everything in between.



Features

- 4-Wire Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min to 4,000 ft/min (0.5 m/s to 20.32 m/sec)
- Versatile mounting options: square or rectangular configuration
- Plug-in sensor offers superb false alarm immunity and the latest sensor technology
- Broad ranges for operating temperature (–4°F to 158°F) and humidity (0% to 95% non-condensing)
- Patented sampling tube installs from front or back of the detector with no tools required
- Increased wiring space with a newly added ¾-inch conduit knockout
- One easy-access Test/Reset button and improved LED status
- Patented interconnect feature for multi-fan shutdown
- New high contrast terminal designations
- Built-in short circuit protection from operator wiring errors
- Field selectable settings for configuring the detector
- Two DPDT Form-C relay contacts
- 24 VAC/DC or 120 VAC
- Backward compatibility with existing Innovair products, including remote accessories

Agency Listings

UL LISTED S911

FM APPROVED 3033744

3242-1653:0207

The InnovairFlex D4120 4-wire photoelectric duct smoke detector features a pivoting housing that fits both square and rectangular footprints and mounts to round or rectangular ductwork. This unit senses smoke in the most challenging conditions, operating in airflow speeds of 100 to 4,000 feet per minute, temperatures of –4°F to 158°F, and a humidity range of 0 to 95 percent (non-condensing). A plug-in sensor head offers improved false alarm immunity and simple installation, testing, and maintenance. An improved cover design isolates the sensor head from the low-flow feature for simple maintenance.

The InnovairFlex housing provides ample wiring space, a ¾-inch conduit knockout, and built-in short circuit protection to prevent damage to sensitive components during installation. High contrast terminal designations make wiring easy. With its 2:1 sensor-to-power capability, the power board of the D4120 may be used to monitor a second sensor, D4S, simultaneously (i.e., supply and return side). As many as 50 InnovairFlex detectors can be interconnected. When one unit senses smoke, all interconnected detectors will switch their relays; only the detector sensing smoke will go into alarm, thus pinpointing the fire source.

An easy-access Test/Reset button makes it possible to test the unit with the cover on. Three DIP switches can be used to configure field selectable settings: cover tamper delay, number of sensors to be controlled, and shut down on trouble option. Each power board has two LEDs that can be used to indicate the status of connected sensors, and a quick reference imprinted on the cover explains the LED status indications (Standby, Maintenance, Trouble, and Alarm). The InnovairFlex duct smoke detector can be customized to meet local codes and specifications without additional wiring. The new InnovairFlex product line is compatible with all previous Innovair models, including remote test accessories.

WARNING: Duct smoke detectors are **NOT** a substitute for open area smoke detectors; **NOT** a substitute for early warning detection; **NOT** a replacement for a building's regular fire detection system. Refer to NFPA 72 and 90A for additional information.

InnovairFlex™ Duct Smoke Detector Specifications

Architectural/Engineering Specifications
The air duct smoke detector shall be a System Sensor InnovairFlex™ D4120 Photoelectric Duct Smoke Detector. The detector housing shall be UL listed per UL 268A specifically for use in air handling systems. The flexible housing of the duct smoke detector fits multiple footprints from square to rectangular. The detector shall operate at air velocities of 100 feet per minute to 4000 feet per minute (0.5 to 20.32 meters/second). The unit shall be capable of controlling up to 50 air handling systems when interconnected with other detectors. The detector shall be capable of providing a trouble signal in the event that the front cover is removed. It shall be capable of local testing via magnetic switch, test button on the cover, or remote testing using the RTS2-AOS Multi-Signaling Accessory or the RTS151KEY Remote Test Station. Terminal connections shall be of the strip and clamp method suitable for 12–18 AWG wiring.

Physical Specifications	
Size: (Rectangular Dimensions) **(Square Dimensions)**	14.38 in (37 cm) Length; 5 in (12.74 cm) Width; 2.5 in (6.36 cm) Depth 7.75 in (19.7 cm) Length; 9 in (22.9 cm) Width; 2.5 in (6.35 cm) Depth
Weight:	2.5 lbs (1.14 kg)
Operating Temperature Range:	D4120 & D4S: –4° to 158°F (–20° to 70°C); D4P120: –40° to 158°F (–40° to 70°C)
Storage Temperature Range:	D4120 & D4S: –22° to 158°F (–30° to 70°C); D4P120: –40° to 158°F (–40° to 70°C)
Operating Humidity Range:	0% to 95% relative humidity non-condensing
Air Duct Velocity:	100 to 4000 ft/min (0.5 to 20.32 m/sec)

Electrical Ratings			
Power supply voltage:	20–29 VDC	24 VAC 50–60 Hz	120 VAC 50–60 Hz
Input capacitance:	270 µF max.	270 µF max.	N/A
Reset voltage:	3.0 VDC min.	2.0 VAC min.	10 VAC min.
Reset time: (with RTS151)	.03 to 0.3 sec.	.03 to 0.3 sec.	.03 to 0.3 sec.
Reset time: (by power down)	0.6 sec. max.	0.6 sec. max.	0.6 sec. max.
Power up time:	35 sec. max.	35 sec. max.	35 sec. max.
Alarm response time:	15 sec.	15 sec.	15 sec.
Sensitivity Test:	See detector label	See detector label	See detector label
Current Requirements: (Using No Accessories)			
Max. standby current:	21 mA @ 24VDC	65 mA RMS @ 24VAC 60Hz	20 mA RMS @ 120VAC 60Hz
Max. alarm current:	65 mA @ 24VDC	135 mA RMS @ 24VAC 60Hz	35 mA RMS @ 120VAC 60Hz

Contact Ratings	
Alarm initiation contacts: (SPST)	2.0A @ 30 VDC (resistive)
Alarm auxiliary contacts: (DPDT)	10A @ 30 VDC (resistive); 10A @ 250 VAC (resistive); ½ HP @ 240 VAC ; ¼ HP @ 120 VAC
Note: Alarm auxiliary contacts shall not be connected to initiating circuits of control panels. Use the alarm initiation contact for this purpose.	
Supervisory contacts: (SPDT)	2.0A @ 30 VDC (resistive); 2.0A @ 125 VAC (resistive)

Accessory Current Loads at 24 VDC			
Device	**Standby**	**Trouble**	**Alarm**
APA151	12.5 mA	n/a	30 mA Max.
MHR/MHW	0 mA	n/a	29 mA Max.
RA100Z	0 mA	n/a	12 mA Max.
RTS151/RTS151KEY	0 mA/12 mA	n/a	12 mA Max.
RTS2/RTS2-AOS	3.0mA max	16 mA Max.	with strobe: 55 mA max; without strobe 30 mA max

Note: Any combination of accessories may be used such that the given accessory loads are: 110 mA or less at the Aux output, and 50 mA or less at the Alarm output

Installing the InnovairFlex Sampling Tube

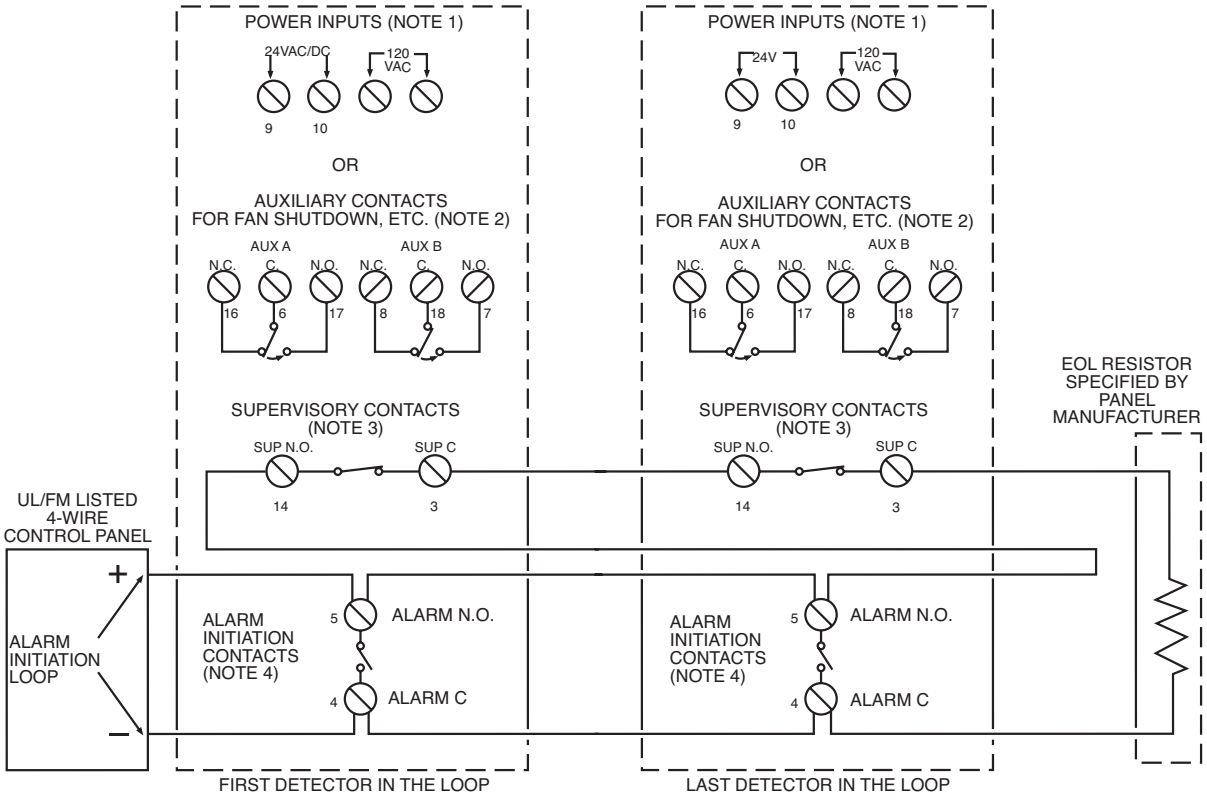
The InnovairFlex sampling tube may be installed from the front or back of the detector. The tube locks securely into place and can be removed by releasing the front or rear locking tab (front locking tab shown below right).







Wiring for 4-wire Duct Smoke Detector and Accessories



NOTE 1: 24V Power Inputs accept a non-polarized 24VDC or 24VAC 50-60Hz. 120VAC Power Inputs accept only 120VAC 50-60Hz. Connect power source to appropriate terminals of each detector. See specifications for additional power supply information.

NOTE 2: Auxiliary contacts shown in standby position. Contacts switch during alarm as indicated by arrows. Auxiliary contacts are not to be used for connection to the control panel. See specifications for contact ratings.

*Please refer to the corresponding installation manual for accessory wiring diagrams.

NOTE 3: Supervisory contacts shown in standby position. Open contacts indicate a trouble condition to the panel. See specifications for contact ratings.

NOTE 4: Alarm Initiation contacts shown in standby position. Closed contacts indicate an alarm condition to the panel. See specifications for contact ratings.

Important Notes on 2:1 Sensor-to-Power Capability

- 2:1 sensor-to-power capability is not available for all InnovairFlex models. The feature is only available on the D4120 4-wire conventional models.
- 2:1 sensor-to-power capability can be enabled using one D4120 and one D4S, or two D4S and one D4P120.

Important Interconnect Notes

- When using the interconnect feature, all interconnected units must be powered using the same independent supply.
- Polarity must be maintained throughout the interconnect wiring. Connect the INT+ terminal on unit 1 to the INT+ terminal on unit 2 and so on. Similarly, connect the INT/AUX– terminal on unit 1 to the INT/AUX- terminal on unit 2 and so on.
- Up to 50 D4120 units, 50 D4P120 units, or 50 units of combination may be interconnected.
- Up to 10 DH100ACDC units may be interconnected. Please note that each of the 9 DH100ACDC units interconnected may be replaced by three D4P120 units. Therefore, when using the interconnect feature a single DH100ACDC can drive either 9 DH100ACDCs or 27 D4120 units.

* NOTE: Alarm can be reset only at the initiating device and not at the devices interconnected.

Accessories

System Sensor provides system flexibility with a variety of accessories, including two remote test stations and several different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detector accessories are UL listed.



RTS151 UL S4011



RTS151KEY UL S2522



APA151 UL S4011



RTS2-AOS UL S2522



RA100Z UL S2522



MHW UL S4011



MHR UL S4011



AOS

Ordering Information

Part No.	Description
D4120	4-wire photoelectric low-flow duct smoke detector
Accessories	

D4S	4-wire photoelectric sensor component only	ETX	Metal exhaust tube duct width 1ft (0.3m)
D4P120	4-wire photoelectric power board component only, 24 VAC/DC, 120 VAC	M02-04-00	Test magnet
2D51	4-wire conventional photoelectric sensor head	MHR	Mini Horn, Red
DST1	Metal sampling tube duct width up to 1ft (0.3m)	MHW	Mini Horn, White
DST1.5	Metal sampling tube duct widths 1 ft to 2 ft (0.3 to 0.6 m)	P48-21-00	End cap for metal sampling tubes
DST3	Metal sampling tube duct widths 2 ft to 4 ft (0.6 to 1.2 m)	RA100Z	Remote annunciator alarm LED
DST5	Metal sampling tube duct widths 4 ft to 8 ft (1.2 to 2.4 m)	RTS151	Remote test station
DST10	Metal sampling tube duct widths 8 ft to 12 ft (2.4 to 3.7 m)	RTS151KEY	Remote test station with key lock
APA151	Remote annunciator with piezo alarm	RTS2 - AOS	Multi-signaling accessory with add on strobe

SYSTEM SENSOR®

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www.systemsensor.com

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HVDS00502 • 10/13

Indoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications



System Sensor L-Series audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- Updated Modern Aesthetics
- Small profile devices for Horns and Horn Strobes
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and two volume selections
- Mounting plate for all standard and all compact wall units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically Compatible with legacy SpectrAlert and SpectAlert Advance devices
- Compatible with MDL3 sync module
- Listed for wall mounting only

Agency Listings

SIGNALING UL LISTED
S5512
S4011

FM APPROVED
FM approved except for ALERT models 3057383, 3057072

7125-1653:0504
7135-1653:0503

The System Sensor L-Series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draws and modern aesthetics. With white and red plastic housings, standard and compact devices, and plain, FIRE, and FUEGO-printed devices, System Sensor L-Series can meet virtually any application requirement.

The L-Series line of wall-mount horns, strobes, and horn strobes include a variety of features that increase their application versatility while simplifying installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults.

To further simplify installation and protect devices from construction damage, the L-Series utilizes a universal mounting plate for all models with an onboard shorting spring, so installers can test wiring continuity before the device is installed.

Installers can also easily adapt devices to a suit a wide range of application requirements using field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with two volume selections.

L-Series Specifications

Architect/Engineer Specifications

General

L-Series standard horns, strobes, and horn strobes shall mount to a standard 2 x 4 x 1 7/8-inch back box, 4 × 4 × 1½-inch back box, 4-inch octagon back box, or double-gang back box. L-Series compact products shall mount to a single-gang 2 × 4 × 1⅞-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products for all standard models and a separate universal mounting plate shall be used for mounting wall compact models. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, L-Series products, 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 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified unfiltered power supply. Strobes and horn strobes shall have field-selectable candela settings including 15, 30, 75, 95, 110, 135, and 185.

Strobe

The strobe shall be a System Sensor L-Series Model _____ listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act 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.

Horn Strobe Combination

The horn strobe shall be a System Sensor L-Series Model _____ listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act 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. The horn shall have two audibility options and an option to switch between a temporal three pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. The horn on horn strobe models shall operate on a coded or non-coded power supply.

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 Strobes at 1 Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn strobe models over a single pair of wires. 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/Electrical Specifications

Standard Operating Temperature	32°F to 120°F (0°C to 49°C)
Humidity Range	10 to 93% non-condensing
Strobe Flash Rate	1 flash per second
Nominal Voltage	Regulated 12 DC or regulated 24 DC/FWR[1,2]
Operating Voltage Range	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Operating Voltage Range MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6˝L × 4.7˝W × 1.91˝D (143 mm L × 119 mm W × 49 mm D)
Compact Wall-Mount Dimensions (including lens)	5.26" L x 3.46" W x 1.91" D (133 mm L x 88 mm W x 49 mm D)
Horn Dimensions	5.6˝L × 4.7˝W × 1.25˝D (143 mm L × 119 mm W × 32 mm D)
Compact Horn Dimensions	5.25" L x 3.45" W x 1.25" D (133mm L x 88mm W x 32mm D)

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 cd and 30 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

		8–17.5 Volts	16–33 Volts	
	Candela	DC	DC	FWR
Candela Range	15	88	43	60
	30	143	63	83
	75	N/A	107	136
	95	N/A	121	155
	110	N/A	148	179
	135	N/A	172	209
	185	N/A	222	257

UL Max. Horn Current Draw (mA RMS)

		8–17.5 Volts	16–33 Volts	
Sound Pattern	dB	DC	DC	FWR
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL Max. Current Draw (mA RMS), Wall Horn Strobe, Candela Range (15–185 cd)

	8–17.5 Volts		16–33 Volts						
DC Input	15cd	30cd	15cd	30cd	75cd	95cd	110cd	135cd	185cd
Temporal High	98	158	54	74	121	142	162	196	245
Temporal Low	93	154	44	65	111	133	157	184	235
Non-Temporal High	106	166	73	94	139	160	182	211	262
Non-Temportal Low	93	156	51	71	119	139	162	190	239
3.1K Temporal High	93	156	53	73	119	140	164	190	242
3.1K Temporal Low	91	154	45	66	112	133	160	185	235
3.1K Non-Temporal High	99	162	69	90	135	157	175	208	261
3.1K Non-Temporal Low	93	156	52	72	119	138	162	192	242
	16–33 Volts								
FWR Input	15cd	30cd	75cd	95cd	110cd	135cd	185cd		
Temporal High	83	107	156	177	198	234	287		
Temporal Low	68	91	145	165	185	223	271		
Non-Temporal High	111	135	185	207	230	264	316		
Non-Temportal Low	79	104	157	175	197	235	283		
3.1K Temporal High	81	105	155	177	196	234	284		
3.1K Temporal Low	68	90	145	166	186	222	276		
3.1K Non-Temporal High	104	131	177	204	230	264	326		
3.1K Non-Temporal Low	77	102	156	177	199	234	291		

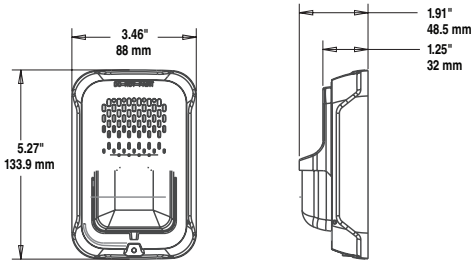
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

			8–17.5 Volts	16–33 Volts	
Switch Position	Sound Pattern	dB	DC	DC	FWR
1	Temporal	High	84	89	89
2	Temporal	Low	75	83	83
3	Non-Temporal	High	85	90	90
4	Non-Temporal	Low	76	84	84
5	3.1 KHz Temporal	High	83	88	88
6	3.1 KHz Temporal	Low	76	82	82
7	3.1 KHz Non-Temporal	High	84	89	89
8	3.1 KHz Non-Temporal	Low	77	83	83
9*	Coded	High	85	90	90
10*	3.1 KHz Coded	High	84	89	89

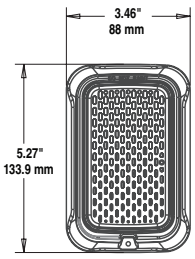
* Settings 9 and 10 are not available on 2-wire horn strobes. Temporal coding must be provided by the NAC. If the NAC voltage is held constant, the horn output remains constantly on.

L-Series Dimensions

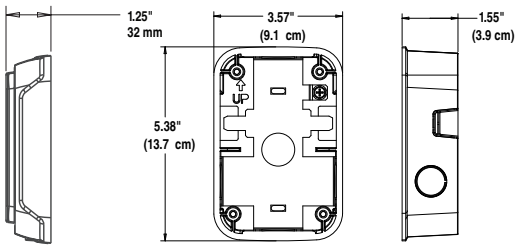


A0548-00

Compact Strobe, Horn Strobe



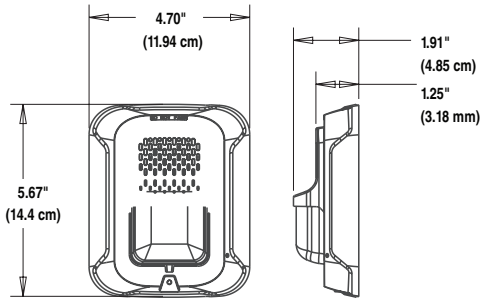
Compact Horn



A0547-00

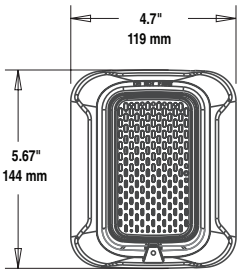
A0557-00

Compact Wall Surface Mount Back Box
SBBGRL, SBBGWL

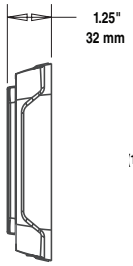


A0550-00

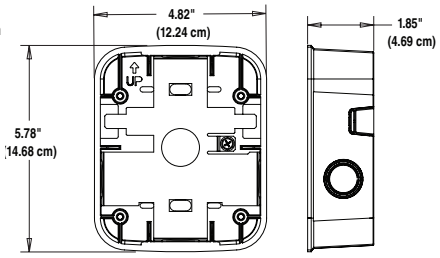
Strobe, Horn Strobe



Horn



A0549-00



A0554-01

Wall Surface Mount Back Box
SBBRL/SBBWL

L-Series Ordering Information

Model	Description
Wall Horn Strobes	
P2RL	2-Wire, Horn Strobe, Red
P2WL	2-Wire, Horn Strobe, White
P2GRL	2-Wire, Compact Horn Strobe, Red
P2GWL	2-Wire, Compact Horn Strobe, White
P2RL-P	2-Wire, Horn Strobe, Red, Plain
P2WL-P	2-Wire, Horn Strobe, White, Plain
P2RL-SP	2-Wire, Horn Strobe, Red, FUEGO
P2WL-SP	2-Wire, Horn Strobe, White, FUEGO
P4RL	4-Wire, Horn Strobe, Red
P4RW	4-Wire, Horn Strobe, White
Wall Strobes	
SRL	Strobe, Red
SWL	Strobe, White
SGRL	Compact Strobe, Red
SGWL	Compact Strobe, White
SRL-P	Strobe, Red, Plain
SWL-P	Strobe, White, Plain
SRL-SP	Strobe, Red, FUEGO
SWL-CLR-ALERT	Strobe, White, ALERT

Model	Description
Horns	
HRL	Horn, Red
HWL	Horn, White
HGRL	Compact Horn, Red
HGWL	Compact Horn, White
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White

Notes:
All -P models have a plain housing (no “FIRE” marking on cover)
All -SP models have “FUEGO” marking on cover
All -ALERT models have “ALERT” marking on cover

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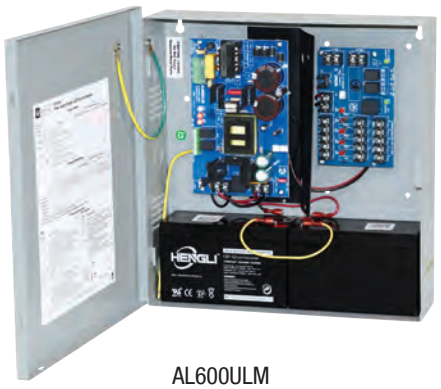
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AVDS865-04 • 11/17/2017

Intrusion Alarm Field Devices

M Series

Multi-Output Power Supply/Chargers



AL600ULM

Altronix M series access control power supply/chargers are specifically designed for use with access control systems and accessories. These units convert a 115VAC, 60Hz input into five (5) individually protected 12VDC or 24VDC outputs (see specifications). Each output will route power to a variety of access control hardware devices including Mag Locks, Electric Strikes, Magnetic Door Holders, etc. These outputs will operate in both Fail-Safe and Fail-Secure modes. Controlled trigger input is achieved through normally open [NO] or normally closed [NC] supervised input or the polarity reversal from an FACP (Fire Alarm Control Panel). A form "C" dry output relay enables HVAC Shutdown, Elevator Recall or may be used to trigger auxiliary devices.

Key Features

- Fire Alarm Panel or Access Control System trigger inputs. [NO] or [NC] supervised trigger input and polarity reversal trigger input (4mA draw from FACP)
- Five (5) individual power-limited Class 2 outputs (auto-resettable)
- Filtered and electronically regulated outputs
- Thermal and short circuit protection with auto reset.
- Overload protection
- Output relay energizes when unit is triggered (form "C" contact rated 1A @ 28VDC)
- Supervision:
  - AC Fail
  - Battery Fail and Battery Presence
- Built-in charger for sealed lead acid or gel type batteries
- Instantaneous transfer to stand-by batteries
- Power and input trigger LEDs
- DC output LED indicator
- LEDs indicate condition of power outputs
- UL Listed in the U.S. and Canada
- CSFM Approved
- Lifetime Warranty
- All units are available in grey or red enclosure

M Series Power Supply Configuration Reference Chart

<table>
<tr><th>Altronix Model Number</th><th>115VAC, 60Hz Input Current Draw (A)</th><th>Power Supply Board Input Fuse Rating</th><th>Power Supply Board Battery Fuse Rating</th><th>12VDC Total Output Current (A)</th><th>24VDC Total Output Current (A)</th><th>Class 2 Rated Power-Limited PTC Outputs (auto-resettable)</th><th>Accommodates Batteries</th></tr>
<tr><td>AL300ULM</td><td rowspan="6">3.5A</td><td rowspan="8">5A/250V</td><td rowspan="4">15A/32V</td><td rowspan="2">2.5</td><td rowspan="2">2.5</td><td rowspan="8">5</td><td>Two (2) 7AH</td></tr>
<tr><td>AL300ULMX</td><td>Two (2) 12AH</td></tr>
<tr><td>AL400ULM</td><td rowspan="2">4</td><td rowspan="2">3</td><td>Two (2) 7AH</td></tr>
<tr><td>AL400ULMX</td><td>Two (2) 12AH</td></tr>
<tr><td>AL600ULM</td><td rowspan="2">–</td><td rowspan="2">6</td><td rowspan="2">6</td><td>Two (2) 7AH</td></tr>
<tr><td>AL600ULMX</td><td>Two (2) 12AH</td></tr>
<tr><td>AL1012ULM</td><td>2.6A</td><td rowspan="2">15A/32V</td><td>10</td><td>–</td><td>One (1) 12AH</td></tr>
<tr><td>AL1024ULM</td><td>4.2A</td><td>–</td><td>10</td><td>Two (2) 12AH</td></tr>
</table>

Specifications

Input

Voltage	115VAC, 60Hz
Input Fuse	Varies, see Reference Chart

Outputs

Voltage	12VDC or 24VDC, see Reference Chart
Current	Varies, see Reference Chart
Protection	PTC 2.5A
Other	Overvoltage protection Filtered and regulated outputs

Battery Charging

Capacity	7AH/12VDC (AL300ULM, AL400ULM, AL600ULM) 12AH/12VDC (AL300ULMX, AL400ULMX, AL600ULMX, AL1012ULM, AL1024ULM)
Type	Sealed lead acid or gel type
Failover	Upon AC loss, instantaneous

Batteries are sold separately

Supervision

AC Failure	Form "C" contacts
Battery	Form "C" contacts

Indicators (LED)

Input	115VAC is present
DC Output	Powered
Battery	Discharged or not connected
Power and Input	Individual LEDs indicate outputs are triggered (relays energized)

Agency Listings

All Models:

UL:

UL294	Access Control System Units

cUL:

CSA C22.2 No.205 Signal Equipment

All Models in Series, Except AL1012ULM:

UL1481	Fire Protective Signaling Systems
CSFM	California State Fire Marshall Approved

AL300ULM, AL400ULM, AL600ULM Only:

UL603	Burglar Alarms Systems
UL1069	Hospital Signaling and Nurse Call Equipment

Physical and Environmental

Dimensions (H x W x D)

AL300ULM, AL400ULM, AL600ULM:

Enclosure: 13.5" x 13" x 3.25" (342.9mm x 330.2mm x 82.6mm)
Shipping: 15" x 13.875" x 4.75" (381mm x 352.4mm x 120.6mm)

AL300ULMX, AL400ULMX, AL600ULMX, AL1012ULM, AL1024ULM:

Enclosure: 15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm)
Shipping: 16.5" x 13.5" x 6" (419.1mm x 342.9mm x 152.5mm)

Weight (approx.)

Model	Product Weight	Shipping Weight
AL300ULM	7.6 lb. (3.45 kg)	8.6 lb. (3.9 kg)
AL300ULMX	9.4 lb. (4.26 kg)	10.4 lb. (4.72 kg)
AL400ULM	7.6 lb. (3.45 kg)	8.6 lb. (3.9 kg)
AL400ULMX	9.4 lb. (4.26 kg)	10.4 lb. (4.72 kg)
AL600ULM	7.9 lb. (3.58 kg)	8.9 lb. (4.04 kg)
AL600ULMX	9.7 lb. (4.4 kg)	11.2 lb. (5.1 kg)
AL1012ULM	8.95 lb. (4.06 kg)	10.25 lb. (4.65 kg)
AL1024ULM	10.8 lb. (4.90 kg)	11.8 lb. (5.35 kg)

Temperature

Operating:	0ºC to 49ºC (32ºF to 120ºF)
Storage:	– 20ºC to 70ºC (– 4ºF to 158ºF)

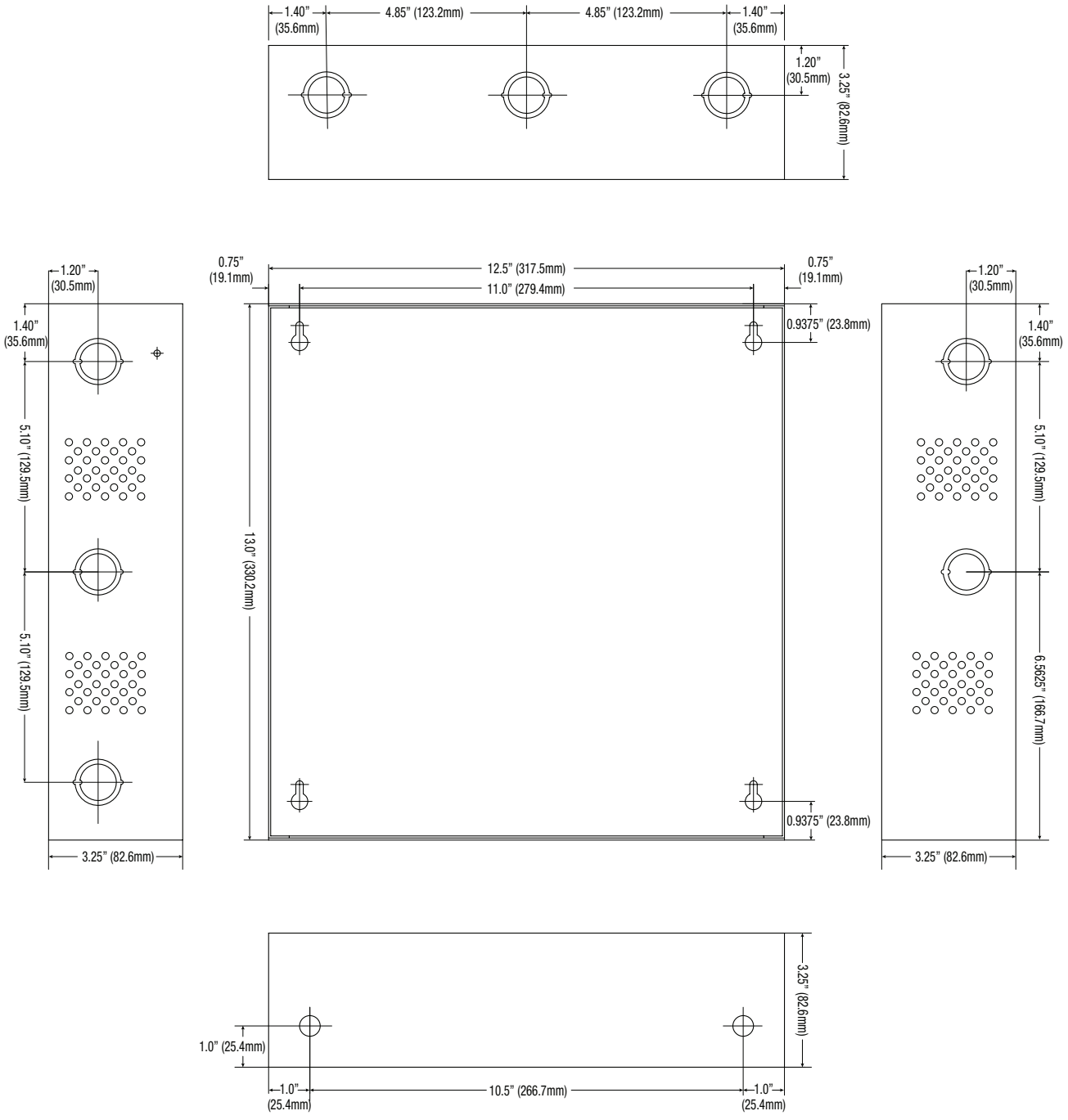
Relative Humidity 85% +/– 5%

BTU/Hr. (approx.)

Model	12VDC	24VDC
AL300ULM(X)	15	31
AL400ULM(X)	25	37
AL600ULM(X)	37	74
AL1012ULM	61	N/A
AL1024ULM	N/A	123

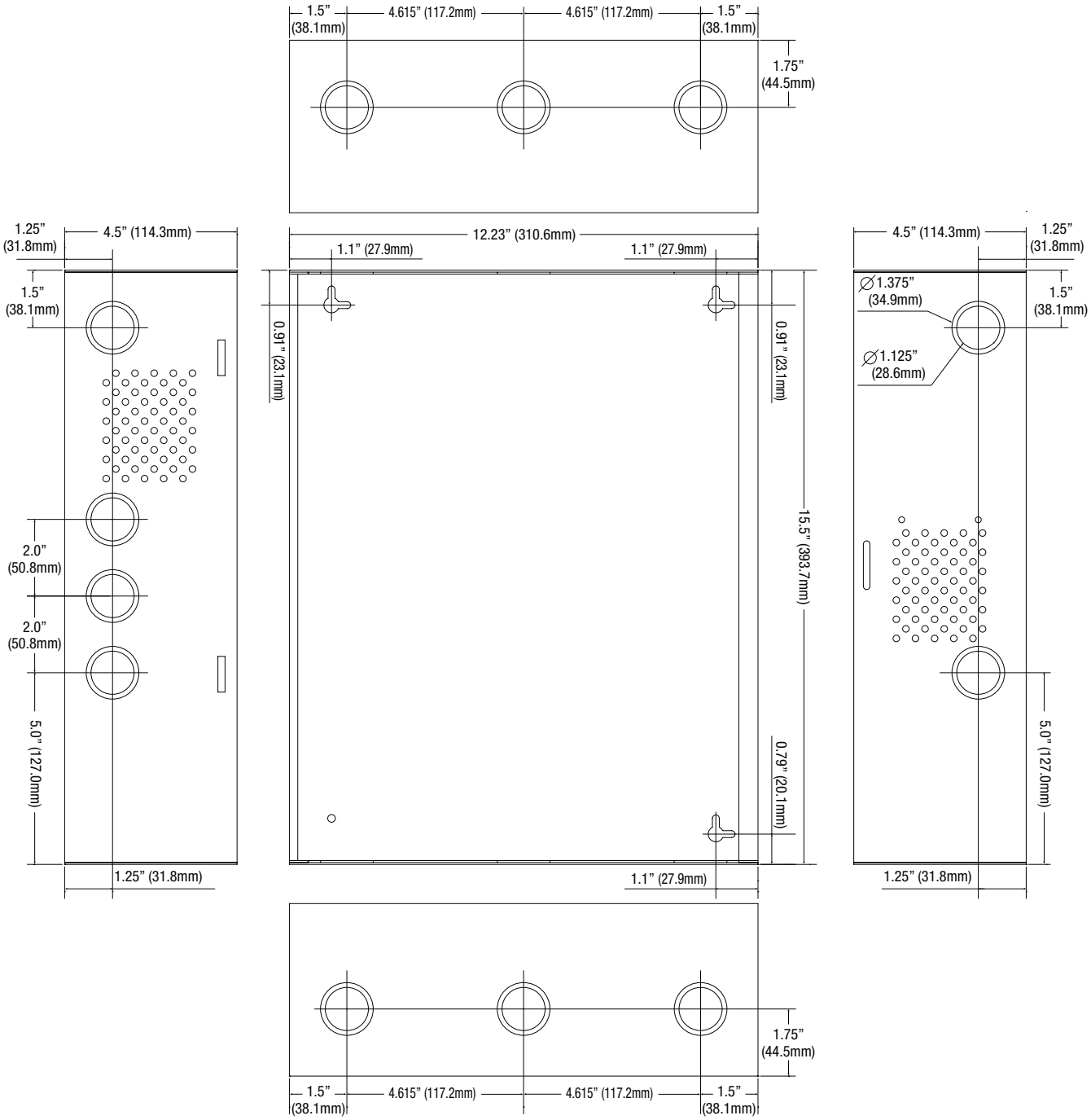
Dimensions and Drawing

AL300ULM, AL400ULM, AL600ULM Dimensions (H x W x D approximate)
13.5" x 13" x 3.25" (342.9mm x 330.2mm x 82.55mm)



Dimensions and Drawing

AL300ULMX, AL400ULMX, AL600ULMX, AL1012ULM, AL1024ULM Dimensions (H x W x D approximate)
15.5" x 12" x 4.5" (393.7mm x 304.8mm x 114.3mm)



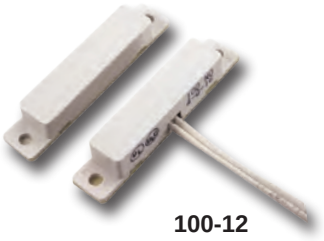
2” Miniature Surface Mount Switch Set

WWW.GRISK.COM

100 / 110 Series

UL LISTED ULC LISTED

- Miniature profile series is perfect for residential and light commercial applications
- Surface mount magnetic contact
- Screw down flange or self stick
- 12” #22AWG leads or screw terminals
- Longer leads, zip cord or jacketed cable upon request
- Hermetically sealed
- Plated contacts resist sticking or freezing
- Covers and mounting hardware included
- Built in E.O.L. Resistors and Diodes upon request
- Supervisory loops upon request
- Switches and magnets available separately
- Colors: white, brown, gray and almond
- Private labeling upon request
- Lifetime Warranty



100-12



100-T



100-TC



110-T



110-12

Part Numbers

	Closed Loop	Open Loop	SPDT
Standard Gap up to 1”	100-12	101-12	102-12
	100-T	101-T	
	100-TC	101-TC	
	110-12	111-12	112-12
	110-T	111-T	
Wide Gap up to 1 1/4”	100-12WG	101-12WG	
	100-TWG	101-TWG	102-12WG
	100-TCWG	101-TCWG	
	110-12WG	111-12WG	112-12WG
	110-TWG	111-TWG	

WARRANTY: Lifetime warranty against workmanship, material and factory defects.

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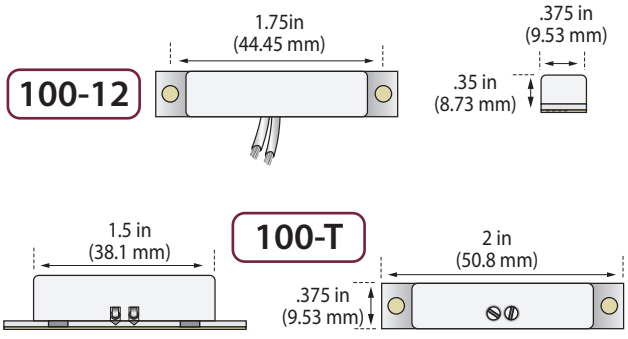
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2” Miniature Surface Mount Switch Set

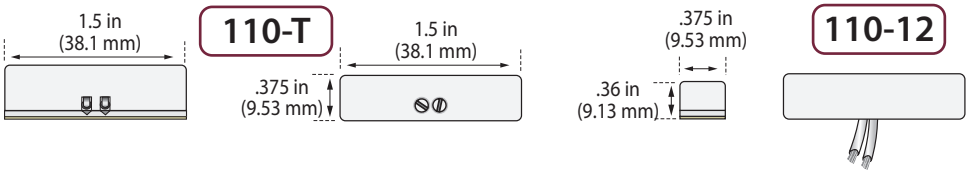
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INSTALLATION APPLICATIONS

This series is one of our most popular miniature surface mount switches. Available both with and without flanges, this low profile series is perfect for residential and commercial use where larger configurations are not appropriate. Incorporates into most decor without being noticeable. Available in regular and wide gap. The 100 series come with mounting screws yet all come with 3M tape for mounting on aluminum, wood or vinyl. Spacers, switch only, magnet only and additional 3M tape are also available separately. Molded covers are included with P/N 100-TC.



Magnets have same case as corresponding switch.



GRI PRODUCTS MEET OR EXCEED THESE MINIMUM GENERAL SPECIFICATIONS:

Part Number	Loop Type	Electrical Configuration	Reed Form	Max. Initial Contact Resistance (Ω)	Max. Contact Rating (W)	Max. Switching Voltage (VDC)	Max. Switching Current (A)
100-12	Closed	N/O	A	.150	10	200	.500
100-12WG	Closed	N/O	A	.150	10	200	.500
100-T	Closed	N/O	A	.150	10	160	.400
100-TWG	Closed	N/O	A	.150	10	160	.400
100-TC	Closed	N/O	A	.150	10	160	.400
100-TCWG	Closed	N/O	A	.150	10	160	.400
110-12	Closed	N/O	A	.150	10	200	.500
110-12WG	Closed	N/O	A	.150	10	200	.500
110-T	Closed	N/O	A	.150	10	160	.400
110-TWG	Closed	N/O	A	.150	10	160	.400
101-12	Open	N/C	B	.140	5	175	.250
101-12WG	Open	N/C	B	.140	5	175	.250
101-T	Open	N/C	B	.140	5	175	.250
101-TC	Open	N/C	B	.140	5	175	.250
101-TCWG	Open	N/C	B	.140	5	175	.250
101-TWG	Open	N/C	B	.140	5	175	.250
111-12	Open	N/C	B	140	5	175	.250
111-12WG	Open	N/C	B	.140	5	175	.250
111-T	Open	N/C	B	.140	5	175	.250
111-TWG	Open	N/C	B	.140	5	175	.250
102-12	Open/Closed	SPDT	C	.140	5	175	.250
102-12WG	Open/Closed	SPDT	C	.140	5	175	.250
112-12	Open/Closed	SPDT	C	.140	5	175	.250
112-12WG	Open/Closed	SPDT	C	.140	5	175	.250

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3/4" & 1" Steel Door Recessed Switch Set

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180 / 184 / 8080-T Series

UL LISTED ULC LISTED

- Recessed magnetic contact
- 12" #22AWG leads or screw terminals
- Longer leads, zip cord or jacketed cable upon request
- Built in E.O.L. Resistors and Diodes upon request
- Supervisory Loops upon request
- Colors white, brown, gray, black
- Classified UL Listed 10C Indicates U.L. 10C Fire Rated



180-12



184-12 CE



8484-T



8080-T

Part Numbers

		Closed Loop	Open Loop	SPDT	DPDT
Standard Gap up to 1/2" on steel*	3/4" Dia.	180-12 (Classified UL Listed 10C)	185-12	190-12	195-12
	1" Dia.	CE 184-12 (Classified UL Listed 10C)	189-12	194-12	CE 199-12
	3/4" Dia	8080-T	8585-T		
	1" Dia.	8484-T	8989-T		
Wide Gap 3/4"+ on steel*	3/4" Dia.	180-12WG (Classified UL Listed 10C)	185-12WG	190-12WG	195-12WG
	1" Dia.	184-12WG (Classified UL Listed 10C)	189-12WG	194-12WG	199-12WG
	3/4" Dia	8080-TWG	8585-TWG		
	1" Dia.	8484-TWG	8989-TWG		

7/8" Diameter also available. P/N 81-12 & 81-12WG, white or black only. Call the factory for more information.

INSTALLATION APPLICATIONS

The GRI 180-12 is the industry standard 3/4" diameter recessed steel door switch set with 12" leads. The innovative GRI 8080-T series is a 3/4" diameter recessed switch set designed for residential, commercial and industrial doors and frames. The shorter length terminals makes the installation of the set quick and simple.

WARRANTY: Lifetime warranty against workmanship, material and factory defects.

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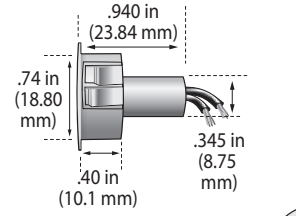
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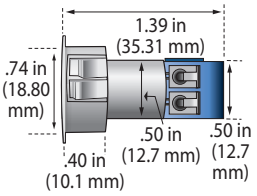
3/4" & 1" Steel Door Recessed Switch Set

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180-12

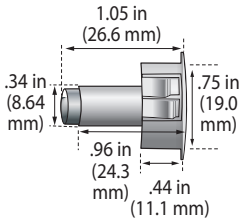


8080-T

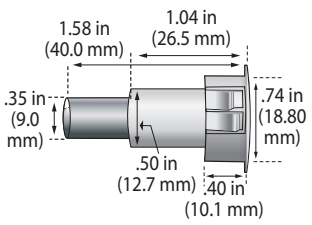


.92 in
(23.37 mm)
Diameter

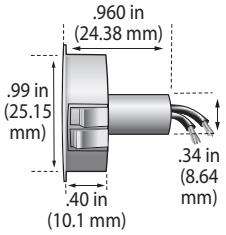
Magnet



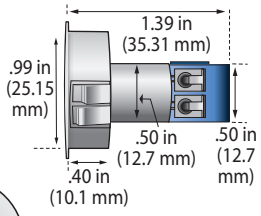
WG Magnet



184-12

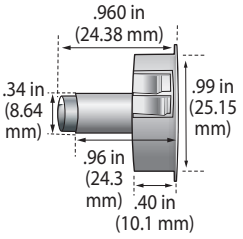


8484-T

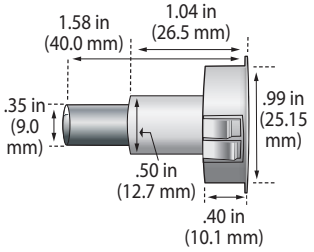


1.18 in
(30.0 mm)
Diameter

Magnet



WG Magnet



GRI PRODUCTS MEET OR EXCEED THESE MINIMUM GENERAL SPECIFICATIONS:

Part Number	Loop Type	Electrical Configuration	Reed Form	Maximum Initial Contact Resistance (Ω)	Max. Contact Rating (W)	Max. Switching Voltage (VDC)	Max. Switching Current (A)
180-12	Closed	N/O	A	.150	10	200	.400
180-12WG	Closed	N/O	A	.150	10	200	.400
184-12	Closed	N/O	A	.150	10	200	.400
184-12WG	Closed	N/O	A	.150	10	200	.400
8080-T	Closed	N/O	A	.150	10	160	.400
8080-TWG	Closed	N/O	A	.150	10	160	.400
8484-T	Closed	N/O	A	.150	10	160	.400
8484-TWG	Closed	N/O	A	.150	10	160	.400
185-12	Open	N/C	B	.140	5	175	.250
185-12WG	Open	N/C	B	.140	5	175	.250
189-12	Open	N/C	B	.140	5	175	.250
189-12WG	Open	N/C	B	.140	5	175	.250
8585-T	Open	N/C	B	.140	5	175	.250
8585-TWG	Open	N/C	B	.140	5	175	.250
8989-T	Open	N/C	B	.140	5	175	.250
8989-TWG	Open	N/C	B	.140	5	175	.250
190-12	Open/Closed	SPDT	C	.140	5	175	.250
190-12WG	Open/Closed	SPDT	C	.140	5	175	.250
194-12	Open/Closed	SPDT	C	.140	5	175	.250
194-12WG	Open/Closed	SPDT	C	.140	5	175	.250
195-12		DPDT	Cx2	.140	5	175	.250
195-12WG		DPDT	Cx2	.140	5	175	.250
199-12		DPDT	Cx2	.140	5	175	.250
199-12WG		DPDT	Cx2	.140	5	175	.250

WARRANTY: Lifetime warranty against workmanship, material and factory defects.

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Proudly Made in U.S.A.

Industrial Overhead Door Switch Set

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200 / 250 Series

LISTED LISTED

- Extruded aluminum floor or wall mount switch
- Screw mount
- #22AWG in 36" stainless steel armored cable
- Longer leads upon request
- Longer leads available upon request
- Hermetically sealed
- Plated contacts resist sticking or freezing
- Built-in E.O.L. Resistors and Diodes upon request
- Supervisory loops available upon request
- Switches and magnets available separately
- Lifetime Warranty





Part Numbers

	Closed Loop	Open Loop	SPDT	DPDT
Floor Mount				
Gap 2 1/2"	200-36	210-36	220-36	230-36
Gap 3"	200-36HD			
Wall Mount				
Gap 2 1/2"	250-36	260-36	270-36	280-36
Gap 3"	250-36HD			

INSTALLATION APPLICATIONS

The GRI 200 series is referenced and produced as an industrial grade floor mount switch. Primarily used for the protection of overhead doors where the operation of heavy motorized traffic would make it impossible to use any type of a plastic encapsulated switch. The 200 housing is extruded from a 6063 T5 aluminum material and tested to withstand a crushing force of 20,000 pounds or 10 tons without harming or causing failure of the delicate reed switch. All mounting hardware, including lead anchors, are provided as well as a mounting bracket for the actuating magnet. A 1/4" masonry bit is required for lead anchor installation.

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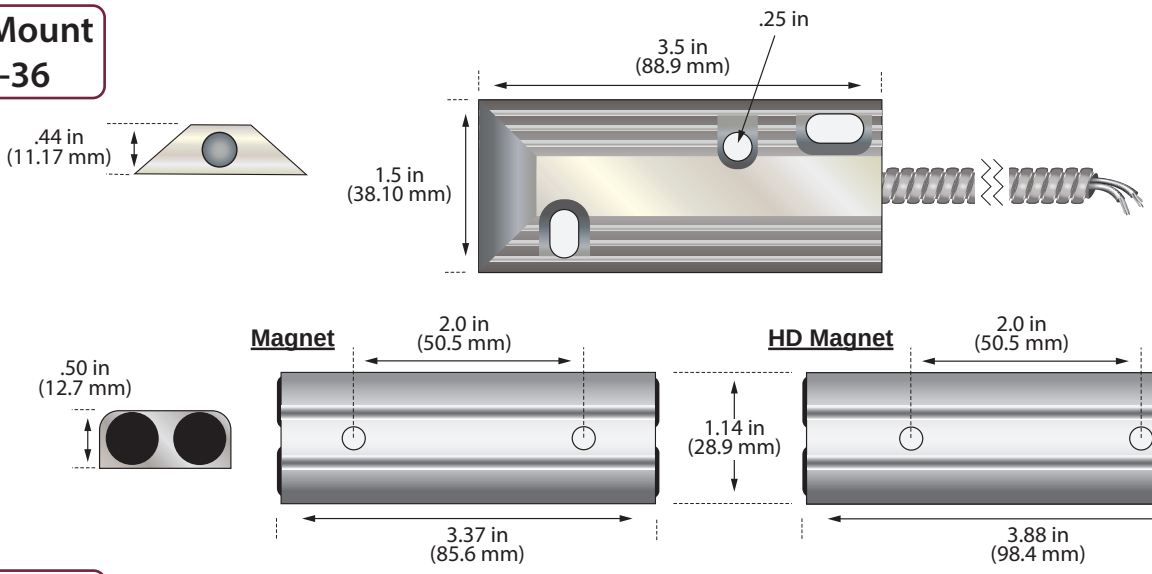
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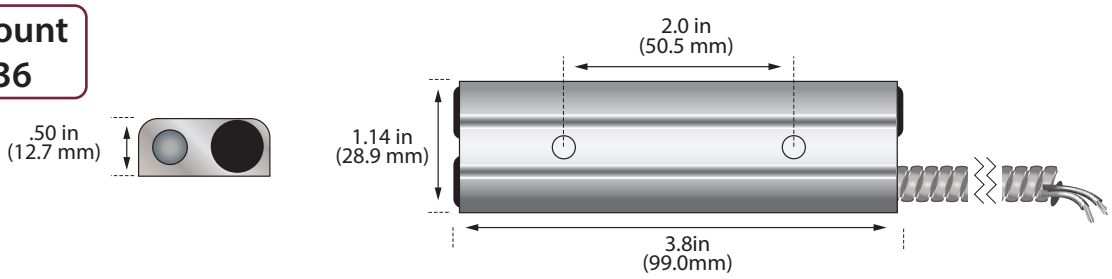
Industrial Overhead Door Switch Set

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Floor Mount 200-36



Wall Mount 250-36



GRI PRODUCTS MEET OR EXCEED THESE MINIMUM GENERAL SPECIFICATIONS:

Part Number	Loop Type	Electrical Configuration	Reed Form	Max. Initial Contact Resistance (Ω)	Max. Contact Rating (W)	Max. Switching Voltage (VDC)	Max. Switching Current (A)
200-36	Closed	N/O	A	.150	10	200	.500
200-36HD	Closed	N/O	A	.150	10	200	.500
250-36	Closed	N/O	A	.150	10	200	.500
250-36HD	Closed	N/O	A	.150	10	200	.500
210-36	Open	N/C	B	.140	5	175	.250
260-36	Open	N/C	B	.140	5	175	.250
220-36	Open/Closed	SPDT	C	.140	5	175	.250
270-36	Open/Closed	SPDT	C	.140	5	175	.250
230-36		DPDT	CX2	.140	5	175	.250
280-36		DPDT	CX2	.140	5	175	.250

WARRANTY: Lifetime warranty against workmanship, material and factory defects.

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HUB-T
HOLD-UP BUTTON



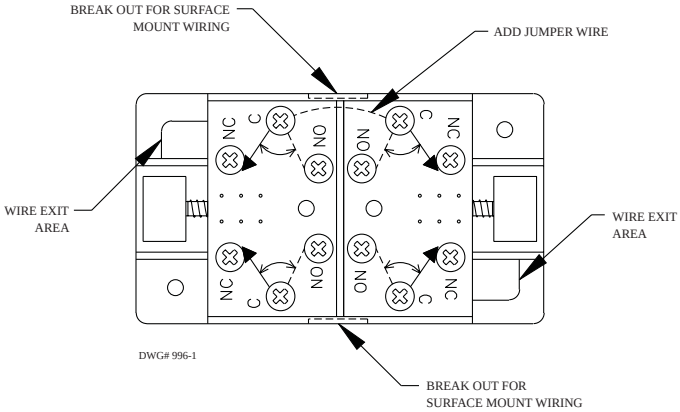
Stock No. 2020132

UL & CUL Listed
Dimensions: 2 1/16"W x 3 7/16"L x 1 1/4"H
52,4 cm W x 87,3 cm L x 2,7 cm H
Weight: 2.4 oz.
68,0 g.
Switch Rating: 3 Amps at 28V DC/AC
.05 Amp at 125V DC Resistive
Enclosure: ABS Plastic
Temperature Range: 32°F to 140°F (85% maximum humidity)
Environmental Limitations: Not recommended for outdoor use or use in coolers or freezers.

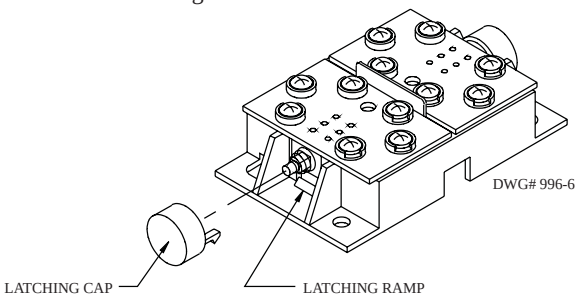
The HUB-T Series Hold-Up Buttons provide two sets of momentary or latching DPDT contacts for actuating surveillance cameras or other security applications, in addition to the hold-up signal. The two sets of contacts may be used independently of each other, or they may be wired in series with a jumper wire for additional protection against false alarms. See illustration on page 2.

Installation
Install in accordance with UL 681. Devices should be installed so they cannot be observed by the public and so they can be operated inconspicuously. At least one shall be installed in each vault open during business hours. In banks they shall also be installed in offices commanding a view of the public space.

HUB-T (Shown without cover)

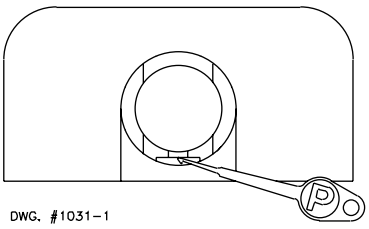


Converting The HUB-T To Optional Latching Operation
Remove the installed button caps and discard. Replace with alternate latching caps (supplied). Align the cap such that the latching mechanism is directly over the latching ramp in the base. See illustration at right.



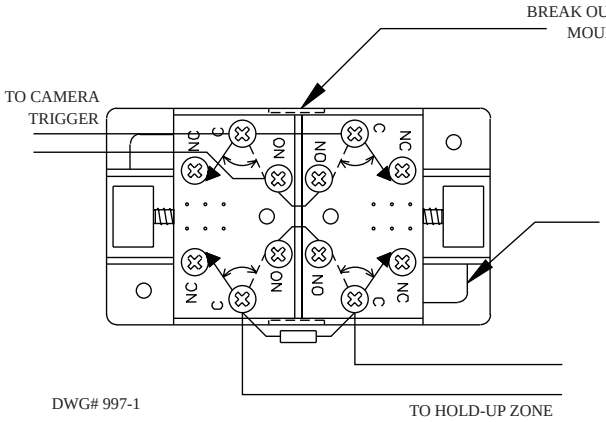
HUB-T (Shown with cover)

To unlatch the HUB-T, insert the reset key, provided with the HUB-T, between the switch cap and the base. The unit unlatches when the cap is released.

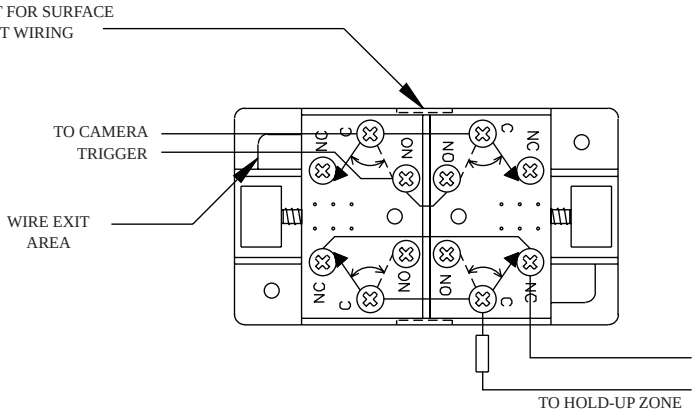


HUB-T (Shown without cover)

Normally Open Hold-up Circuit With EOL Supervision



Normally Closed Hold-up Circuit With EOL Supervision



Electrical interlock requires both buttons to be activated simultaneously before alarm will occur. Any single button will activate camera.

Note: Jumpers required

Commercial Series Gen2 TriTech Motion Detectors



- TriTech. Passive infrared and microwave Doppler radar detection with First Step Processing.
- C^2DT: Cloak and Camouflage Detection Technology maximizes catch performance against intruders attempting to cover their infrared signal.
- Flexible Mounting Height and Integrated EOL resistors.
- Intelligent tamper and impact detection using a MEMS accelerometer.
- Active white light suppression.

The Commercial Series TriTech motion detectors are designed to ensure reliable catch performance and false alarm immunity in commercial applications. Commercial Series motion detectors use a combination of passive infrared (PIR) and microwave Doppler radar detection technologies with advanced signal processing. Features such as integrated, selectable end-of-line resistors, a self-locking enclosure with integrated bubble level, and removable lift gate style terminal strip make installation of Commercial Series detectors faster by up to 45%, easier and more reliable.

Functions

First Step Processing
First Step Processing (FSP) almost instantly responds to intruders without producing false alarms from other sources. FSP adjusts the detector's sensitivity based on signal amplitude, polarity, slope, and timing. The installer can select the sensitivity level, thus improving reliability. The sensitivity level for the Commercial Series motion detectors with anti-mask is approximately 20% higher than in the models without anti-mask, making them more suitable for higher security applications, such as banks, jewelry stores, pharmacies, and other applications.

Microwave Noise Adaptive Processing
Microwave Noise Adaptive Processing adjusts to background disturbances, reducing false alarms from repetitive sources without sacrificing intruder detection.

Integrated Dip switch selectable EOL resistors
The integrated EOL resistors simplify the wiring process and reduce installation time.

Flexible mounting heights
No adjustments required when mounted from 2.3 to 2.75m (7.5 to 9.0 ft). Reduce installation time and false alarms while improving catch performance.

Self-locking enclosure with removable terminal strip
The sliding, self-locking enclosure has an integrated biaxial bubble level and custom gap-free, lift-gate style terminal strip to make installation easier and more reliable.

Dynamic temperature compensation
The detector intelligently adjusts its sensitivity so that it can identify human intruders at virtually any temperature.

Small animal immunity
The small animal immunity feature reduces false alarms from small animals up to 4.5 kg (10 lbs) that may move on the floor within the coverage area of the detector.

Protected, sealed optics and electronics
The optics and electronics are assembled into the front enclosure and sealed with a protective cover to prevent damage during installation. The sealed optical chamber also prevents drafts and insects from affecting the detector.

Cloak and Camouflage Detection Technology
Cloak and Camouflage Detection Technology (C^2DT) maximizes catch performance against intruders attempting to cover their infrared signal.

Test features
Externally visible alarm LED can be disabled after installation.

Switch configuration
The following functions are selectable using switches:
- Alarm LED On and Off
- C^2DT HI and LO

Wall-to-Wall coverage
A user-selectable integrated lookdown zone and coverage range of 15 m x 15 m (50 ft x 50 ft) provide wall-to-wall coverage.

RFI and Impact Immunity
Improved immunity to false alarms from external sources including radio frequency interference, “popcorn noise”, as well as physical impact. Through use of a high performance pyro (infrared) sensor with integrated signal filtering, the highest quality electrical components and design that produces the best-in-class signal to noise ratio, and sophisticated signal processing, these detectors are more robust than ever against false alarms.

Improved Resistance to Sabotage
Detectors are now tested and approved to the EN50131-5-3 requirements for immunity to interference from external radio frequency sources. Detection performance and false alarm immunity are ensured when in the presence of such sources that could degrade the performance of detectors that are not approved to this standard.

Remote Walk Test LED
Users can configure this at the device, enter a command through a keypad, a control center, or programming software to remotely enable or disable the walk test LED.

Active white light suppression
An internal light sensor measures the intensity of the light directed at the face of the detector. Sensor data fusion technology uses this information to eliminate false alarms from bright light sources.

Intelligent detection
With the incorporation of Bosch’s Sensortec Microelectromechanical Sensor (MEMS) 3-axis accelerometer sensing technology, the accelerometer identifies when the detector is installed in an upside-down orientation. An LED sequence occurs signaling that the detector is mounted upside down.

Regulatory information

Region	Agency	Certification
USA and CA	UL and ULC	UL639, C-UL S306-03 LISTING Intrusion Detection Unit, Type: S (CDL2-15G)
	FCC	Part 15 Subpart B & C, Class B, FCCID: T3X-CDL2 (CDL2-15G)
	ISED	RSS210 1249A-CDL2 (CDL2-15G)
EU	CE	CE - 2014/53/EU (RED), 2011/65/EU and 2015/863 (RoHS) (CDL2-15G, CDL2-15H)
	EN	EN 50131-2-4 Grade 2 (CDL2-15G, CDL2-15H) EN 50130-5, Environmental Class II EN60529, EN62262: IP30/ IK04
France	AFNOR	CDL2-15H: 2820200014B0 Grade 2
Germany	VdS	EN-ST-000291
INCERT	INCERT	CDL2-15G: Larmklass 2
UKCA	UKCA	CDL2-15H

Installation/configuration notes

Mounting
The recommended mounting height is 2.3 m to 2.75 m (7.5 ft to 9 ft) with no adjustments required.
Mount the motion detector level, both horizontally and vertically.
The detector can be mounted:
- In a corner by utilizing the beveled edges of the detector base.
- On a flat wall by securing the detector base directly to the wall.
- On a flat wall using the optional B328 Gimbal-mount Bracket, or B335 Swivel-mount Bracket.

- On the ceiling with the optional B338 Ceiling-mount Bracket.

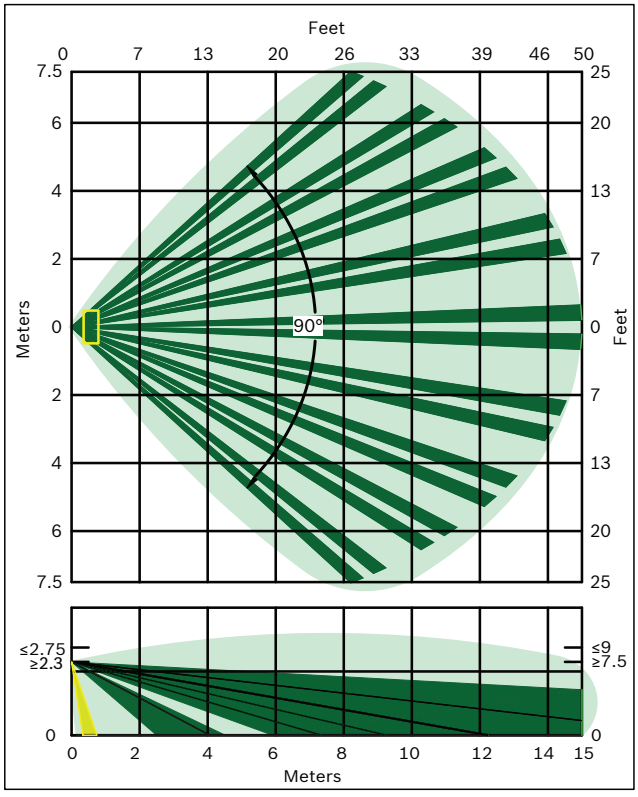


Fig. 1: For other models

Technical specifications

Mechanical

Dimensions	120 mm x 70 mm x 55 mm (4.7 in. x 2.75 in. x 2.2 in.)
Material	High-impact ABS plastic
Color	White
Terminal wire size	Ø 0.40 mm to 1.29 mm (26 AWG to 16 AWG) (UL: 22 AWG to 16 AWG)

Environmental

Relative humidity	< 93% non-condensing
Temperature (operating)	-20° C - +55° C (+4° F - +131° F) EN 50130-5 Environmental Class II: -20° C - +55° C (+4° F - +131° F) UL/C-UL: 0°C - +49°C (+32°F - +120°F)

Electrical

Current	Standby = 15 mA (UL: Maximum current = 35 mA)
Voltage (operating)	9 VDC to 15 VDC
Radio Frequency Interference (RFI) Immunity	No alarm or setup on critical frequencies in the range from 150 kHz to 6 GHz at field strengths less than 10 V/m.

Outputs

Alarm relay, trouble relay	Solid state, supervised, normally-closed (NC) contacts rated for <35 mA, 25 V, 2.5W
Tamper	Supervised, normally-closed (NC) contacts rated for <35 mA, 25 V, 2.5W
End-of-line resistors	Alarm: 1.0 k, 2.2 k Tamper: 1.0 k, 2.2 k, 33 k

Ordering information

CDL2-15G Motion detector, 50ft (15m)
Provides PIR and microwave Doppler radar detection, 15 m x 15 m (50 ft x 50 ft) coverage pattern. Frequency: 10.525 GHz.
Order number **CDL2-15G | F.01U.383.078**

CDL2-15H Motion detector, 50ft (15m), 10.588 G
Provides PIR and microwave Doppler radar detection, 15 m x 15 m (50 ft x 50 ft) coverage pattern. Frequency: 10.588 GHz. For use in France and the United Kingdom.
Order number **CDL2-15H | F.01U.383.079**

Accessories

B328 Mounting bracket, gimbal
Mounts on a single-gang box and allows rotation of a detector. Wires are hidden inside.
Order number **B328 | 4.998.800.277**

B335-3 Mounting bracket, swivel, low profile
Swiveling, low-profile, universal bracket for wall mounting. The vertical swivel range is +10° to -20°, while the horizontal swivel range is ±25°.
Order number **B335-3 | 4.998.800.014**

B338 Mounting bracket, ceiling, universal
Swiveling universal bracket for ceiling mounting. The vertical swivel range is +7° to -16°, while the horizontal swivel range is ±45°.
Order number **B338 | 4.998.800.282**

Represented by:

Europe, Middle East, Africa:
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5600 JB Eindhoven, The Netherlands
Phone: + 31 40 2577 284
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Fax:+49 (0)89 6290 1020
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Singapore 573943
Phone: +65 6571 2808
Fax: +65 6571 2699
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com

B328 Gimbal-mount Bracket

www.boschsecurity.com

BOSCH
Invented for life



Mounts on a single-gang box and allows rotation of a detector. Wires are hidden inside.

Ordering information

B328 Gimbal-mount Bracket
Mounts on a single-gang box and allows rotation of a detector. Wires are hidden inside.
Order number **B328**

ISC-SK10 Shock Sensor

www.boschsecurity.com

BOSCH
Invented for life



- Intelligent 3-axis vibration detection
- Self-learning mode
- Dual-color LED indicator
- Adjustable sensitivity
- Slim design for easy installation

The ISC-SK10 is an advanced shock sensor designed for monitoring and detecting mechanical attacks.
A unique feature of the ISC-SK10 is Self-learning mode. During installation, Self-learning mode uses the sensor's LED behavior as a guide for configuring the sensitivity level.

Functions

Self-learning mode
During Self-learning mode, the sensor records and analyzes simulated vibration data within a 3 minute interval. Based on the simulated data, the sensor provides assistance for setting a suitable sensitivity level for the installation.

Adjustable sensitivity
Desired sensitivity is achieved by selecting any of four sensitivity level switches, and fine sensitivity adjustment using the potentiometer.

Dual-color LED indicator
The green LED indicates vibration, and the red LED indicates alarms. In Self-learning mode, recommended sensitivity level settings are indicated by LED behavior.

Drilling and saw detection enable
Depending on the installation, sensitivity is configurable to detect drilling, sawing, or similar type of vibration.

Certifications and approvals

Region	Certification	
Europe	CE	EN 50130-4:2011, EN61000-6-3:2007/A1:2011, EN60950-1:2006

Installation/configuration notes

Install the sensor indoors on a flat surface.

Detection range

Surface	Radius (m)	Radius (ft)
Concrete	1.5	5
Brick wall	2.5	8
Steel	3	10
Wood	3.5	11.5
Glass	3.5	11.5

Parts included

Quantity	Component
1	Sensor
1	Hardware pack
1	Installation guide

Technical specifications

Properties

Dimensions (H x W x D)	100mm x 30mm x 20mm (3.9 in. x 1.18 in. x .78 in.)
Material	Fire protection high intensity PC enclosure

Environmental

Operating temperature	-10°C to +55°C (-14° F to +131°F)
Storage temperature	-20°C to +70°C (-4° F to +158°F)
Humidity	< 95%

Electrical

Voltage (operating)	9 to 15 VDC, 12 VDC nominal
Current	8.5 mA (standby) 12 mA (alarm)

Outputs

Alarm relay	Normally-closed (NC) relay, contacts rated for 100 mA, 30 VDC
Tamper	Normally-closed (NC) 50 mA, 30 VDC

Ordering information

ISC-SK10 Shock Sensor
Order number **ISC-SK10**

Represented by:

North America:
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Fairport, New York, 14450, USA
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18048624523 | en, V2, 27. Apr 2016

SSX-82 SERIES
DURABLE SIREN/SIREN STROBE



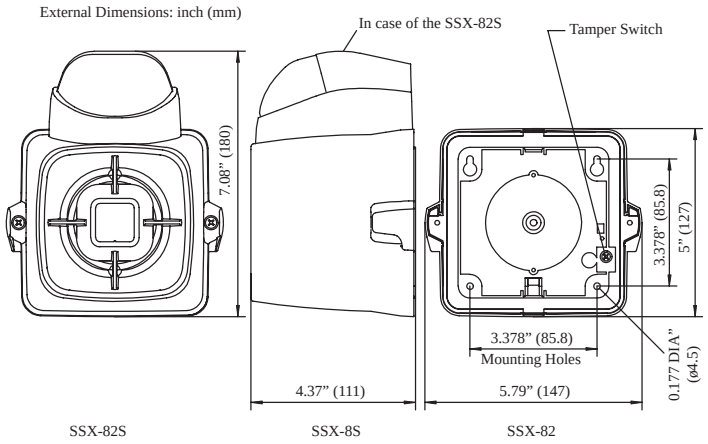
- Self-Contained /Indoor/Outdoor Siren and Siren/Strobe
- Sturdy aluminum back plate
- Strong polycarbonate housing
- Dual tamper protection
- Dual tone (steady and warble)
- 120dB @ 1 meter sound output (steady and warble)
- Mounts directly to wall or 4” square back box
- Strobe consists of colored mirror and lens
- Available strobe colors: Amber, blue, clear, red

The SSX-82 is a durable indoor/outdoor self-contained siren that is a more powerful version of the SSX-52. The full featured siren consists of a single tone that delivers a steady and warble sound output, 120dB @ 1 meter output siren driver, and a dual action reed plunger for cover and rear protection. The SSX-82 is provided with a strong polycarbonate housing and a sturdy aluminum back plate to prevent warping and cracking. The SSX-82 comes completely assembled and ready for installation.

The SSX-82S Siren-Strobe is also available. It includes all the great SSX-82 features with the addition of a colored strobe. The strobe uses a colored mirror and lens to ensure that the color can be easily distinguished, and is available in amber, blue, clear, or red.

The SSX-82/82S excels in noisy areas such as warehouses, loading docks, print shops, busy production floors, or for indoor/outdoor applications where high quality and high output warning is required.

Dimensions: inches (mm)



Model Number	Stock Number	Rated Voltage	Current Draw	Operating Voltage Range	Strobe Specifications			Speaker Specifications		Operating Temperature Range
					Lens Color	Strobe Candela Rating on Axis	Flash Rate	Sound Output	Tamper Contact Capacity	
SSX-82	4150032	12 VDC	1.20 A Max. (typical)	4.8 - 14.4 VDC	-	-	-	120dBA	0.3A @ 12V DC	-4°F to 149°F -20°C to 65°C
SSX-82SA	4150033	12 VDC	1.31 A Max. (typical	9.6 - 14.4 VDC	Amber	2.03 Min.	20 - 100 times/min.			
SSX-82SB	4150034				Blue	1.80 Min.				
SSX-82SC	4150035				Clear	3.08 Min.				
SSX-82SR	4150036				Red	.75 Min.				

FSS-26T

DYNAMIC FLAT TRUMPET SIREN

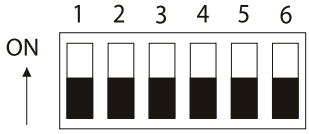


- Wall or ceiling mount
- 6 dip-switch selectable sounds
- 125dB sound output
- Impact resistant housing
- Low profile design
- Patented design
- Bi-directional mounting bracket
- Waterproof housing
- Designer white housing
- FSS-26T: 3.34”(W) x 3.34”(L) x 2.16” (D)

The FSS-26T siren is extremely loud and surprisingly small. It is almost half the size of standard 15 watt trumpet sirens and puts out 125dB. This little screamer is almost as powerful as a big 30 watt horn. However, the FSS-26T is not a high pitched piezo. It does utilize a unique patented reverse trumpet technology to generate the loudest sound blast. In addition, there is a six dip-switch selectable siren sound option. These sounds can be set individually or programmed sequentially. The FSS-26T is an indoor/outdoor design with a reversible mounting bracket.

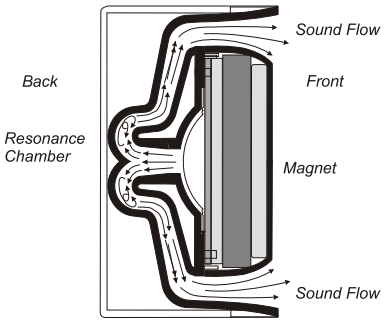
Multiple Tones:

(1) Yelp
(2) Ray Gun Warble
(3) European
(4) Slow Whoop
(5) Pulsing Buzzer
(6) Ray Gun Yowl

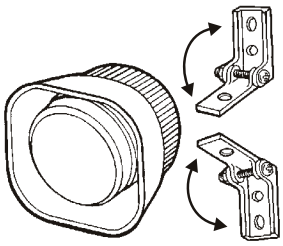


Select the tone by setting the dip-switch to On.

Dynamic Flat Trumpet Design



Bi-directional Mounting Bracket



Weatherproof Housing

Specifications

Model Number	Rated Power (VDC)	Rated Current (Amps)	Multi-Tones (Selectable)	Sound Ouput (dBA/1ft)	Installation Type	Housing Color	Operating Temperature Range
FSS-26T	12	1.2	6	125	Indoor/ Outdoor	White	14°F - 122°F -10°C - 50°C

Access Control Equipment

Access

Overview

OnGuard Access is an integrated access control and alarm monitoring system that delivers maximum protection, versatility, simple operation and cost efficiency. OnGuard Access incorporates the most advanced technologies available, including object-oriented software, client/server database architecture and Microsoft's Windows 7 Professional 64bit operating system.

Unlimited Handling Capacity

OnGuard Access offers unlimited scalability within a single, seamlessly integrated software solution. It has been designed to meet the needs of any size organization, from one that requires an entry-level, two-reader system to a large corporation with numerous facilities and thousands of card readers located around the world. OnGuard Access supports an unlimited* number of card readers, alarm points and cardholders.

Segmentation

Segmentation is an optional feature that provides a logical way to group database components. System administrators define segments within the database, then assign each system user or object (access levels, card formats, badge types, etc.) to one or more of those segments. Segmentation is beneficial in environments where not every cardholder needs access to every area within a facility. A user sees only those objects that are in his segment(s) and those objects that are system-wide. In a segmented system, only those records associated with a particular segment are downloaded to the Intelligent System Controllers and associated field hardware in that segment. By minimizing the number of records that must be stored in a given device, segmentation provides more efficient utilization of the limited memory contained in access control hardware.

FEATURES





Flexible Programming Functions

- First Card Unlock
- Elevator Control
- (Selective) System Downloads
- Import/Export Utility
- Occupancy Limit
- Local and Global Anti-Passback

Flexible Monitoring Functions

- Alarm Masking Groups/Basic Intrusion Functionality
- Graphical Maps and System Overview Tree
- Monitor Zones
- Alarm/Event Mappings and Routings
- Customizable Voice Instructions and Annunciation

Flexible Cardholder Commands

- Escort Control
- Use Limits
- Extended Individual Strike Times and (On-Demand) Door Held Open Times
- Destination Assurance (with Elevator Control)

Flexible Card Reader Commands

- Time Zone Overrides
- Cipher Mode
- Multiple Card Formats
- Denied Access Attempts Counter

OPTIONS

- CCTV Interface
- Paging/E-mail Interface
- Video Verification
- Mustering
- Guard Tour

SUPPORT

- Intelligent System Controller (ISC) Communications
  - Ethernet, Modem, RS-232, Dual-Path, Multidrop (RS-485)
- FIPS 197 128-bit AES Encrypted ISC Communications
- FIPS 140-2 Validation Pending
- Industry Standard Card Reader Technologies
- OSDP (Open Supervised Device Protocol) Readers

Scheduler

OnGuard's scheduling utility allows system administrators to coordinate and plan system actions to be performed in the future. Many system operations can and are often anticipated to occur on certain dates at certain times. To reduce the risk of error in performing these functions manually, administrators can set rules of execution for actions such as starting guard tour, archiving, firmware or database downloads, and DataExchange scripts. Scheduler can also be configured to repeat security actions such as arming/disarming areas or masking/unmasking specific alarms. For any Scheduler action, the iterations can be one-time-only, or repeated at the administrator's desired frequency. Such actions may occur once every hour, at a specific time every day, on a specific day of the week, or on a specific day of the month, recurring as often as the system requires.

Area Control

• Global Hard Anti-passback allows administrators to require that cardholders present credentials to both enter and exit an area. This prevents the same credentials from simultaneously being used elsewhere in the area, while reporting an alarm to the Alarm Monitoring workstation(s).

• Global Soft Anti-passback allows administrators to require that cardholders present credentials to both enter and exit an area. This rule would allow the same credentials to be simultaneously used elsewhere in the area, accompanied by an alarm will be reported to the Alarm Monitoring workstation(s).

• Timed Anti-passback (across readers) allows administrators to determine how long after an accepted card-read before the same credential may be allowed at the same card reader. This rule can also be applied across a group of readers, a valuable feature for turnstile applications where multiple readers are in close, open proximity and credentials have a chance of being passed back for additional use.

• Two Person Control allows administrators to require that two individuals be present before being able to access high-security areas and both credentials be presented upon exit of those areas. In between entry and exit of the first two and last two cardholders, individual access may be allowed as the two-cardholder minimum is in effect.

• Occupancy Limit allows administrators to restrict the amount of cardholders in a specific area at any given time. Once the Occupancy Limit has been reached, a cardholder must use the exit reader before another card read will be accepted at the entry reader. This is a valuable instrument in managing access to parking areas which are at capacity.

Global Input/Output Event Linkage

OnGuard allows administrators to configure linkages where any input/output/event can be linked to any other input/output/event in the system. These linkages can be derived from any OnGuard application and associated hardware. Events such as invalid access level, valid card read, or motion detection might trigger such outputs as unmasking an alarm masking group, open an area or set the active mode of a card reader. With Global I/O, OnGuard is easily automated to ensure rules execute properly and security can be engaged instantly as necessary.

Applications to Integrate

- OnGuard Area Access Manager
- OnGuard Biometrics & Smart Cards
- OnGuard ID CredentialCenter
- OnGuard Fire & Intrusion
- OnGuard VideoManager
- OnGuard Visitor

Integration Toolkits and Standards to Enable

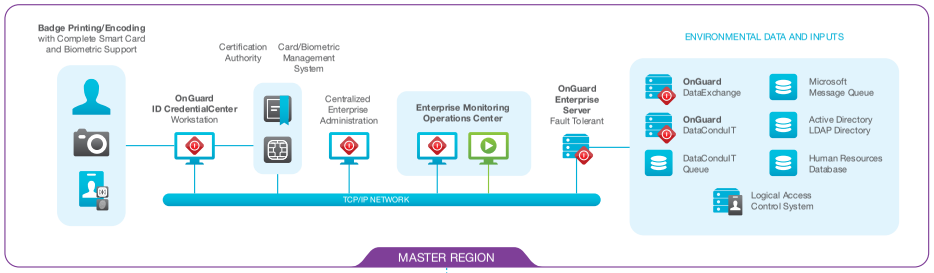
- OnGuard DataExchange
- OnGuard OpenAccess Alliance Program
- OnGuard DataConduIT
- OPC Client/Server
- SNMP Agent/Manager

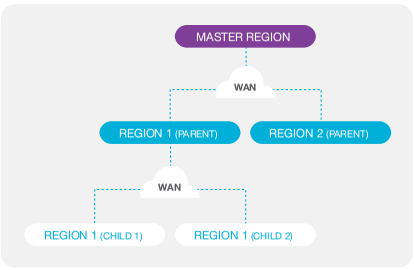
* OnGuard offers you scalability that is only limited by the physical limitations of your system size.

OnGuard® Enterprise

Prism · Lenel NVR · Advanced Services

LENEL OpenAccess Alliance Program



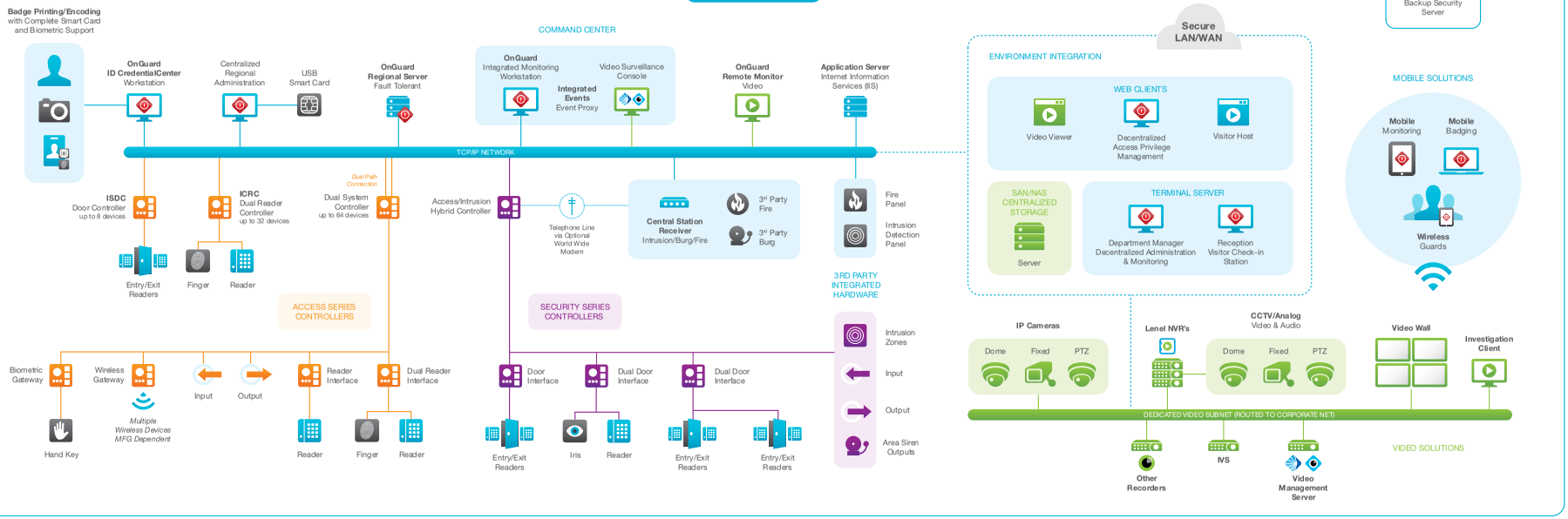


WAN

REGION 1 (PARENT)

ALTERNATE LOCATION

Disaster Recovery
Backup Security Server



lenel.com/OnGuard

(866) 788-5095

Specifications subject to change without notice.

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OG13_SS_AC_030713

LNL-2210

Overview

The LNL-2210 Intelligent Single Door Controller (ISDC) is an edge device by Lenel that provides a solution for interfacing one or two readers to a single door within an OnGuard® system. Offering innovation at an economical price point, the LNL-2210 is a high-performance, Ethernet-ready card reader panel that controls a single opening with 802.3af compliant Power over Ethernet (PoE). Built on a proven platform, the LNL-2210 seamlessly interfaces to a larger system for flexible, reliable expansion. Easy installation with PoE makes this the logical choice for single door control.

Once configured, the LNL-2210 functions independently of the host and is capable of sophisticated processes while controlling access for a single opening. Without host intervention, the LNL-2210 can relate selected system devices and their activity to other onboard devices, consistently allowing those activities and actions to transpire independently.

The LNL-2210 is capable of interfacing with a wide array of reader technologies for single opening control. Reader ports support separate in/out readers and technologies that include Wiegand, clock and data, RS-485, magnetic stripe, keypads, LCD and biometrics - resulting in the flexibility, versatility and reliability needed for success.

An alternative configuration is available with OnGuard version 6.6 and higher for the LNL-2210. The first physical reader port can be configured to support RS-485 communication bus to LNL Door Interfaces (LNL-1300/LNL-1320) or IO devices (LNL-1100/LNL-1200). Up to eight RS-485 addressed devices can be supported on this communication bus. These additional devices must have local power supply, since the POE cannot support them. In this configuration, the second physical reader port on the LNL-2210 is still available for standard single reader interface.



FEATURES & FUNCTIONALITY

Controller Functionality

- Primary Port: 10/100 Ethernet
- Two reader ports: Magnetic stripe, Wiegand, or RS-485 (RS-485 on one reader port capable of supporting two readers)
- Two fixed inputs for door contact and request to exit (REX)
- Two outputs; one dedicated for a strike and one general purpose (Form C, 2A @ 30Vdc)
- 6 MB of available on-board, non-volatile flash memory
- Firmware stored in flash memory, background download of firmware updates supported

Access Control:

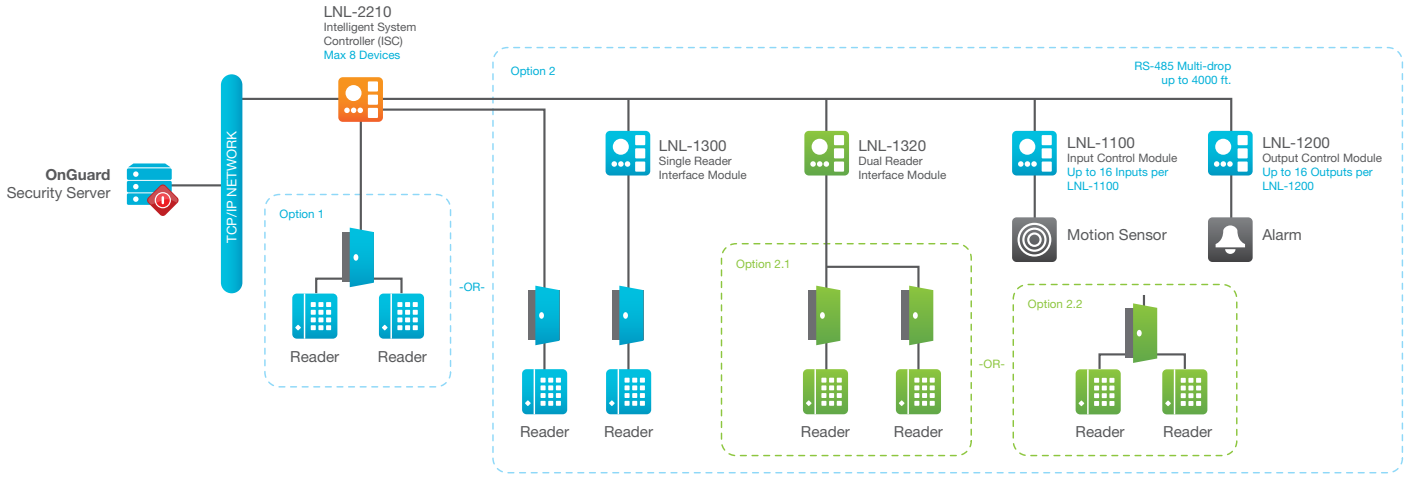
- 240,000 cardholders, 50,000 event transaction buffer
- Up to 128 Access Levels per cardholder
- Programmable card activation and deactivation times and dates

Card Formats:

- Eight active card formats per LNL-2210
- PIV-II, CAC, and TWIC card compatible
- Magnetic stripe, proximity, iClass, multiClass, MIFARE, DESFIRE, biometric template support
- Open Supervised Device Protocol (OSDP) compliant

Additional Functionality:

- Enhanced anti-passback capabilities: nested global hard or soft anti-passback, timed anti-passback, two person control, designated one or two person control, tail gate control and occupancy limit
- Standard or custom end of line resistance
- Paired or single reader support
- Selective download capable
- 255 holidays with grouping, 255 timezones, each with six intervals
- Turnstile support
- Individual extended held open and strike times (ADA required)
- Compact footprint, mounts into standard triple gang switch box
- Advanced Encryption Standard (AES) 128-bit algorithm for communications



Controller Features

LNL-2210	240,000 cardholders 6 MB On-board flash memory available for cardholder & asset database, 50,000 event backed RAM for event log On-board rechargeable battery with up to two week support Maximum two reader support per physical barrier (door)

Specifications

Power input:	Class 3 PoE power input 12.95W, compliant to IEEE 802.3af or 12Vdc +/-10% 900 mA maximum power supply. Note: for UL installations, POE powered devices shall not be used. Power for these devices must be provided by a UL 294 listed power limited source (12Vdc)
Power Output:	12 Vdc @ 650 mA including reader and AUX output
Reader Interface:	PoE: 12Vdc +/- 10% or a local power supply (12Vdc) (PTC limited 150mA max)
Inputs:	Two general purpose programmable circuit type and dedicated tamper
Outputs:	Two relays - form-C, 2 Amp, 30 Vdc
Reader Ports:	Reader Port one: One TTL reader, or one RS-485 type reader. Note: if two RS-485 type readers are used, the second port cannot be utilized Reader Port two: One TTL reader. Note: If the first reader port has two RS-485 readers, then no readers are supported on the second reader port. Two TTL reader ports or one 2-wire RS-485 reader port capable of supporting two readers
Keypad:	Multiplexed with card data
LED:	11 status LED's. TTL, two wire or one wire bi-color support.
Buzzer:	One-wire LED mode
Dimensions:	5.5"W x 2.75"L x .96"H (140mm x 70mm x 24mm) without bracket 5.5"W x 3.63"L x 1.33"H (140mm x 92mm x 34mm) with bracket
Temperature:	Operating: 32° to 158° F (0° to 70° C) Storage: -67° to 185° F (-55° to 85° C)
Heat Output:	18 BTU/hour
Humidity:	10 to 95% relative humidity, non-condensing (RHNC)
Approvals:	FCC Part 15, CE, RoHS, UL 294, UL 294, UL 1076, ULC CSA-C22.2, CAN/ULC-S319-05, cUL/ORD-C1076

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(866) 788-5095

Specifications subject to change without notice.

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LNL_TS_2210_102813



Personal Identity Verification (PIV) Enablement Solutions

pivCLASS® Solutions



Affordable Personal Identity Verification (PIV) Enablement Solutions from a Single, Trusted Supplier

COMPLETE SOLUTION FOR PIV ENABLEMENT

HID's pivCLASS® Solutions portfolio is an extensive product family that makes it easy for U.S. Federal Government, government contractors, ports, other facilities to comply with security regulations and to use their Personal Identity Verification (PIV) and other smart cards for physical access control, resulting in compliance, interoperability and high security.

FIPS 201 COMPLIANCE WITHOUT THE NEED TO "RIP AND REPLACE"

The modular approach provides government agencies the ability to use their PIV identity cards for strong public key infrastructure (PKI)-based validation for physical access control. The solution enables this functionality without the need to "rip and replace" existing physical access control systems (PACS), reducing costs, and removing complexities to make it easy and affordable to acquire, install and maintain compliant physical access control systems.

The HID pivCLASS solution accomplishes this in part by communicating with an agency's PACS and external trust authority PKIs to deliver functionality specified by National Institute of Standards and Technology (NIST) Federal Information Processing Standards Publication 201 (FIPS 201).

AN INTEGRATED SOLUTION FROM A SINGLE PROVIDER

Delivering fully tested and validated turnkey government solutions from a single, trusted source, that authenticate PIV credentials across the full range of assurance levels as defined by the federal government's Special Publication 800-116 (SP 800-116) and supports the Transportation Worker Identification Credential (TWIC) Reader Specification.

Offering strong authentication solutions, the portfolio includes pivCLASS Registration Engine, pivCLASS Certificate Manager, pivCLASS Reader Services, pivCLASS Authentication Module (PAM) and a complete line of PIV readers, enabling agencies to quickly and easily acquire all of the necessary components for their PIV-enabled access control systems.



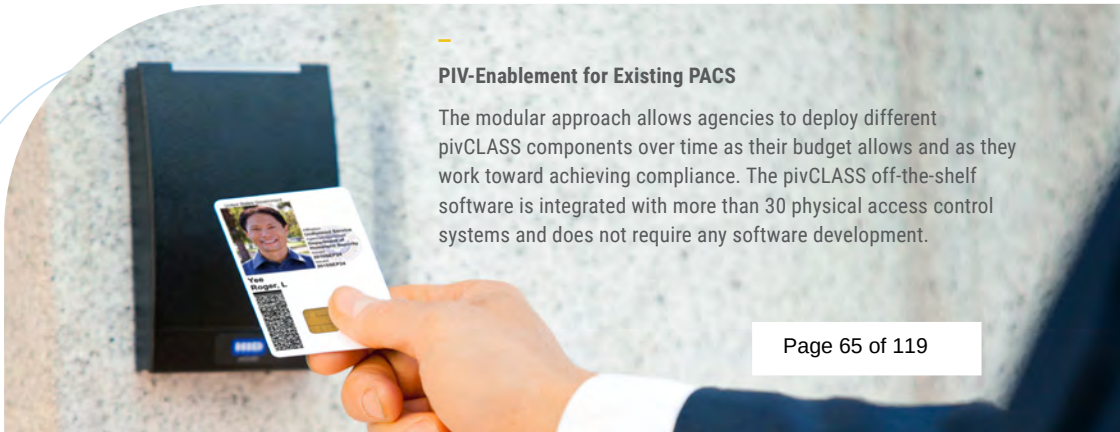


Achieving Compliance Made Simple

HOW IT WORKS

Working together to deliver strong authentication at the door and during the initial cardholder registration, the pivClass solustion is designed to recognize the originally registered card and the cardholder is the person he/she claims to be. It also verifies the card has not been forged, altered, cloned, lost, stolen, shared, revoked or expired. HID pivCLASS solutions accomplishes this by performing the following functions:

- Automatically registers cards into the PACS database with no manual data entry.
- Executes full path discovery and certificate revocation checking using CRL, OCSP or SCVP.
- Periodically retrieves card revocation status from issuing certificate authorities.
- Caches validation data and offers degraded mode settings to allow continued validation when access to card issuer validation data (e.g., CRL) is unavailable.
- Validates cardholder credentials both during a card's registration into local access control software and at the door.
- Validates visiting cardholder credentials from other agencies (i.e., provides certificate path discovery and validation essential for interoperability across government agencies and any other entities cross-certified with the Federal Bridge).
- Provides centralized configuration and management of pivCLASS products via a graphical user interface.
- Allows configuration of trusted card issuers, authentication modes, Wiegand output format and more.
- Provides centralized distribution of firmware updates to pivCLASS Authentication Modules.
- Collects detailed log activity for display and export.



PIV-Enablement for Existing PACS

The modular approach allows agencies to deploy different pivCLASS components over time as their budget allows and as they work toward achieving compliance. The pivCLASS off-the-shelf software is integrated with more than 30 physical access control systems and does not require any software development.



HID PIV-enabled Readers Meet Any Authentication Mode and Any Assurance Level

HID PIV-ENABLED READERS

The pivCLASS Solution suite includes a broad selection of readers for agencies to meet any security level and the NIST SP 800-116 guidelines. HID PIV-enabled readers work with the pivCLASS Authentication Module™ or pivCLASS Embedded Authentication, to meet requirements for:

- Any assurance level: controlled, limited or exclusion.
- Any authentication mode: CHUID, CAK, PIV + PIN, or PIV + PIN + BIO; also, FASC-N reads for non-SP800-116 "unrestricted" areas, and the additional TWIC authentication modes, CHUID + BIO and CAK + BIO.
- Nearly any card type, contact or contactless, including PIV, PIV-I, CIV (a.k.a., PIV-C), TWIC, FRAC and CAC.

Additionally, the HID PIV-enabled readers provide fully functional compatibility with existing Seos, iCLASS® and HID Prox cards, easing the transition to PKI-based credentials and supporting temporary or visitor use.

The readers also support bi-directional communication to the PAM and panels running pivCLASS Embedded Authentication.

ASSURANCE LEVELS AND AUTHENTICATION MODES

Most Federal facilities have likely completed a risk assessment that designated each door and portal as requiring an unrestricted, controlled, limited or exclusion assurance level. NIST SP 800-116 specifies which authentication modes are required for which assurance levels. For instance, a door leading to a high security area will require a more advanced reader (in order to perform additional identity checks, such as biometric fingerprint match) than a lower security door.

Figure 1 illustrates the different security levels per NIST SP 800-116-1 and the attack vectors addressed by the pivCLASS solution.



Meet Any Assurance Level

			Secures against cards that are...				
Security Area (per NIST SP800-116 & Risk Assessment)	**Authentication Factors**	**Authentication Models**	**Revoked**	**Counterfeit or Altered**	**Copied or Cloned**	**Lost or Stolen**	**Shared**
Unrestricted	None	FASC-N	•				
Unrestricted	1	CHUID + VIS	•	•			
Controlled	1	CAK	•	•	•		
Limited	2	PIV + PIN	•	•	•	•	
Exclusion	3	PIV + PIN + BIO	•	•	•	•	•

BIO: Biometric; CAK: Card Authentication Key; CHUID: Cardholder Unique Identifier; FASC-N: Federal Agency Smart Credential Number; PIN: Personal Identification Number; PIV: Personal Identity Verification (PIV) Authentication Key; VIS: Visual

Figure 1



pivCLASS Authentication Module or pivCLASS Embedded Authentication

PIVCLASS® AUTHENTICATION MODULE

The pivCLASS Authentication Module (PAM) is an embedded computer packaged in a small form factor with pre-installed, updatable firmware. The PAM is installed between a supporting reader (such as an HID PIV-enabled reader) and the existing access control panel, and provides configurable Wiegand output to the controller.

This enables the system to be upgraded to support PIV cards for access control; the access control panels do not have to be replaced or even reconfigured, and the head-end access control software does not need to be enhanced with new features. Similarly, much of your existing wiring may be reusable.

Readers pass card information to the PAM, which performs the required authentication to validate (or invalidate) the cardholder credential. If validated, the badge ID is then passed to the existing access control panel for the access authorization decision.

Since the PAM regularly receives and caches cardholder credential status from the pivCLASS Certificate Manager, the result is nearly real-time PKI-based high security at the door.

In its role, the PAM does the "heavy lifting" of cryptographic operations for PIV cardholder credential authentication each time a card is presented to a reader. Each PAM can process up to two readers at one or two doors.

INCREASED OVERALL SYSTEM SECURITY

The pivCLASS solution is architected for the security-conscious yet cost-sensitive security administrator. The pivCLASS Authentication Module typically sits inside the secure perimeter, where it – not the reader – performs the critical cryptographic functions. This architecture locates the PKI operations within the secure perimeter rather than in an expensive, PKI-capable reader placed on the insecure/attack side of the door.

pivCLASS Embedded Authentication

pivCLASS Embedded Authentication takes the functionality of the pivCLASS Authentication Module and embeds it into the physical access control panel for a more integrated approach and supports all of the same authentication modes as the PAM.



pivCLASS Software Communicates with Trust Authorities

PIVCLASS REGISTRATION ENGINE AND PIVCLASS CERTIFICATE MANAGER

The pivCLASS Registration Engine is a software module that reads, validates, authenticates and registers credentials with a PACS automatically without manual data entry. The software validates multiple card types, including PIV, PIV-I, CIV (PIV-C), CAC NG, CAC EP, TWIC and FRAC.

The pivCLASS Certificate Manager is a software module that, after credential registration, regularly communicates with external trust authorities to check the status of cached certificates. Upon determining a status change, the software can suspend any card associated with a revoked certificate and/or send an email to a distribution list for notification. pivCLASS Certificate Manager also sends that information via Ethernet (AES256 encryption optional) to the pivCLASS Authentication Modules (PAMs) for enforcement.

pivCLASS Reader Services sends mode updates, TWIC Privacy Keys (TPKs), and other information to PAMs and supports multiple authentication modes including FASC-N, CHUID, CAK, PIV + PIN, CHUID + BIO, CAK + BIO, and PIV + PIN + BIO.

Typically, an agency will install the pivCLASS Registration Engine on each workstation where credential registration is to occur. pivCLASS Certificate Manager software is required for ongoing revalidation of certificates after registration and is usually placed on the PACS server, although alternative configurations can be implemented to meet specific needs.

The communication flow between pivCLASS elements and other parts of the architecture is detailed in Figure 2.

GENUINE HID®

With Genuine HID, the U.S. Federal Government, government contractors and other facilities benefit from the broadest product line of trusted, fully interoperable secure identity solutions in the market. Genuine HID solutions are designed and built in IS0 9001 certified facilities; include worldwide agency certifications; and are backed by global product warranties. Supported by industryleading expertise and the strongest delivery and response platform available, Genuine HID solutions reinforce the long-standing trust that when customers purchase from HID, they are investing with absolute confidence.

pivCLASS® Software Licensed Options:

- pivCLASS Registration Engine: reads, validates, authenticates and automatically registers valid credentials into PACS database without any manual data entry.
- pivCLASS Certificate Manager: periodically revalidates the status of digital certificates and updates the PACS with any change in status; can automatically suspend any card associated with a revoked certificate; can send an email to a distribution list for notification.
- pivCLASS Reader Services: configures and manages PIV-enabled readers via the PAM.

pivClass® System Diagram

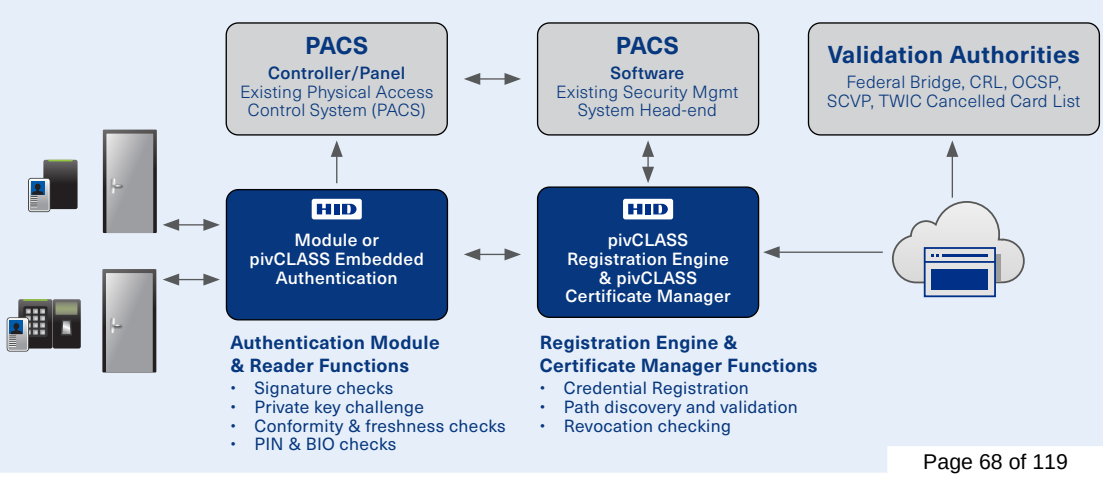


Figure 2



hidglobal.com

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Europe, Middle East, Africa: +353 91 506 900
Asia Pacific: +852 3160 9800
Latin America: +52 55 9171-1108

For more global phone numbers click here

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Electric Strike Overview

Electric Strikes for every type of lockset application

Experience a safer and more open world



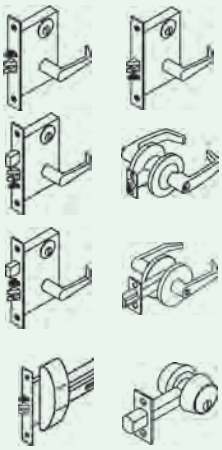








Works with Cylindrical & Mortise Locksets with or without a 1" Deadbolt



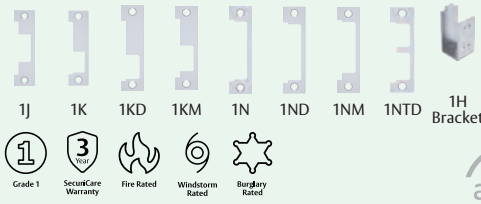
Compatible with all manufacturers

ES100-16S

Aperio® wireless technology offers flexible configuration options and dynamic adjustability without the need to run wires

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC DC continuous duty | AC intermittent duty only



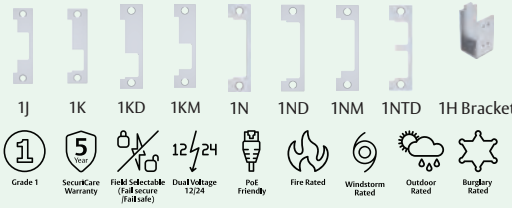


1600CS

Dynamic, low profile design with integrated adjustability and field configurable options

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC DC continuous duty | AC intermittent duty only



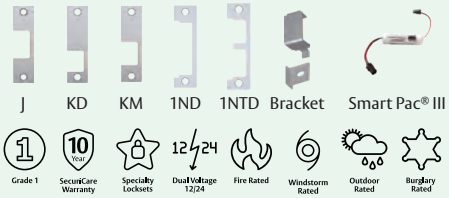


1006CS

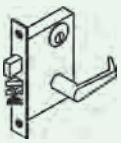
Strongest design with SMART Pac® III in-line power controller

450 mA at 12 VDC | 250 mA at 24 VDC





Works with Cylindrical & Mortise Locksets for an ANSI 4-7/8" Strike Plate with a 1" Deadbolt







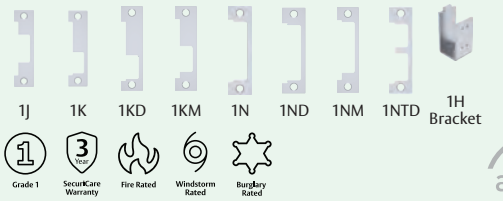
Compatible with all manufacturers

ES100-16D

Aperio® wireless technology offers flexible configuration options and dynamic adjustability without the need to run wires

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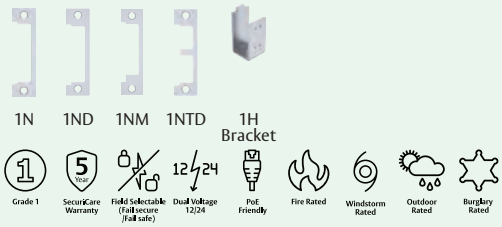


1600CDB

Dynamic, low profile design with integrated adjustability and field configurable options for deadbolt applications

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC DC continuous duty | AC intermittent duty only



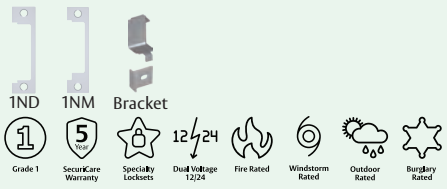


1006CDB

Strongest design for deadbolt applications

450 mA at 12 VDC | 250 mA at 24 VDC



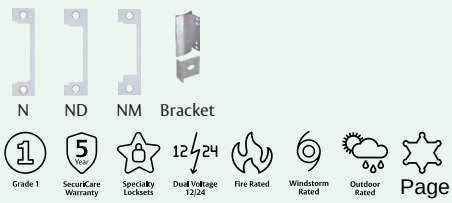


1006CAS

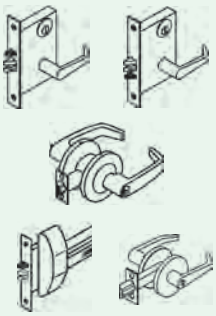
Strongest design for deadbolt recapture applications

450 mA at 12 VDC | 250 mA at 24 VDC





Works with Cylindrical & Mortise Locksets for an ANSI 4-7/8" Strike Plate with a 3/4" Latchbolt



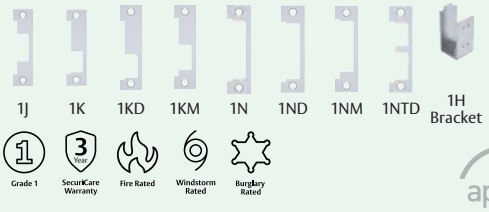
Compatible with all manufacturers

ES100-16L

Aperio® wireless technology offers flexible configuration options and dynamic adjustability without the need to run wires

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only





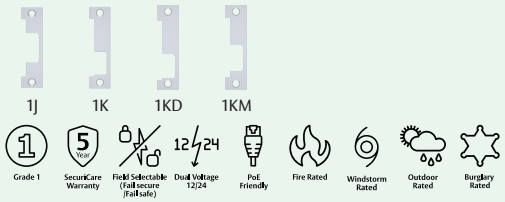
aperio™

1600CLB

Dynamic, low profile design with integrated adjustability and field configurable options for latchbolt applications

240 mAat 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only





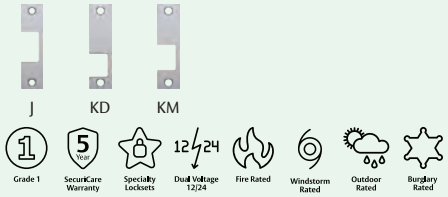
Compatible with all manufacturers

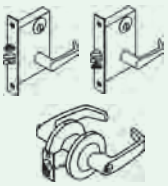
1006CLB

Strongest design for latchbolt applications

450 mA at 12 VDC | 250 mA at 24 VDC
DC continuous duty | AC intermittent duty only







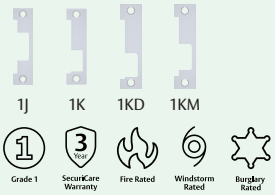
Compatible with all manufacturers

ES100-15L

Aperio® wireless technology offers flexible configuration options and dynamic adjustability without the need to run wires

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only



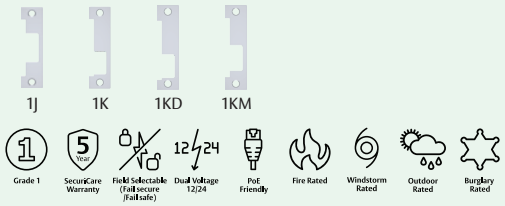


1500C

Heavy duty low profile design for latchbolt applications

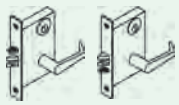
240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only







Compatible with most manufacturers



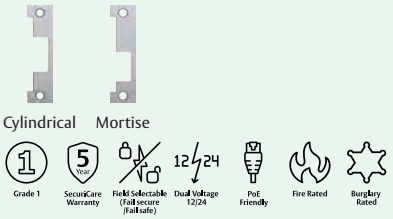
*See installation instructions for Schlage and ASSA ABLOY ACCENTRA™**

4500C

Low profile design for installation in 2" UL 10C fire-rated frames with 1/2" drywall penetration

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only





** Formerly Yale Commercial*

Works with Cylindrical Locksets up to a 5/8" Throw Latchbolt

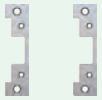
5000C | 5300C

NEW

Low profile, compact design for easy installation

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only





Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | 12/24 Dual Voltage 12/24 | PoE Friendly | Outdoor Rated | Burglary Rated | Fire Rated (5300C only)

7000C

Designed to address pre-loaded doors, and with in-frame horizontal adjustability

450 mA at 12 VDC | 250 mA at 24 VDC

Also compatible with certain rim exit devices





Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | 12/24 Dual Voltage 12/24 | Preload | Burglary Rated

8000C | 8300C

Concealed design for easy installation with no cutting on the frame required and with vertical alignment adjustability

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only





Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | 12/24 Dual Voltage 12/24 | PoE Friendly | Outdoor Rated | Burglary Rated | Fire Rated (5300C only)



Compatible with most manufacturers

Folger Adam 310-2

3 hour fire-rated industrial grade electric strike designed for extreme heavy duty applications

510 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Fire Rated | Burglary Rated

Folger Adam 712

For use with 1/2" to 5/8" latchbolts on hollow metal frame applications

290 mA at 12 VDC | 150 mA at 24 VDC
Also available as a 3/4" latchbolt variant



Grade 1 | 5 Year SecuriCare Warranty | Fire Rated | Burglary Rated

Folger Adam 732

For use with 1/2" to 5/8" throw latchbolts on wood frame applications

290 mA at 12 VDC | 150 mA at 24 VDC

Also available as a 3/4" latchbolt variant



Grade 1 | 5 Year SecuriCare Warranty | Fire Rated | Burglary Rated

Works with Tubular Exit Devices

9100

Low-profile, retro-mounted electric strike designed to work with tubular, vertical rod exit devices on single glass doors.

240 mA at 12 VDC | 120 mA at 24 VDC
DC continuous duty | AC intermittent duty only



NEW

Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | 12/24 Dual Voltage 12/24 | Outdoor Rated | Burglary Rated | Tubular Exit Device

9200

Low-profile, retro-mounted electric strike designed to work with tubular, vertical rod exit devices on double glass doors.

480 mA at 12 VDC | 240 mA at 24 VDC
DC continuous duty | AC intermittent duty only



NEW

Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | 12/24 Dual Voltage 12/24

Works with Rim Exit Devices up to 1/2" Throw Latchbolt



Compatible with most manufacturers

9400

Slim-line surface mounted design for easy installation

450 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | Dual Voltage 12/24 | Outdoor Rated | Burglary Rated

Works with Rim Exit Devices up to 3/4" Pullman Latchbolt



Compatible with most manufacturers

7000

Designed to address pre-load doors, and with in-frame horizontal adjustability

The 7000 works with Rim Exit Devices only when paired with 783S, 786S, 789S Faceplates.

450 mA at 12 VDC | 250 mA at 24 VDC



5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | Dual Voltage 12/24 | Preload | Burglary Rated

Shown with 789S faceplate

9500

Fire-rated surface mounted design for easy installation

450 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | Dual Voltage 12/24 | Fire Rated | Outdoor Rated | Burglary Rated

9600

Windstorm resistant, surface mounted design for easy installation

450 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | Dual Voltage 12/24 | Windstorm Rated | Outdoor Rated | Burglary Rated

Folger Adam 310-4

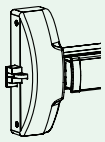
Fire-rated surface industrial grade electric strike designed for extreme heavy duty applications

510 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Fire Rated | Burglary Rated

Works with Rim Exit Devices with SquareBolts



Corbin Russwin SecureBolt® and ASSA ABLOY ACCENTRA™ SquareBolt®*

9700

Windstorm resistant and fire-rated, surface mounted design for SquareBolt applications

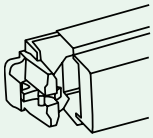
450 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | Dual Voltage 12/24 | Fire Rated | Windstorm Rated | Outdoor Rated | Burglary Rated

** Formerly Yale Commercial*

Works with Rim Exit Devices with Adams Rite® Starwheel or Interlocking Latchbolt



9800

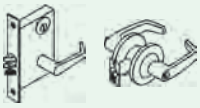
Outdoor-rated, surface mounted design for Adams Rite Starwheel and Interlocking Rim Exit Devices

450 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | Dual Voltage 12/24 | Outdoor Rated | Burglary Rated

Works with Cylindrical & Mortise Locksets without a Deadbolt, 1/2", 5/8", 3/4" Throw Latchbolt



Single door, fail secure only. Hollow metal frame applications

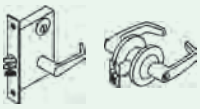
Folger Adam 742-75

Fire-rated industrial grade electric strike designed for heavy duty applications

290 mA at 12 VDC | 150 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Fire Rated | Burglary Rated



Single and double door, fail secure only

Folger Adam 310-1-(X)

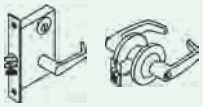
3 hour fire rated, industrial grade, designed for extreme heavy duty applications

510 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Fire Rated | Burglary Rated | Specialty Locksets

Works with Cylindrical & Mortise Locksets without a Deadbolt 3/4" Throw Latchbolt



Compatible with most manufacturers

Folger Adam 310-2-3/4

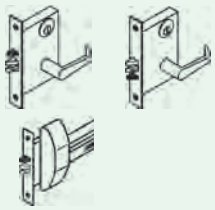
Fire-rated industrial grade electric strike designed for heavy duty applications

510 mA at 12 VDC | 250 mA at 24 VDC



Grade 1 | 5 Year SecuriCare Warranty | Fire Rated | Burglary Rated

Works with Mortise Locksets without a Deadbolt up to 3/4" Throw Latchbolt



8500

Concealed design for easy installation with minimal modification to the frame

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only



Grade 1 | 5 Year SecuriCare Warranty | Field Selectable (Fail secure / Fail safe) | 12/24 Auto Sensing Dual Voltage 12/24 | PoE Friendly | Outdoor Rated | Burglary Rated | Fire Rated

< Shown with 852L Faceplate

Works with Cylindrical Locksets up to a 3/4" Throw Latchbolt



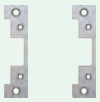
Compatible with most manufacturers

5200C

In-frame horizontal adjustable design

240 mA at 12 VDC/VAC | 120 mA at 24 VDC/VAC
DC continuous duty | AC intermittent duty only





501 501A

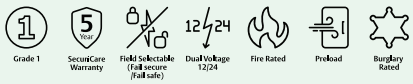


7501

Designed for fire-rated applications with pre-load conditions

450 mA at 12 VDC | 250 mA at 24 VDC





Accessories



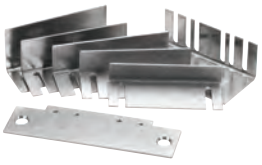
2005M3 SMART Pac® III

In-line power controller able to receive input voltages from 12 – 32 VAC or DC. Built-in bridge rectifier. Reduces initial voltage by 25% to extend the life of the electric strike Includes built-in resettable fuse, MOV, voltage regulation and input voltage level indicating and unit status. For use with 1006, input voltage must be DC.



9000-MTK Metal Template Kit

For installing the 9400, 9500, 9600, 9700 and 9800 electric strikes



HESCUT-MTK Metal Template Kit

For installing the ES100, 1006, 1500, 1600, 4500, 5000, 5200, 5300, 7000 and 7501 electric strikes (4-7/8" ANSI jamb preparation only)



2004M Electrolynx® Adapter

Adapter between existing electric strikes and ElectroLynx® connectors











The ASSA ABLOY Group is the global leader in access solutions. Every day we help people feel safe, secure and experience a more open world.

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Patent pending and/or patent www.assaabloydss.com/patents

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BEST
dormakaba Group



9K Series Cylindrical Lock
by BEST

The premium lock for quality, performance, and security.

Building on BEST's legacy of innovation, the 9K series cylindrical lock combines top-quality materials and exceptional craftsmanship into a tough, dependable, long-lasting security solution. We designed the 9K series to be low maintenance, easy to install, durable, and secure. And our range of available styles and finishes ensures that the 9K delivers design aesthetics to match a wide variety of applications.

Designed to deliver exceptional results in more applications.



When you need simple, safe and dependable protection, there's no better choice than the 9K Series from BEST. The 9K is one of the toughest heavy-duty cylindrical locks on the market.

- **Exceeds Grade 1 security** by over 50 times – tested to over 50 million activations.
- **Pre-assembled heavy-duty chassis** for quick and easy installation
- **Hardened steel thru-bolt studs** to deliver maximum lever torque resistance
- **Cast construction lock hub,** designed to protect the lock's critical components from every day use and abuse
- **Intruder function option** to secure classroom doors quickly from the inside during an emergency
- **Low profile rose design** offers a simple, sleek aesthetic style

The BEST 9K is dependable and delivers superior security in countless environments. And with easy core interchangeability and a broad selection of functions, styles and finishes, is ideal for retrofit and new construction alike.

BEST 9K sets the standard for premium-quality, heavy-duty lock solutions.

Superior materials, design, and strength.
We designed the 9K series to deliver exceptional results in more applications. With durability that exceeds ANSI Grade 1 requirements and options to accommodate a host of potential requirements, the BEST 9K series ensures premium performance.

9K Series Cylindrical Lock Specifications

Certifications	ANSI/BHMA A156.2 Series—Grade 1 ANSI A117.1 Accessibility Code (ADA compliant) UL/cUL listed (3 hour) for single or double swinging doors Florida Building Code and Miami Dade County (WS option) compliant for hurricane resistance	California State Fire Marshal (California Title 24) compliant California State Fire Marshal compliant for fire door This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code BAA & TAA compliant Illinois Accessibility Standard compliant
Product Specifications	Latch: solid stainless steel 9/16" throw; front 2 1/4" and 1 1/8" beveled Lever handles: plated zinc alloy Trim: brass or bronze Strike: ANSI 2 3/4" standard; ANSI S3 4 7/8", ANSI S3 7/8" flat, and 7/8" flat strike (STK) available	Chassis: zinc alloy and corrosion-treated steel; 2 1/16" diameter Door thickness: available for 1 3/4" or 2 1/4" doors; spacers available for 1 3/8" door Door prep: 2 1/8" diameter cross bore Backset: 2 3/4" standard; 3 3/4" and 5" available
Keying	6-pin non-IC brass cylinder 6- or 7-pin SFIC option available **Keyway options:** LFIC: SCHRC-Schlage, Non-IC: COR-Corbin-Russwin, MED-Medeco, SAR-Sargent, SCH-Schlage, YAL-Yale	
Lock Functions	**Single Keyed:** Entrance – AB (F109) Storeroom – D (F86) Service Station – E (F92) Classroom – R (F84) Dormitory – T (F90) Special – A, B, DZ, EA, RZ, XD, XR, YD, YR UA Hotel (SPN-standard) – H, HJ (F93) **Double Keyed:** Corridor – C (F88) Storeroom – G (F91) Intruder – IN with interior indicator rose standard (F110) Communicating – S (F80) Institutional – W Special – DR, RD **Keyless:** Passage – N (F75), NX (F89) Exit – Y Privacy – L (F76) Special – LL, M, Q, Z Single dummy trim – 1DT Double dummy trim – 2DT	
All Finishes	605: Bright Brass 606: Satin Brass 611: Bright Bronze 612: Satin Bronze 613: Oil-rubbed Bronze 618: Bright Nickel 619: Satin Nickel	622: Flat Black 625: Bright Chrome 626: Satin Chrome 690: Dark Bronze Coated UltraShield™ antimicrobial coating available
Warranties	Ten-year mechanical Three-year finish (613 carries no finish warranty)	

Features

BEST 9K

- **Proven reliability.** We tested BEST 9K locks to over 50 million cycles, proving that the series exceeds ANSI Grade 1 requirements by over fifty times. Design features like a seamless, one piece hardened steel alloy outside sleeve protect functionality and ensure more reliable performance throughout the product's lifespan.
- **Long-term durability.** Our low maintenance design with solid zinc hubs protect critical components from daily wear and tear for longer product life and lower overall cost of ownership.
- **Easy retrofit.** The 9K is easy to retrofit to other door preps and competitor key systems.
- **Quick and easy installation.** The 9K's pre-assembled design and simple instructions make installing the lock intuitive. Rose locking pin allows for quick door thickness adjustment.
- **Simple to rekey.** With easy core interchangeability, BEST 9K locks make rekeying simple.
- **Superior security.** Manufactured with top-quality materials and designed for ease of use and attack resistance, the 9K series delivers security you can trust. The 9K's vandal resistant lever includes a lost motion design allowing the lever to move 45°-60° without engaging the retractor assembly.
- **Premium aesthetics.** A low profile rose design and wide variety of trims and finishes give the BEST 9K a streamlined look compatible with modern architectural trends and appropriate for any design aesthetic.

Featured Finishes

605 Bright Brass


606 Satin Brass


612 Satin Bronze


613 Oil-rubbed Bronze

625 Bright Chrome


626 Satin Chrome


690: Dark Bronze Coated

BA-0250 12/21

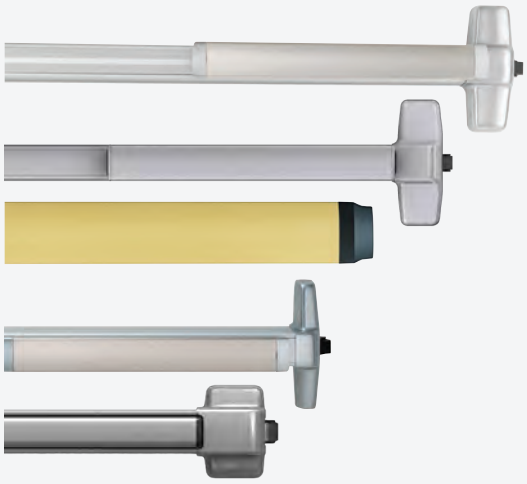
For questions about ordering and to be sure you get the right configuration for your needs, contact your BEST dormakaba sales representative.
6161 East 75th Street, Indianapolis, IN 46250 USA | **855-365-2407** | **bestaccess.com**

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VON DUPRIN®

Quiet Electric Latch Retraction-QEL

Featuring 98/99, 94/95, 78/75, 33A/35A & 22 Series Exit Devices



Overview

Quiet electric latch retraction (QEL) provides electronic control of an exit device for environments where limited operational noise is desired. The QEL option is Von Duprin's solution of choice for hospitals, libraries, museums and theaters where ambient noise can be disruptive. It is available on all Von Duprin 98/99, 94/95, 78/75, 33A/35A, and 22 Series exit devices.

These devices always provide mechanical egress. The electrified latch retraction can also be activated by an access system or building automation system to unlatch the exit device momentarily. Often the QEL is used with a credential reader and access control system to unlock the door momentarily for authorized users.

The QEL can also be configured to electronically retract the latch for an extended period of time to allow free entry. This is a convenient alternative to mechanical dogging. If manual dogging is required, the hex dogging option is available, to order specify HD-QEL on non fire-rated devices. Special center case dogging is also available for 98/99 rim and vertical systems, specify SD-QEL.

If an active pushpad is required utilize the QEL-L option. This option will retract the latch bolt and maintain an active pushpad. In some applications an audible indication of pushpad retraction is desired. The QEL-B (B-buzzer) option is a feature that can be added or retrofitted to QEL devices that will send an audible notification of initial latchbolt retraction.

The QEL option is available on panic and fire rated devices. Because fire exit hardware must be self-latching, an automatic fire alarm system must be incorporated to drop power to fire rated QEL devices in case of fire.

Features & Benefits

- QEL option available on all 98/99, 94/95, 78/75, 33A/35A, and 22 Series exit devices
- Energy efficient motorized latch retraction utilizes standard 2 amp power supply, enabling longer wire runs from power source
- Quiet operation in both mechanical and electronic states
- Modular design allows for a simplified installation
- On-board installation and troubleshooting diagnostics built into device
- Auto adjust latch retraction – automatically adjusts latch throw and pull
- Pushbar is pulled in electronically for quieter operation when dogged
- Vandal resistant – detects and responds to events of attack and tampering

Specifications Compliance

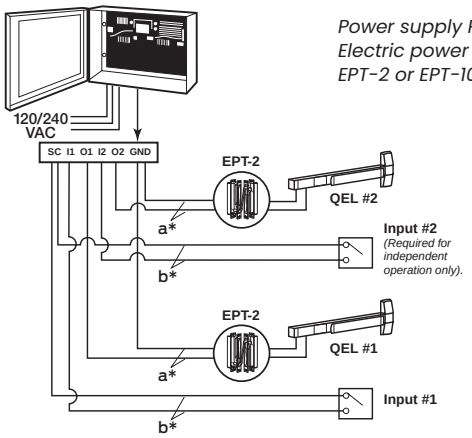
- Devices are BHMA Certified to ANSI/BHMA A156.3 (2001) Grade 1 for Exit Devices
- Devices are UL and cUL Listed as "Panic Hardware" (UL 305) and as "Fire Exit Hardware" (UL 10C)
- The QEL Conversion Kit is UL Classified under "Accessories for Single-Point Locks and Latches and Fire Exit Hardware" (UL 10C)

Electronic Specifications

QEL Electrical Load	
Voltage	24 VDC
Current	1.0 A Inrush (0.5 sec) 0.14 A Holding

QEL Wire Run Lengths	
Distance (one way)	Wire Gauge
Current	1.0 A Inrush (0.5 sec) 0.14 A Holding
200'	18 AWG
320'	16 AWG
500'	14 AWG
800'	12 AWG

QEL Wire Run Lengths



Power supply PS902-2RS
Electric power transfer EPT-2 or EPT-10

Accessories

The QEL has a low in rush current = 1.0 amps, so it can be used with standard Schlage power supplies. When powering multiple components, verify that the amperage requirements of all components combined does not exceed the power supply output rating, see table below for output ratings.

Schlage PS902	Schlage PS904	Schlage PS906
Up to 2 amps	Up to 4 amps	Up to 6 amps

How to Order

- **Standard** – Use prefix QEL, example QEL99L
- **Special Center Case Dogging** – Use prefix SD-QEL, example SD-QEL99L*
- **Hex Dogging** – Use prefix HD-QEL, example HD-QEL99L
- **Latchbolt Retraction Only** – Use suffix -L, example QEL-L
- **Audible Notification Conversion Kit (47856044)** – Use suffix -B (buzzer), example QEL-B. Note: Available only for retrofit on existing QEL devices.

* SD QEL is available for the 98/99 Series only.

941071-00

Electric Power Transfer (EPT)

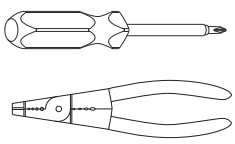
EPT2, EPT10, & EPT10C

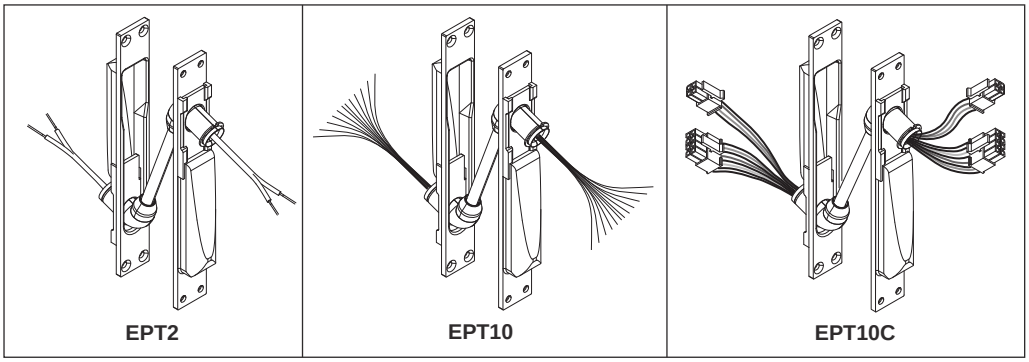
VON DUPRIN

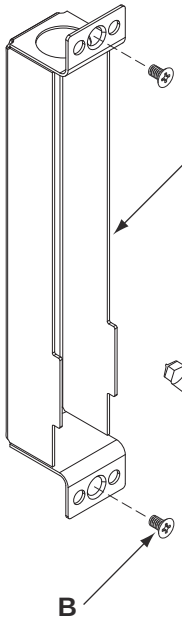
Installation Instructions

Read all Warnings Before Starting Installation!

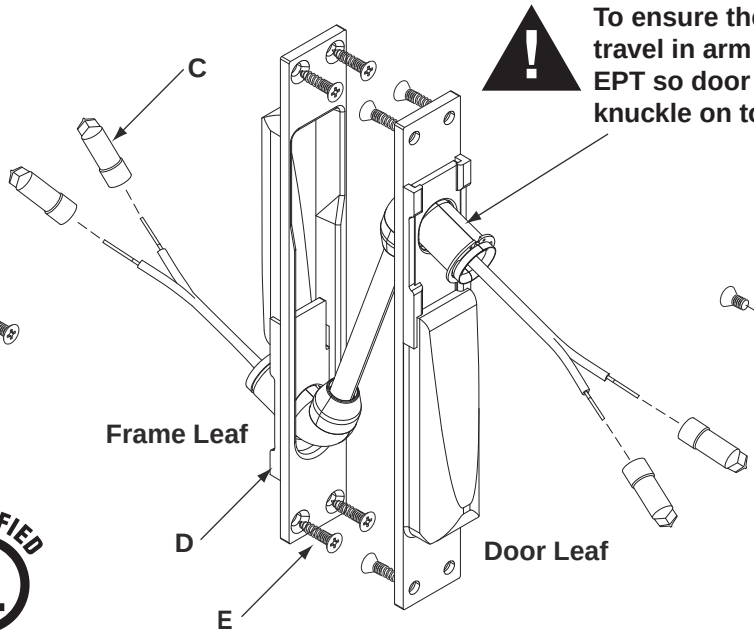
Tools for Install



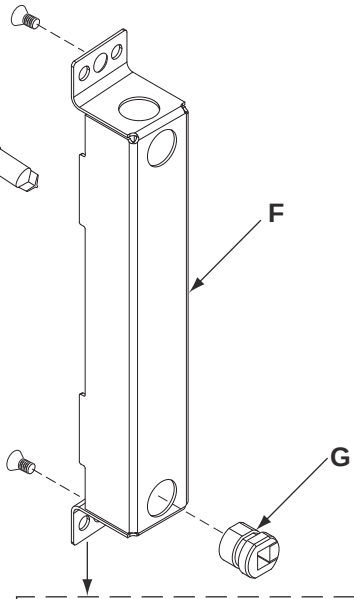


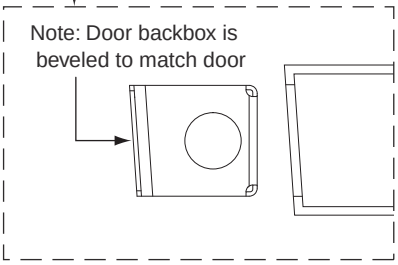


To ensure the maximum amount of travel in arm for cam lift hinges, install EPT so door side leaf is oriented with knuckle on top.



EPT2 Shown





A. Frame Backbox
B. Metal - #10-24 x 3/8” Flat Phillips Head Machine Screw (4)
   Wood - #10 x 3/4” Flat Phillips Head Wood Screw (4)
C. EPT2 - Wire Connectors 12 Gauge Yellow (4)
   EPT10 - Wire Connectors 18 Gauge Violet (20)
   EPT10C - Wire Connectors 18 Gauge Violet (20)
D. EPT Assembly
E. Metal - #10-24 x 3/4” Flat Phillips Head Machine Screw (8)
   Wood - #10 x 3/4” Flat Phillips Head Wood Screw (8)
F. Door Backbox
G. Strain Relief

ALLEGION

Customer Service

1-877-671-7011 www.allegion.com/us

General Information

An electric power transfer (EPT) provides a wiring path from the door to the frame.

These instructions assume that a factory-prepped door and frame are being used. If the door and frame have not been factory-prepped, see the included dimensioned template.

Before beginning the installation, review “Specifications” and “Warnings”.

Specifications

Applications

EPT **can** be used for:

- Door Thickness - 1-3/4” minimum
  Note: The following specifications apply to a 1-3/4” thick door.
- 0 - 180° opening with up to 5” wide butt hinges
- 0 - 180° opening with up to 3/4” offset pivots
- 0 - 130° opening with 5-1/2” wide butt hinges
- 0 - 110° opening with 6” wide butt hinges
- 0 - 90° opening with swing clear hinges

EPT **cannot** be used for:

- 1-1/2” offset pivots
- larger than 6” wide butt hinges
- pocket pivots
- swing clear hinges on a door that will open more than 90°
- center hung door (center pivot)
- balanced door

Electrical Ratings

EPT2

- Two 18AWG wires
- Max. Rating: 24VDC, 5A or 120VAC NEC Class 3

EPT10 & EPT10C

- Ten 24AWG wires
- Max Rating: 24VDC, 1A

Read all Warnings Before Starting Installation!

⚠ CAUTION Do not exceed rated specifications (shown above).

⚠ CAUTION EPT must be installed in accordance with these instructions by a qualified electrician.

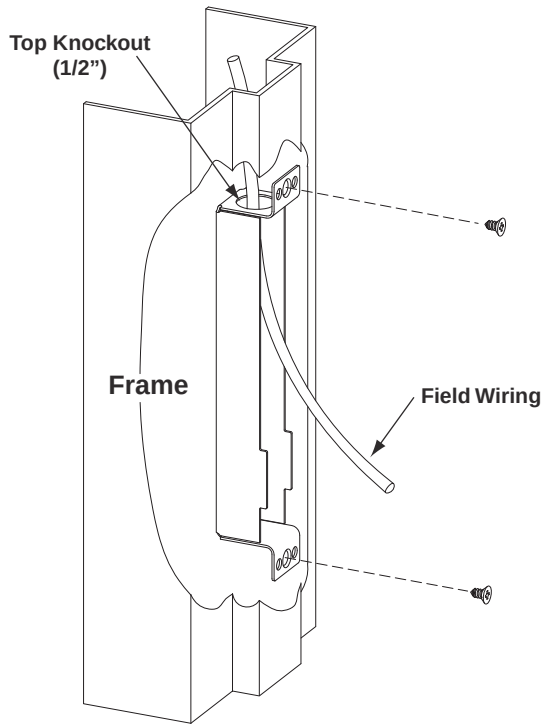
⚠ CAUTION Wiring must be in accordance with all local codes and regulations.

Installation

1 Use Template from Back Page to Verify Preparation

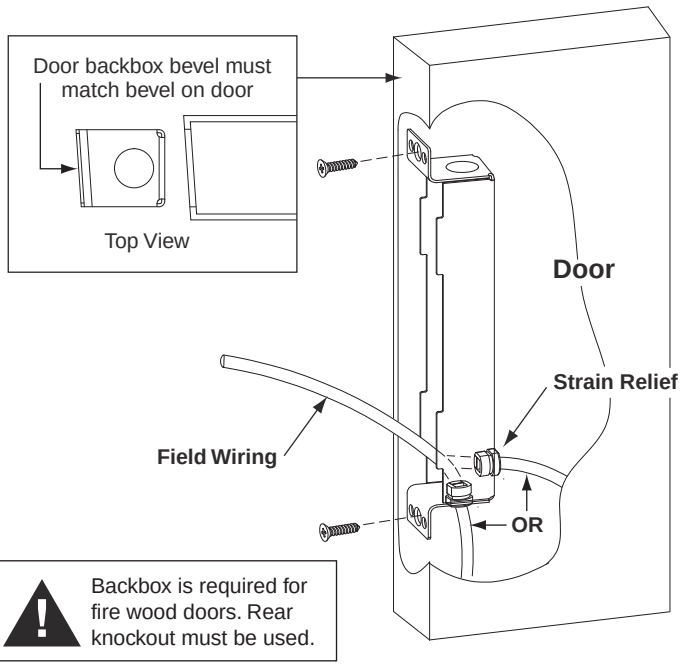
2 Mount Frame Backbox

A. Remove knockout from top
B. Install 1/2” conduit, if used
C. Pull 5” of field wiring through knockout



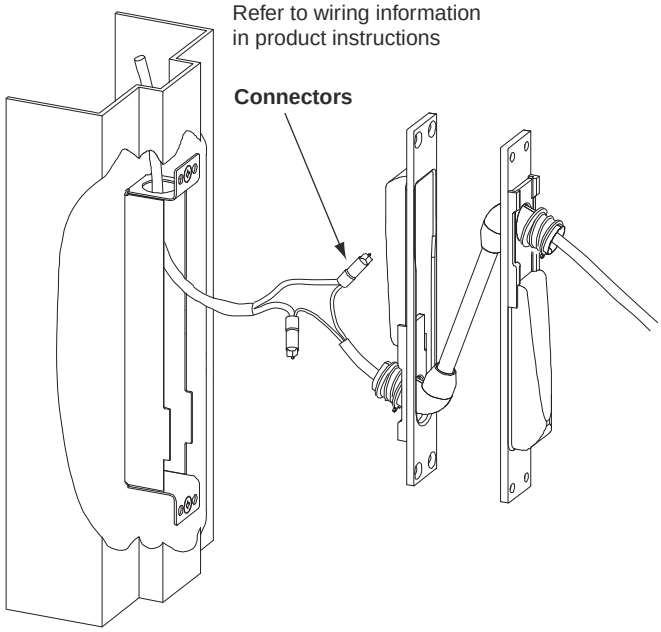
3 Mount Door Backbox

A. Ensure backbox bevel matches door bevel
B. Remove knockout: - from bottom for **metal** doors
- from back for **wood** doors
C. Pull 5” of field wiring through knockout
D. Install strain relief

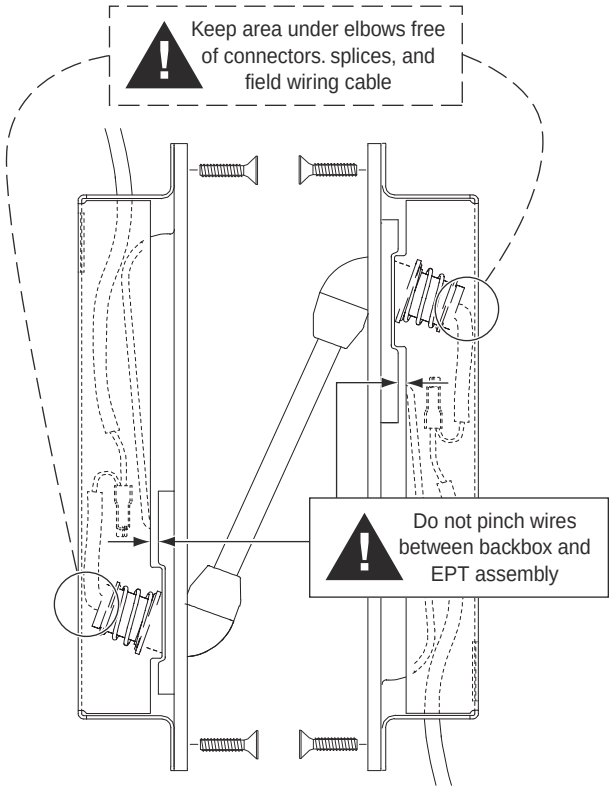


Backbox is required for fire wood doors. Rear knockout must be used.

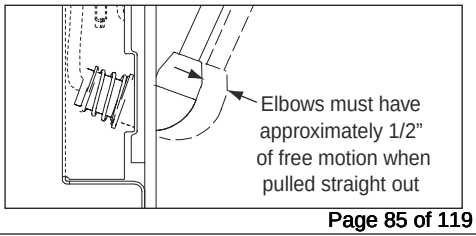
4 Connect Wires



5 Mount EPT Assembly

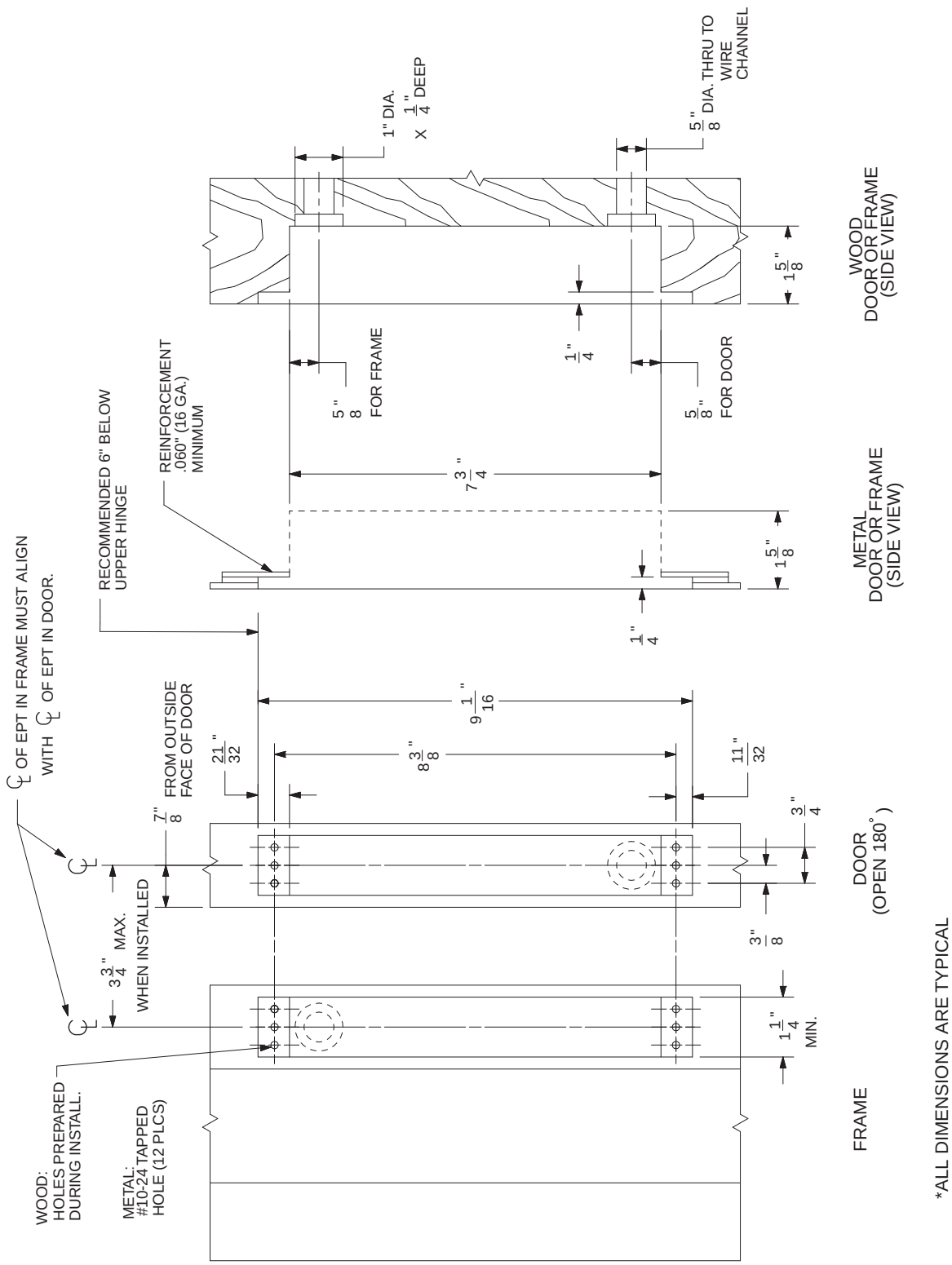


6 Verify that door opens and closes properly without binding and that electrical components function



Template

Note: This drawing is not to scale



PS902

2 amp power supply

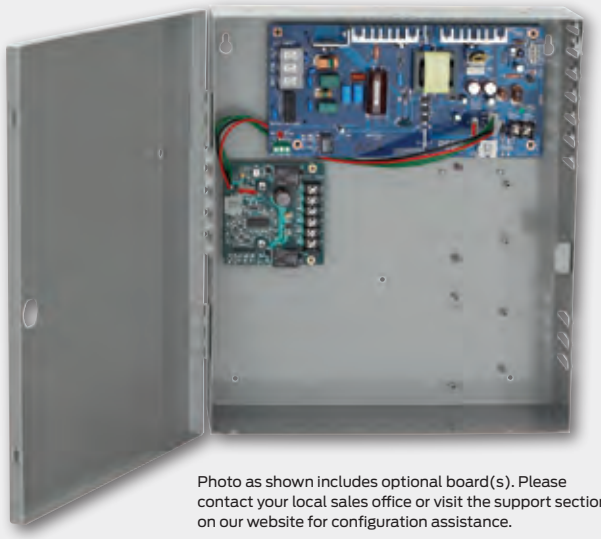


Photo as shown includes optional board(s). Please contact your local sales office or visit the support section on our website for configuration assistance.

Overview

The Schlage comprehensive line of power supplies and option boards was designed to address the changing needs of the access control market.

Installation is simplified by utilizing a flat mounting design and polarized locking connectors for option boards. This design eliminates the need for racks and side connectors. The flat mounting of the option boards also provides for easier access to the terminal blocks for connection of electrified devices (such as electrified strikes, electromagnetic locks, card readers, etc.).

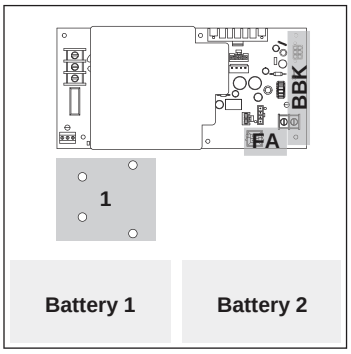
Common to the line of PS900 Series power supplies is a constant output rating at both 12v and 24v settings, universal 120 VAC to 240 VAC input, and polarized option board connectors. New fire alarm interface board mounting allows outputs to be configured as switched (power cut) or unswitched (power continues) when signal is provided.

Features and benefits

- 2A @ 12/24 VDC constant output, field selectable with jumper
- Provides low-voltage, Class 2, filtered and regulated power
- Universal 120-240 VAC, fused primary input
- Single polarized option board connector
- AC input and DC output monitoring circuit with LED indicators
- Externally visible AC input indicator with isolated SPDT contacts
- High-voltage protective cover for AC circuitry (not shown)
- Battery back-up board auto-selects voltage
- Optional Fire Alarm plug-in board available
- UL 294, ULC-S318, RoHS, and FCC Part 15 certified

Configuration options

Available option board, fire alarm and battery backup connection locations:



Exit device support

Von Duprin QEL	Up to 2[1]
Von Duprin EL	None
Falcon EL	None

1. Requires the use of one 900-2RS option board

PS902 power supply specifications

Specification	Description
Input voltage	120/240 VAC, 50/60 Hz, universal input
Output voltage	2A @ 12 or 24 VDC Field selectable with jumper Switching supply, 5% regulation, 240mVpp max ripple
Enclosure	Grey/baked enamel 14" x 12" x 4" (H x W x D) Eight ½" x ¾" knockouts NEMA Grade 1 Hinged cover with lock down screws
Operating temperature	32º - 120ºF (0º - 49ºC)
Certifications	ANSI/UL 294 ULC-S318 RoHS FCC Part 15 Class 2
Battery backup (install on main board)	900-BB: Battery backup board only 900-BBK: Battery backup kit (backup board plus battery pack)
Available option boards	900-FA: Plug-in fire alarm (install on main or option board) 900-2RS: 2 Relay option board capable of individual or sequential operation for single and pair door applications 900-4R: 4 Relay option board 900-4RL: 4 Relay option board with integrated logic and individual or sequential operation capability for controlling security interlocks, auto operators, and time delay function 900-8F: Fused, 8 zone option board 900-8P: PTC, 8 zone option board
AC primary fuse size	3.15A, 250v, 5 x 20mm
Battery fuse size	7.5A 32v ATO blade style
DC output protection	Overload protection - current limited foldback circuit
Indicators	LED indicators: - AC input (visible on outside of enclosure) - DC output Isolated SPDT contacts to monitor AC power status
Weight (power supply)	Approx. 9.0 lbs
Weight (each battery)	4.0 lbs
AC input termination	3 position terminal block with protective cover Wire capacity: 10 AWG max.
DC output termination	2 position terminal block Wire capacity: 12 AWG max.
Option board connectors	1
Fire alarm board connector	Yes
Keylock	Optional
Accessories	900-BAT: Backup battery pack

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About Allegion

Allegion (NYSE: ALLE) is a global pioneer in safety and security, with leading brands like CISA®, Interflex®, LCN®, Schlage® and Von Duprin®. Focusing on security around the door and adjacent areas, Allegion produces a range of solutions for homes, businesses, schools and other institutions. Allegion is a $2 billion company, with products sold in almost 130 countries. For more, visit **www.allegion.com.**

ALLEGION™

aptiQ ■ LCN ■ SCHLAGE ■ STEELCRAFT ■ VON DUPRIN

DS150i Series Request-to-exit Detectors

www.boschsecurity.com

BOSCH
Invented for life



- Single or double door use
- Wall or ceiling mountable
- Internal vertical pointability
- Wrap-around coverage pattern
- Selectable relay trigger mode

The DS150i Series consists of the DS150i Detector (light gray) and the DS151i Detector (black). They are specifically designed for Request-to-exit (REX) applications. The DS150i and DS151i detect motion in their coverage area and signal an access control system or door control device.

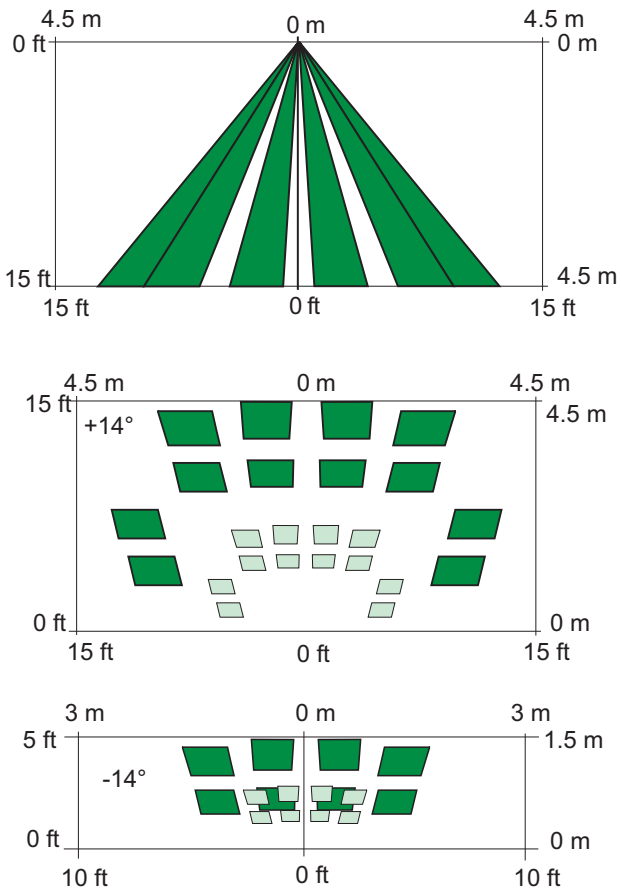
Functions

Test Features
Externally visible activation LED.

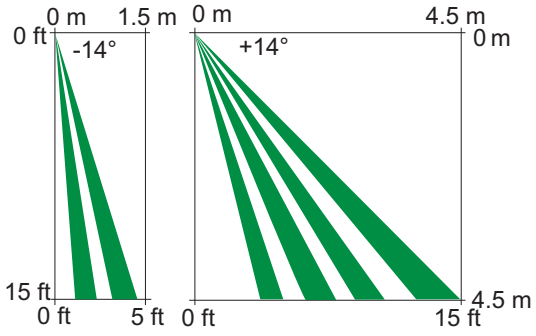
Certifications and approvals

Region	Regulatory compliance/quality marks	
Australia	RCM	[DS150i]
Europe	CE	EMC, LVD, RoHS [DS150i DS151i]
Russia	GOST	TC N RU Д-NL.MH09.B.00334 EAC
USA	UL	ALVY: Access Control Systems Units (UL294) [DS150i, DS151i]

Installation/configuration notes



Front View and Top Views
A front view of the DS150i and DS151i coverage, as well as top views of the coverage pattern on the floor. The typical coverage measurements are 2.4 m x 3 m (8 ft x 10 ft).



Side View
A side view of the DS150i and DS151i coverage pattern.

Technical specifications

Electrical

Current Draw:	26 mA at 12 VDC
Voltage:	12 VAC or VDC; 24 VAC or VDC

Mechanical

Alarm Output:	Two Form C relay contacts
Indicators:	One activation LED
Relay Latch Time:	Adjustable to 60 sec
Enclosure Dimensions:	3.8 cm x 15.9 cm x 3.8 cm (1.5 in. x 6.25 in. x 1.5 in.)
Enclosure Material:	High impact ABS plastic enclosure
Power Loss Default Mode:	Programmable fail-safe or fail-secure modes.
Timer Mode:	Programmable reset (accumulative) or non-reset (counting) mode.
Mounting Location:	Surface mount on wall or ceiling

Environmental

Operating Temperature:	-29°C to +49°C (-20°F to +120°F)
Radio Frequency Interference (RFI) Immunity:	No alarm or setup on critical frequencies in the range from 26 MHz to 1000 MHz at 50 V/m.

Ordering information

DS150I Request-to-exit sensor
For use in Request-to-EXit (REX) applications. Provides PIR, 2.4 m x 3 m (8 ft x 10 ft) coverage.
Order number **DS150I**

EWE-DETCTR-IW 12mths wrty ext detector general
12 months warranty extension
Order number **EWE-DETCTR-IW**

DS151I Request-to-exit sensor, black
Black enclosure. For use in Request-to-EXit (REX) applications. Provides PIR, 2.4 m x 3 m (8 ft x 10 ft) coverage.
Order number **DS151I**

EWE-DETCTR-IW 12mths wrty ext detector general
12 months warranty extension
Order number **EWE-DETCTR-IW**

Accessories

TP160 Trim plate for DS150 and DS160
A light gray trim plate used when mounting the detector over a standard single-gang box.
Order number **TP160**

TP161 Trim plate for DS151 and DS161, black
A black trim plate used when mounting the sensor over a standard single-gang box.
Order number **TP161**

Represented by:

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5600 JB Eindhoven, The Netherlands
Phone: + 31 40 2577 284
emea.securitysystems@bosch.com
emea.boschsecurity.com

Germany:
Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
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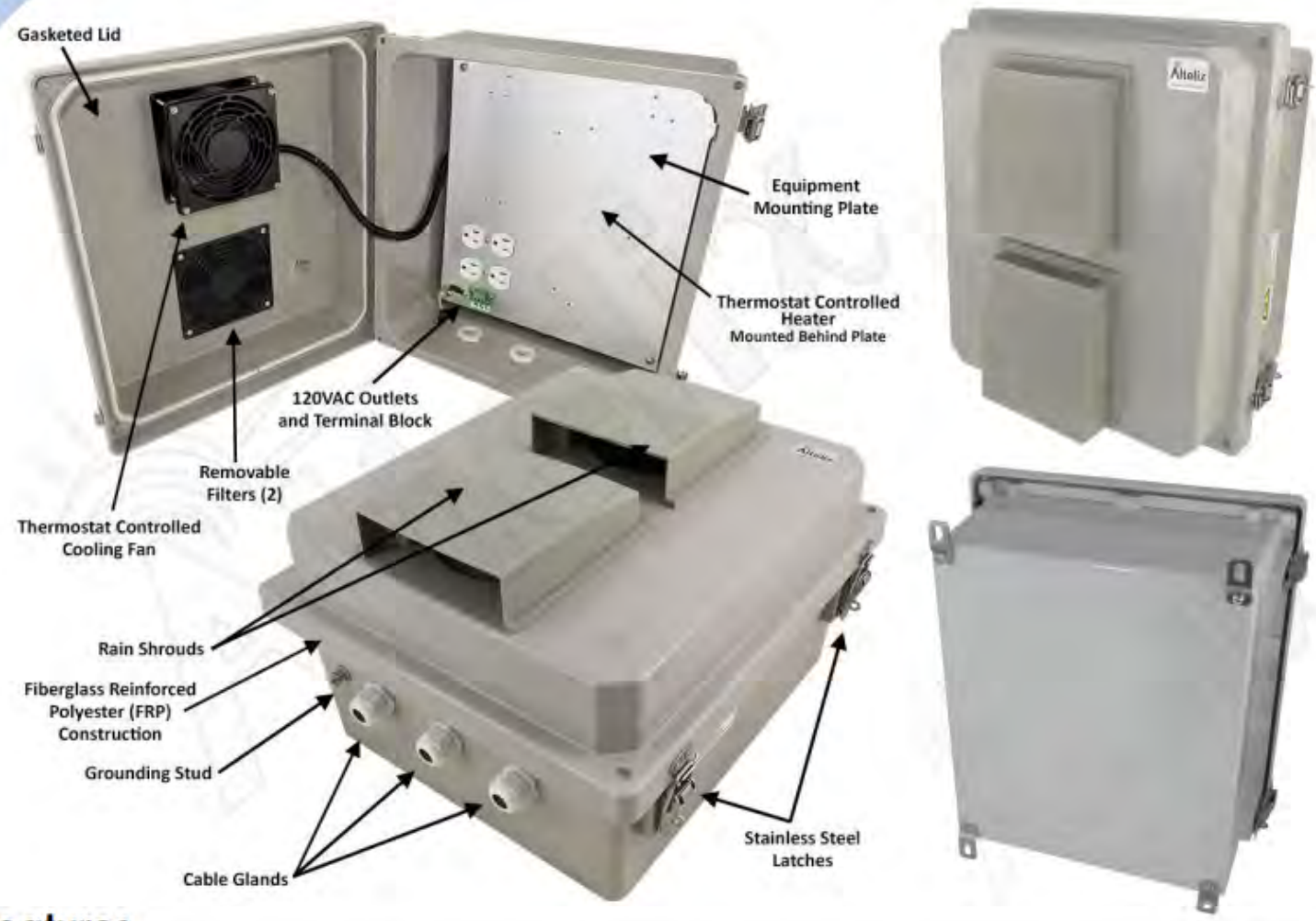
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NF141208VFHA1

14x12x8 Fiberglass Weatherproof Vented NEMA Enclosure with 120 VAC Outlets, Cooling Fan and 200W Heater



Features

- Thermostat Controlled Cooling Fan and 200W Heating System
- (2) 4" Vents with Rain Shields and Screens
- (4) Pre-Wired 120VAC Outlets
- Removable 120VAC Terminal Block
- Aluminum Equipment Mounting Plate
- Extended Lid for Increased Equipment Clearance
- Stainless Steel Hinge and Quick Release Latches with Padlock Hasps
- Fiberglass Reinforced Polyester, FRP
- Weatherproof, UV Stable and Highly Corrosion Resistant
- NEMA Type 3R, 3RX / IP24 Rated
- Includes Cable Glands and Stainless Steel Mounting Feet
- RF Transparent Enclosure
- Pole Mounting Kit Available

Altelix LLC USA: 866-660-9434 +1 561-660-9434 sales@altelix.com www.altelix.com
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Specifications are subject to change without notice. See www.altelix.com for most current information.

Description

The **Altelix NF141208VFHA1** Heated/Fan Cooled Vented NEMA Enclosure is ideal for outdoor environments where temperatures vary between hot and cold. It is equipped with thermostat controlled heating and cooling systems to help keep your equipment within its operational temperature range. The aluminum equipment mounting plate features four pre-wired 120VAC power outlets for your equipment and a quick-connect top entry terminal block for easy wiring by a qualified installer. It is easily removable which helps simplify on-site wiring.

Thermostat Controlled Cooling Fan and 200W Heating System - Ideal for outdoor environments where temperatures vary between hot and cold, this enclosure features two 4" vents with rain shrouds and a thermostat-controlled cooling fan which helps maintain lower internal temperatures. Controlled by a separate thermostat, the 200W heating system is ideal for harsh weather and cold environments. Both the fan and heater are wired internally, leaving all the power outlets available for installed equipment.

Extreme Protection Built to Last - This rugged JIC style NEMA box is molded from durable UV stable and corrosion resistant fiberglass reinforced polyester (FRP) with a UL94-5V flame rating. The FRP material is dent-proof, non-conductive and RF transparent for compatibility with wireless equipment. It can be easily drilled and modified by the installer as needed. It features a gasketed door with stainless steel continuous hinge and stainless-steel quick release latches with padlock hasps. The generous size of this enclosure and the extended lid accommodate a wide range of equipment.

Specifications

Material	Fiberglass Reinforced Polyester
Color	Gray
Voltage / Max Load	120VAC / 15A @ 120VAC
Cooling Fan Turn-On Temperature	100°F (38°C)
Cooling Fan Turn-Off Temperature	79°F (26°C)
Heater Turn-On Temperature	43°F (6°C)
Heater Turn-Off Temperature	59°F (15°C)
Heater Power	200 Watts
Outer Dimensions	15.7 x 13.8 x 10.1 Inches (401 x 352 x 258 mm)
Inner Dimensions	13.0 x 11.0 x 5.0 Inches (330 x 279 x 127 mm)
Mounting Plate Material	0.10 in (2.5 mm) Aluminum
Mounting Plate Dimensions	10.9 x 12.8 in. (276 x 324 mm)
Weight	13.4 lbs. (6.1 kg)
Terminal Block Wire Range	12-18 AWG
Terminal Block Strip Length	6-7mm
Ratings	NEMA Type 3R, 3RX / IP24
Flame Rating	UL94-5V

*See drawing for detailed dimensions of maximum space available for equipment.

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Video Surveillance System Equipment

Milestone Systems

XProtect® Overview

The Open Platform Company



XProtect video management software
Video surveillance solutions to fit all your needs

Milestone XProtect is powerful video management software (VMS) that makes it easy to manage video surveillance systems. XProtect VMS displays video from surveillance cameras, enables users to control cameras and has intuitive tools for searching for recorded video. With a wide array of features for very basic to advanced surveillance needs, there is an XProtect VMS suited for all installation sizes and environments. A flexible licensing model ensures it is easy to upgrade from one XProtect product to another or add additional cameras to the system at any time.

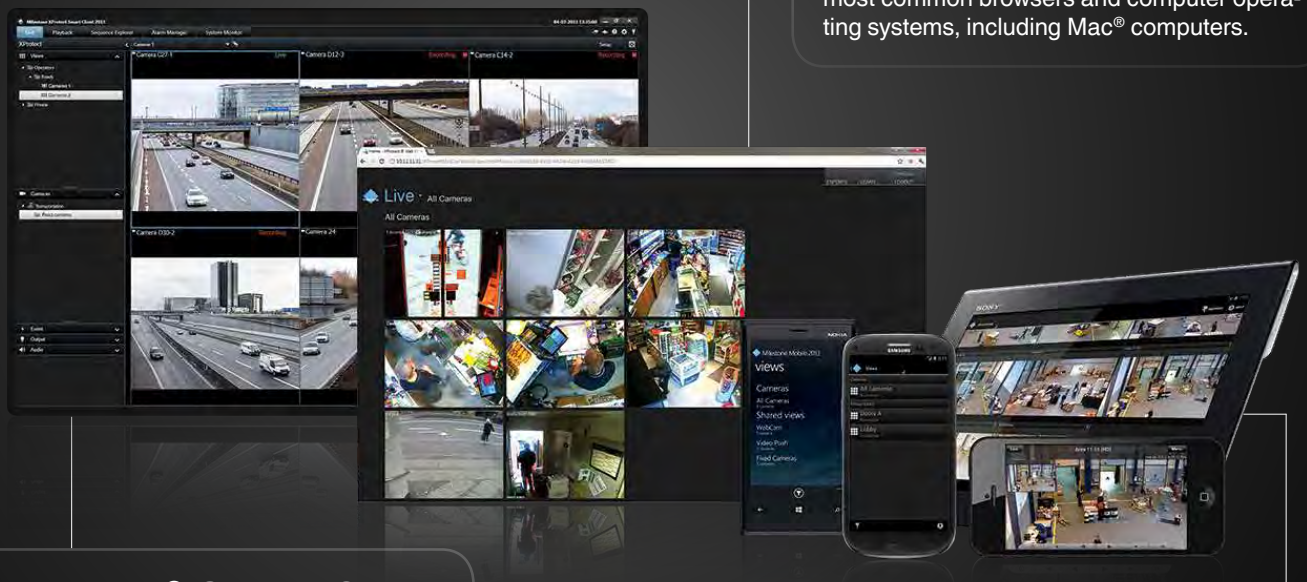
XProtect is based on an open platform, which means the software is compatible with the industry's widest choice of IP cameras and encoders, giving users the freedom to mix and match hardware to fit their needs and budget. The open platform also means that users can benefit from integrating their video system with today's best analytics and business solutions and expand what is possible with future innovations. With XProtect, the possibilities are unlimited.

XProtect clients

Users have a choice of three flexible clients to view each XProtect VMS product[1]: XProtect Smart Client, XProtect Web Client and Milestone Mobile. Available for free in 26 languages, the XProtect clients give users the ability to access video from any internet enabled computer and most mobile devices.

XProtect® Web Client

Connect instantly from any computer
XProtect Web Client is an intuitive, web-based interface that provides access to the most common VMS features and functions. Users can view, play back, export video and control outputs, such as opening and closing doors. It requires no training and can be used with the most common browsers and computer operating systems, including Mac® computers.



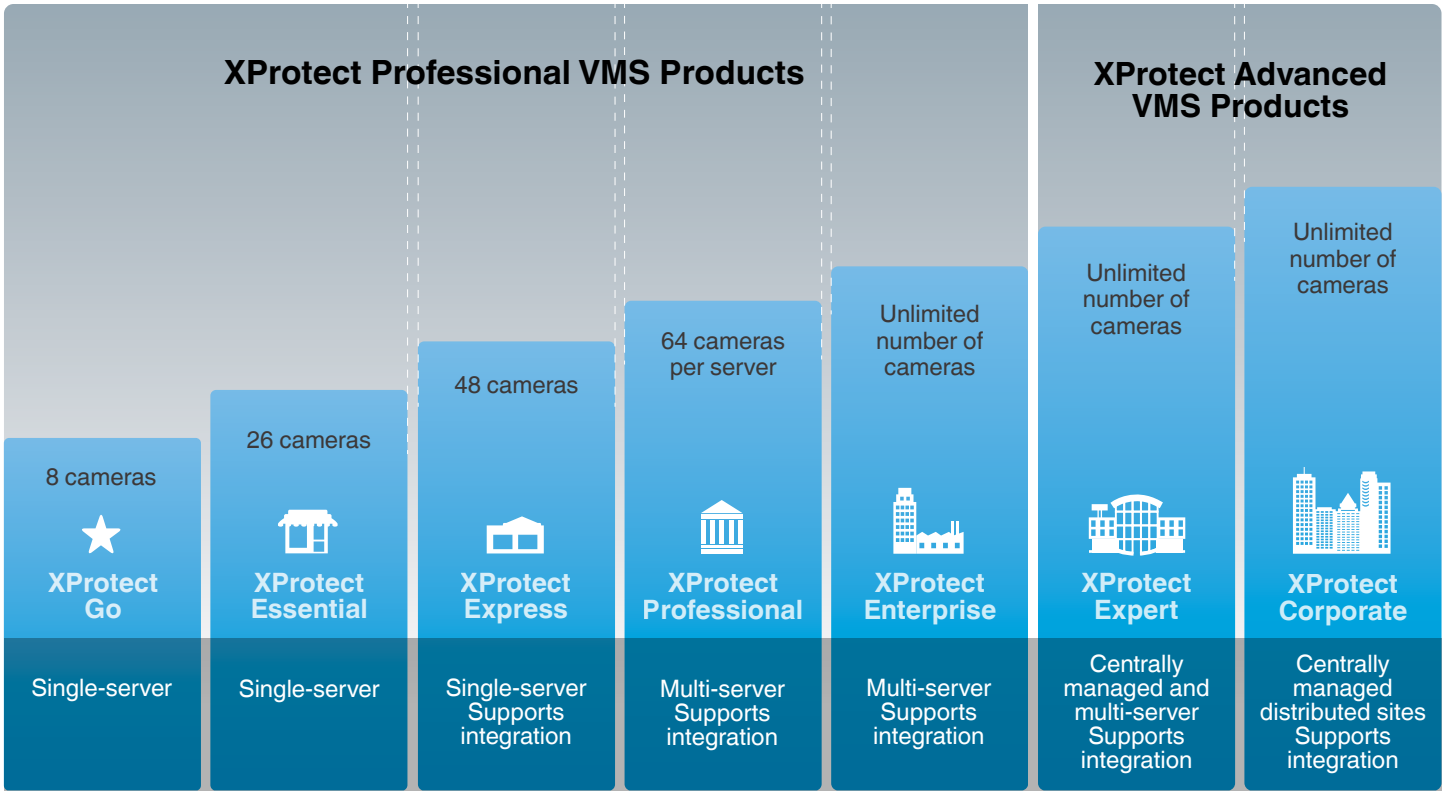
XProtect® Smart Client

Ultimate control
XProtect Smart Client is the interface used for daily operations; it displays a wide array of features to view video, gain situational awareness, respond to alarms, investigate incidents, and handle evidence. This flexible client can be optimized to handle a variety of tasks, operator skill levels and working environments. It has the ability to seamlessly support the integration of third-party applications such as building management and access control.

Milestone Mobile

Keeping you close to what's important
Users can view, play back and export video from almost anywhere with Milestone Mobile, an application for Apple®, Android™ and Windows® Phone 8 devices. Milestone Mobile allows users to control outputs and push live video from the device's camera using Video Push[2]. This feature enables users to easily share live video evidence, providing immediate awareness of incidents.

XProtect products



XProtect® Go



IP video surveillance starts here

A free version of XProtect software designed for video surveillance in small businesses.

Key benefits:

- Allows users to experience the true benefits of IP video and the Milestone open platform for free
- Seamless upgrade options make it a risk-free entry into a reliable and secure IP video surveillance solution

XProtect® Essential



Brilliant simplicity for small businesses

An entry-level product that is ideal for small companies that require basic, yet effective VMS functionality.

Key features:

- Quick and easy installation for fast setup
- Effortlessly add cameras to scale any surveillance installation
- Intuitive user interfaces makes it easy to search for and export video sequences
- System alarms alert users to malfunctioning cameras and video storage

XProtect® Express



Increased functionality with video integrations

Cost-effective surveillance software for small businesses and retail shops that require integration with third-party systems.

In addition to the previously listed key features:

- Supports integration of business systems and video analytics directly into the software to create a solution with increased functionality and one common user interface
- Works with XProtect add-on products designed specifically for the retail market to link transaction data with video, helping to optimize retail operations
- Archive video recordings automatically to a network drive, saving storage space on the local server

XProtect® Professional



Interactive monitoring for mid-size installations

Perfect for mid-size companies and institutions that want a complete visual overview of their campus-style installation.

In addition to the previously listed key features:

- Interactive maps display camera locations, providing a consolidated overview of the security installation
- The Alarm Manager consolidates all alarms for immediate visual verification. A prioritized alarm list provides an overview of active alarms and their severity
- Communication is made easy with multichannel, two-way audio because operators can easily broadcast messages to many people at once or directly speak with people at gates or entrances

XProtect® Enterprise



Scalable surveillance for multiple locations

Suitable for medium and large installations that need easy system scalability.

In addition to the previously listed key features:

- Camera navigator helps the operator efficiently track moving objects across different cameras
- Archive on event allows the video archive process to be triggered based on a time schedule or an event
- Privacy masking enables parts of an image to be concealed in live, playback and exported video to prevent it from being viewed
- Dual streaming helps optimize hardware with two independent configurable video streams for live and recorded viewing to optimize servers and network infrastructure

XProtect® Expert



Powerful control for advanced surveillance

Ideal for medium and large installations that require central management.

In addition to the previously listed key features:

- Central management user interface controls all connected cameras, devices, storage and users
- A versatile rule engine makes it possible to automate different aspects of the system, based on events or time schedules, eliminating the need for manual control
- Edge Storage allows camera-integrated storage to act as a safeguard function in the event of network or server failure
- Bookmarks allow users to mark video sections and add descriptive notes to quickly sort through video evidence for later analysis or sharing with others

XProtect® Corporate



High performance for high security

Designed for large, high-risk installations distributed across multiple locations.

In addition to the previously listed key features:

- Milestone Interconnect™ provides cost-efficient central surveillance across geographically dispersed sites by connecting XProtect Corporate with multiple XProtect VMS, Milestone Husky or Milestone Arcus installations to create one powerful security solution
- Federate and centrally manage independent XProtect Corporate and XProtect Expert sites for efficient administration of multi-site, multi-organization installations with Milestone Federated Architecture™
- High-availability video failover for video viewing and recording capabilities with minimal interruption and video loss in the event of system problems
- Secure video storage with video database encryption and digital signing on recorded video helps prevent internal tampering
- Multi-stage video storage mechanism with data grooming possibilities provides efficient long term storage

XProtect® Smart Wall

XProtect Smart Wall is an advanced add-on video wall product for XProtect Corporate that provides an unparalleled situational overview of large surveillance centers, helping to improve response times. The operator can publish cameras easily on XProtect Smart Wall using intuitive drag-and-drop operations or automatically using the rules engine. Flexible presets make it possible to optimize the layout and content of XProtect Smart Wall for different operational situations. XProtect Smart Wall supports any number or combination of monitors and runs on standard servers and displays.



Milestone Interconnect™

Cost-efficient distributed surveillance

Milestone Interconnect[3] is a unique system concept that allows all XProtect VMS and Milestone Husky products, as well as the Milestone Arcus platform, to be connected with Milestone's premium software XProtect Corporate. Milestone Interconnect provides a flexible way to gain central surveillance operation across geographically dispersed sites. It combines cost-efficient remote Milestone VMS solutions with the advanced surveillance functions of XProtect Corporate in one cohesive and powerful security solution. The ability to detect incidents and remotely manage interconnected sites from one central system reduces operation costs and the need for on-site visits. Its intelligent video storage management makes optimal use of available remote and central storage and network resources. Milestone Interconnect is ideal for any industry that has distributed surveillance where the operation of the remote sites is coordinated centrally. For example, using Milestone Interconnect, retail chain stores can choose the XProtect VMS that best fits their needs and budget and connect with headquarters. The central headquarters can access live and recorded video from each store, eliminating the need to physically retrieve video from the stores.

**Please note that XProtect Corporate, XProtect Expert, Milestone Arcus and the Milestone Husky series will only be compatible with Milestone Interconnect during late Fall of 2013. Please check the Milestone website for more information about when the Husky series will be available in specific regions.*

Key Features	XProtect Go	XProtect Essential	XProtect Express	XProtect Professional	XProtect Enterprise	XProtect Expert	XProtect Corporate
Number of cameras per server	8	26	48	64 (a)	Unlimited (a)	Unlimited	Unlimited
Number of supported servers	1	1	1	Unlimited (b)	Unlimited	Unlimited	Unlimited
Maximum number of users	1	5	5	Unlimited	Unlimited	Unlimited	Unlimited
Support for Milestone Mobile	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Support for XProtect Web Client	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multiple video export formats		Yes	Yes	Yes	Yes	Yes	Yes
Alarm Manager		Yes (c)	Yes (c)	Yes	Yes	Yes	Yes
Smart Search		Yes	Yes	Yes	Yes	Yes	Yes
Archiving to network storage			Yes	Yes	Yes	Yes	Yes
Third-party application integration (d)			Yes	Yes	Yes	Yes	Yes
Support for video analytics (d)			Yes	Yes	Yes	Yes	Yes
Scalable multi-server solution				Yes	Yes	Yes	Yes
Map function				Yes	Yes	Yes	Yes
Microsoft Active Directory support				Yes	Yes	Yes	Yes
Centralized management						Yes	Yes
Flexible event rule engine						Yes	Yes
Edge Storage						Yes	Yes
Failover Recording Servers							Yes
Support for XProtect Smart Wall							Yes
Milestone Federated Architecture						Supported	Management and supported
Milestone Interconnect		Supported	Supported	Supported	Supported	Supported (e)	Management and supported (e)
Customer Dashboard		Supported	Supported	Supported	Supported		

(a) For most installations larger than 250 cameras, Milestone recommends using XProtect Corporate or XProtect Expert
(b) One Master Recording Server is included in the XProtect Professional Base License and that licenses must be purchased for additional Slave Recording Servers
(c) Not full alarm management functionality
(d) Using Milestone Integration Platform (MIP)

Notes

[1]Functionality of the clients is determined by the specific XProtect product or product versions.
[2]An additional camera license is required for each user of Video Push. The price of the camera license is determined by the user's XProtect VMS product.
[3]The use of Milestone Interconnect is subject to separate licensing in the central XProtect Corporate system.

Product compatibility

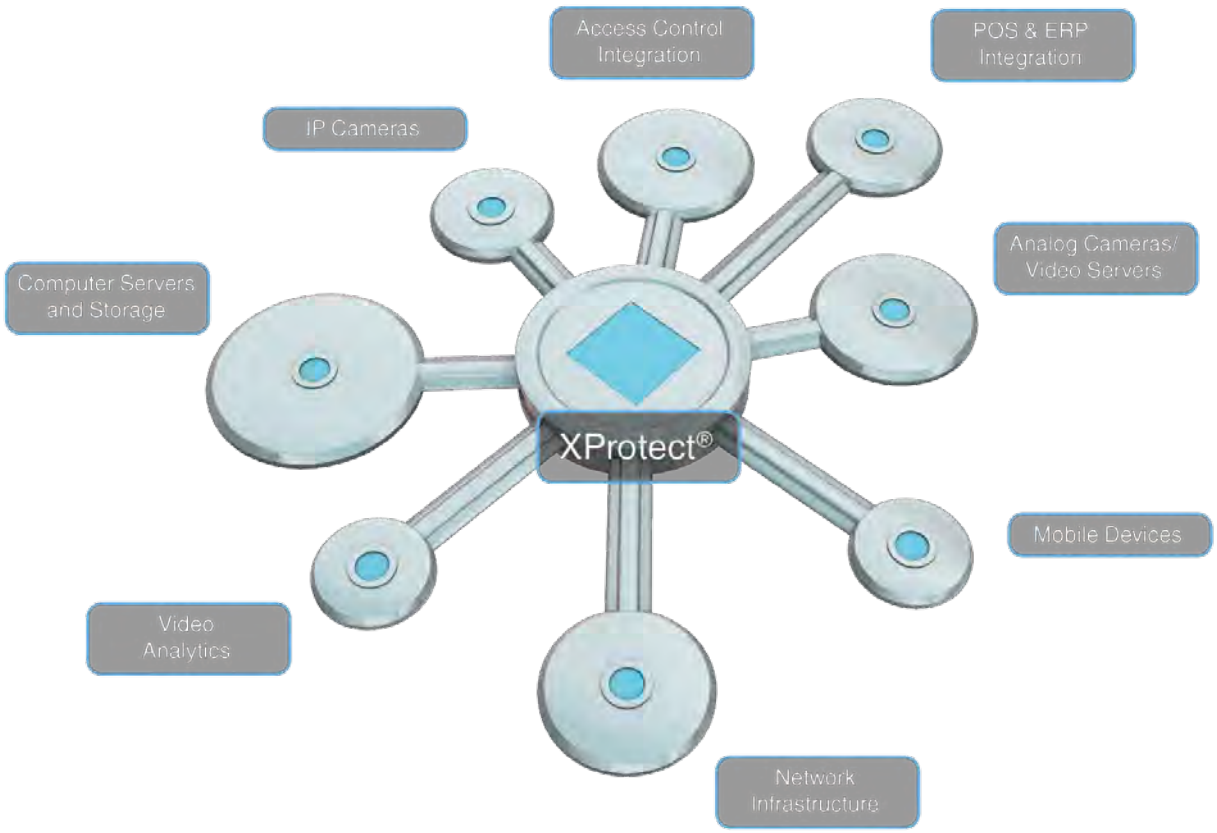
XProtect Web Client is compatible with the following operating systems: Microsoft Windows®, Linux and OS X® and the following web browser versions and later: Microsoft Internet Explorer® 9, Safari® 5, Google Chrome™16 and Mozilla® Firefox® 11. Milestone Mobile supports devices running Android™ 2.2 and higher, iOS6 and later or Windows® Phone 8 or higher. XProtect Web Client and Milestone Mobile work with all XProtect VMS versions and later: XProtect Corporate 4, XProtect Expert

The Milestone Open Platform

A foundation for long-term success

Milestone's XProtect open platform video management software (VMS) integrates with the industry's widest choice in cameras, giving you the freedom to choose equipment according to your needs and budget. Committed to providing a true IP video open platform and freedom of choice, Milestone is proud to be among the first VMS vendors to support and lead the future progress of ONVIF and PSIA standards.

Integrate applications and systems into XProtect VMS with the Milestone Integration Platform Software Development Kit (MIP SDK). The open architecture of XProtect, together with the MIP SDK, allows for endless possibilities to add features and functionality for creating powerful, custom surveillance solutions.



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Milestone has more than 15 offices around the world. For a complete list, visit www.milestonesys.com

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milestone

About Milestone Systems

Founded in 1998, Milestone Systems is the global industry leader in open platform IP video management software. The XProtect platform delivers powerful surveillance that is easy to manage, reliable and proven in thousands of customer installations around the world. With support for the widest choice in network hardware and integration with other systems, XProtect provides best-in-class solutions to video enable organizations – managing risks, protecting people and assets, optimizing processes and reducing costs. Milestone software is sold through authorized and certified partners. For more information, visit: www.milestonesys.com



AVIGILON™

Network Video Recorders

Uncompromising performance and reliability you can trust

Built to handle heavy-duty video workloads and flexible retention requirements without sacrificing performance, the sixth-generation **Avigilon Network Video Recorder (NVR6)** delivers where it matters: performance, reliability, and security. Quickly scale up from terabytes to petabytes of storage at a single location, as the NVR6 offers 16TB to 440TB storage options in a single NVR. Experience the might of a storage density that matches the compute density, supporting up to 400 recording and live streaming channels. Streamline your server deployment to save time and resources with NVR6, fully optimized and pre-configured with Avigilon Unity Video[1] software and Windows OS.

Flexible and scalable tier-1 storage

Offers flexible configurations for security teams to quickly scale up to 440 TB in Tier-1 storage capacity and tailor it to their unique retention requirements.

Superior redundancy & reliable data storage

Reliable storage with RAID-configured redundancy offers a highly available and resilient system that protects your data. Our models include reliable hard drives with RAID6 (STD and PRM) or RAID60 (PRM PLUS) redundancy.

Quick & simple deployment with Avigilon Unity Video™ pre-configured

The NVR6 comes pre-configured with Avigilon Unity Video[1] software for secure network video recording and management of Avigilon cameras up to 61 MP resolution. Comes with Unity Video 8 installer available for upgrade.

Increase system uptime & productivity

Sites connected to the cloud and subscriber health can use system health monitoring to increase system availability, streamline maintenance time, and minimize on-site service calls.

Respond faster with AI-powered analytics support

Security teams can respond faster to critical events with the NVR6's seamless support for Avigilon Appearance Search, Facial Recognition, and LPR technologies.

Resolve technical issues end-to-end with a single-point-of-contact

Our NVR6s are backed by up to a 5-year warranty[2] and 24/7 lifetime technical support dedicated to Avigilon's End-to-End solution.

Strengthen cybersecurity

Designed with cybersecurity in mind, the NVR6 comes with a TPM 2.0 module built-in to support hardware Root of Trust authentication and data encryption.

[1] Pre-installed with Avigilon Control Center 7. Unity Video 8 Installer for upgrade is available.
[2] NVR Value comes with a 3-year warranty only. Warranty coverage and support Service Level Agreement is subject to end user's geographic location. Please refer to Avigilon Limited Warranty & Product Policies (Supplement #1 for Form D chassis and Supplement #2 for Form H chassis) and our datasheet for more information.

sales@avigilon.com | avigilon.com

Analytics and Specifications



Avigilon Appearance Search™

Quickly locates a specific person or vehicle of interest across an entire site using a sophisticated deep learning AI search engine.

UNITY8/ACC7-ENT required



License Plate Recognition (LPR)

Significant improvements[2] in LPR performance compared to the previous generations of NVRs. Works with ACC software for accurate license plate capture at a range of distances and speeds. Requires an additional license.

UNITY8/ACC7-LPR required



Facial Recognition

Detects matches from managed watchlists to alert operators of people of interest. Requires Appearance Search and an additional license.

UNITY8/ACC7-FACE required



Occupancy Counting

With cameras at entrances and exits, a running total of occupancy can be monitored in real time.

ACS Required

	Maximum Supported Cameras By Feature[1]		Number of LPR Lanes[2]			
NVR6 Model	Appearance Search Only[3]	Facial Recognition + Appearance Search[3]	5 FPS (<16 KM/H)	10 FPS (<48 KM/H)	20 FPS (<100 KM/H)	30 FPS (<150 KM/H)
Premium Plus	220	60	60	30	15	10
Premium	200	50	40	20	10	6
Standard	90	50	22	11	5	3

[1]Assumes each channel consists of a H.264/H.265 2MP 30 FPS primary stream and a low resolution 30 FPS secondary stream with moderate ONVIF Profile S motion metadata as well as appliance-wide average per camera rates of classified objects leaving field of view:
- H6A/H5A Cameras - One every second;
- H4A Cameras - One every two seconds.

Each multisensor camera with 3-4 sensors is considered equivalent to 3-4 cameras.
Additional licenses may be required. For more information, contact Avigilon Sales.

[2] Assumes a 3 MP camera with 1 MP license plate scan area and Frames Per Second (FPS) to recognize license plates up to vehicle speeds in Kilometers Per Hour (KM/H) . Results may vary according to camera mounting parameters.

[3] Requires H6A/H5A or H4A cameras and ACC 7.14.32 / Unity Video 8.3.0.

Specifications

System		NVR6 Premium Plus Form H	NVR6 Premium Form D	NVR6 Standard Form D
Capacity		200/240/280/360/440 TB	72/96/120/160/200 TB	16/24/32/48/64 TB
Avigilon Unity Video/Avigilon Control Center™ Edition		Version 7 (factory installed), Version 8 upgrade available on machine		
Video Streaming Performance (10 GbE or 1 GbE Teamed - Multiple Connections)[1]	Recording Rate:	Up to 1500/1675/1870/2300/2700Mbps, increasing with storage capacity	Up to 1500 Mbps	Up to 900 Mbps[2]
	Recording Channels:	Up to 220/245/275/335/400, increasing with storage capacity	Up to 200	Up to 130[2]
	Livestream Rate:	Up to 1500/1675/1870/2300/2700 Mbps, increasing with storage capacity	Up to 1500 Mbps	Up to 900 Mbps[2]
	Livestream Channels:	Up to 220/245/275/335/400, increasing with storage capacity	Up to 200	Up to 130[2]
	Playback Rate:	Up to 340/370/400/500/680 Mbps, increasing with storage capacity	Up to 600 Mbps	Up to 600 Mbps[2]
	Playback Channels:	Up to 50/55/60/75/100, increasing with storage capacity	Up to 80	Up to 80[2]
Video Streaming Performance (1 GbE - Non-Teamed - Multiple Connections)[1]	Recording Rate:	Up to 800 Mbps	Up to 800 Mbps	Up to 800 Mbps
	Recording Channels:	Up to 120	Up to 120	Up to 120
	Livestream Rate:	Up to 800 Mbps	Up to 800 Mbps	Up to 800 Mbps
	Livestream Channels:	Up to 120	Up to 120	Up to 120
	Playback Rate:	Up to 340/370/400/500/680 Mbps, increasing with storage capacity	Up to 600 Mbps	Up to 600 Mbps
	Playback Channels:	Up to 50/55/60/75/100, increasing with storage capacity	Up to 80	Up to 80
Operating System		Windows Server 2022 LTSC		Windows Server 2022 LTSC or Windows 10 IoT Enterprise LTSC 2021
Hard Disk Drive Configuration	Video Data:	RAID 60 Up to 26 × 3.5" NLSAS Drives, hot-swappable	RAID 6 Up to 12 × 3.5" SATA Drives, hot-swappable	RAID 6 Up to 10 × 3.5" SATA Drives, hot-swappable
	Operating System:	2 × 480 GB NVMe SSD Drives, RAID 1	2 × 480 GB M.2 SSD Drives, RAID 1	
Recording Storage Capacity		Up to 520 TB raw; 440 TB effective (RAID 60)	Up to 240 TB raw; 200 TB effective (RAID 6)	Up to 80 TB raw; 64 TB effective (RAID 6)
Network Interface[3]		4 × 10 GbE SFP+ ports 4 × 1 GbE RJ-45 ports	4 × 10 GbE SFP+ ports 6 × 1 GbE RJ-45 ports	2 × 10 GbE SFP+ ports[2] (optional) 6 × 1 GbE RJ-45 ports
Memory		8 × 16 GB DDR5	4 × 16 GB DDR5	2 × 16 GB DDR5
Processor		2 × Intel® 16-core Xeon®	2 × Intel® 8-core Xeon®	1 × Intel® 8-core Xeon®
License Plate Recognition		Supported[4]		
Appearance Search and Facial Recognition on Avigilon Analytic Cameras		Supported[4]		

[1]Assumes each channel consists of a H.264/H.265 2MP 30 FPS primary stream and a low resolution 30 FPS secondary stream with moderate ONVIF Profile S motion metadata.
[2]Optional, with 10 GbE Kit (NVR6-AINVR2-FORM-D-10GBE) sold separately.
[3]Direct Attach Cables (NVR6-AINVR2-FORM-H-SFPPLUS-DA for NVR6 Premium Plus or NVR6-AINVR2-FORM-D-SFPPLUS-DA for all NVR6 Premium/Standard) or system-specific SFP+ transceivers (NVR6-AINVR2-FORM-H-SFPPLUS-SR for NVR6 Premium Plus, NVR6-AINVR2-FORM-D-SFPPLUS-SR for NVR6 Premium/Standard) sold separately.
[4]Purchase of license required, refer to the list of features under "Analytics and Specifications" on the previous page for more information.

System (continued)	NVR6 Premium Plus Form H	NVR6 Premium Form D	NVR6 Standard Form D
Video Outputs	1 × VGA		
Local Viewing	No		
Out-of-band Management	iLO Advanced	iDRAC 9 Enterprise	
Warranty	5-year 4-hour mission critical "Form H" warranty with onsite parts delivery service. 5-year keep your drive warranty upgrade available. Refer to Warranty Supplement #2.	5-year 4-hour mission critical "Form D" warranty with onsite parts delivery service. 5-year keep your drive warranty upgrade available. Refer to Warranty Supplement #1.	5-year NBD (Next Business Day) "Form D" warranty with onsite parts delivery service. 5-year keep your drive warranty and 4-hour mission critical warranty upgrades available. Refer to Warranty Supplement #1.

Mechanical	NVR6 Premium Plus Form H	NVR6 Premium Form D	NVR6 Standard Form D
Form Factor	2U Rack Mount Form H High Density Chassis	2U Rack Mount Form D Chassis	
Dimensions (L x W x H)	812.80 mm × 448.0 mm × 87.5 mm 32.00" × 17.63" × 3.44"	721.6 mm × 482.0 mm × 86.8 mm 28.4" × 18.98" × 3.42"	
Weight	Max: 42.8 kg (95 lbs)	Max: 28.6 kg (63 lbs)	

Electrical	NVR6 Premium Plus Form H	NVR6 Premium Form D	NVR6 Standard Form D
Power Input	100 to 240 VAC, 50/60 Hz, auto-switching		
Power Supply	Dual (1+1) 1000 W redundant	Dual (1+1) 1400 W redundant	Single 1400 W, optional redundant power supply available.
Power Consumption	Maximum 1000 W (3413 BTU/h)	Maximum 988 W (3371 BTU/h)	Maximum 725 W (2473 BTU/h)
Power Efficiency	Titanium	Platinum	

Environmental	NVR6 Premium Plus Form H	NVR6 Premium Form D	NVR6 Standard Form D
Operating Temperature	10°C to 30°C (50°F to 86°F)	10°C to 35°C (50°F to 95°F)	
Storage Temperature	-30°C to 60°C (-22°F to 140°F)	-40°C to 65°C (-40°F to 149°F)	
Operating Humidity	8% to 90% relative humidity with 28°C (82.4°F) max dew point	8% to 80% relative humidity with 21°C (69.8°F) max dew point	
Storage Humidity	5% to 95% RH with 38.7°C (101.7°F) max dew point. Atmosphere must be non-condensing at all times.	5% to 95% RH with 27°C (80.6°F) max dew point. Atmosphere must be non-condensing at all times.	
Operating Vibration	0.15 Grms at 10 Hz to 300 Hz	0.21 Grms at 5 Hz to 500 Hz	
Storage Vibration	0.5 Grms at 10 Hz to 500 Hz	1.88 Grms at 10 Hz to 500 Hz	
Operating Shock	2 G	6 G	
Storage Shock	15 G	71 G	
Operating Altitude	3,050 m (10,000 ft)		
Storage Altitude	9,144 m (30,000 ft)	12,000 m (39,370 ft)	

Certifications	NVR6 Premium Plus Form H	NVR6 Premium Form D	NVR6 Standard Form D
Certifications/Approvals	UL, cUL, CE, NRCS, NOM, RCM, VCCI, BSMI, CCC, KC, UKCA, RoHS, BIS, CMIM	UL, cUL, CE, NRCS, NOM, RCM, VCCI, BSMI, CCC, KC, UKCA, RoHS, CMIM, BIS[1]	
Safety Standards	UL/CSA/IEC/EN 62368-1		
Electromagnetic Emissions Standards	FCC Part 15 Subpart B (Class A), ICES-003 (Class A), EN 55032 (Class A), EN 61000-3-2, EN 61000-3-3		
Electromagnetic Immunity Standards	EN 55035		

[1]Not available at launch, coming in second half of 2024.

Supplied Accessories	NVR6 Premium Plus Form H	NVR6 Premium Form D	NVR6 Standard Form D
Rack Rail System	Shelf-Mount Adjustable Rail Kit	ReadyRails Sliding Rails with Cable Management Arm	
Bezel	1, front		
Power Cords	4 total: 2 × C13 / C14, 2 × regional variant (from options below)		2 total: 1 × C13 / C14, 1 × regional variant (from options below)

(NA) NEMA 5-15P / C13 

(UK) BS1363 / C13 

(EU) SCHUKO / C13 

(AU) AS3112 / C13 

Outline Dimensions

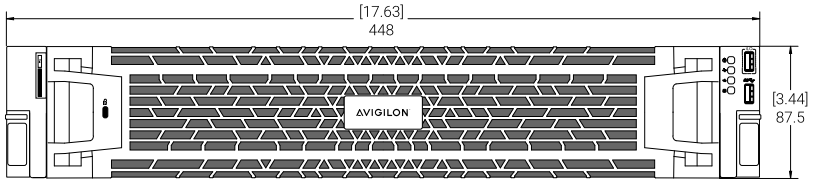
[X.X]	INCHES
X	MM

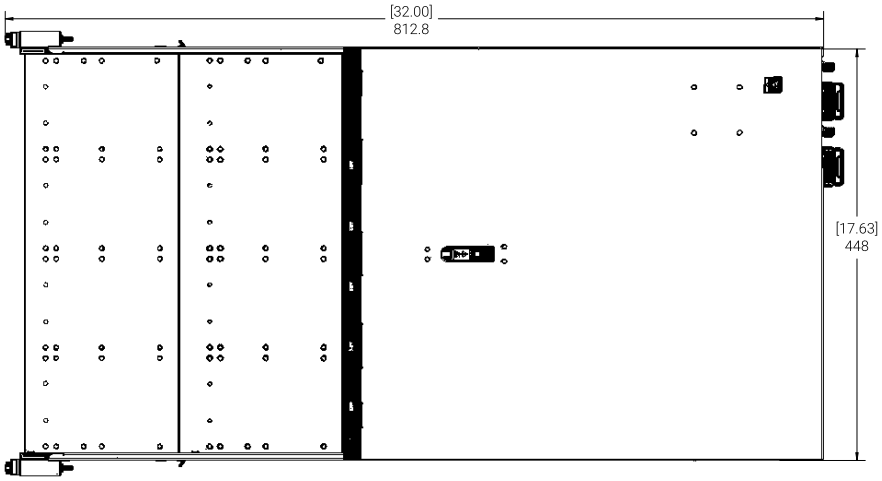
NVR6 Premium Plus Form H (200 240 280 360 440 TB)

Form Factor
2U Rack Mount Form H High Density Chassis

Dimensions (L × W × H)
812.8 mm × 448.0 mm × 87.5 mm
32.00" × 17.63" × 3.44"

Weight (when fully populated with hard drives)
42.8 kg [95 lbs]



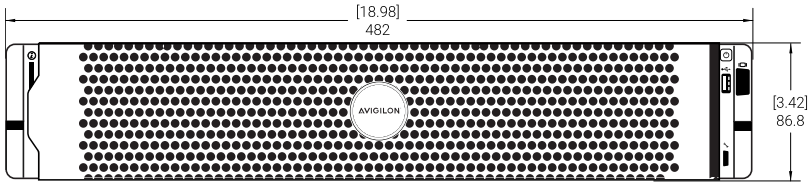


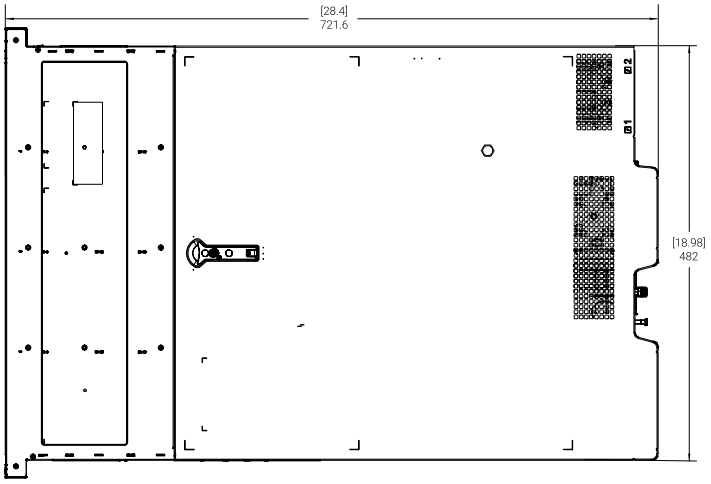
NVR6 Premium Form D (72 96 120 160 200 TB) & NVR6 Standard Form D (16 24 32 48 64 TB)

Form Factor
2U Rack Mount Form D Chassis

Dimensions (L × W × H)
721.6 mm × 482.0 mm × 86.8 mm
28.4" × 18.98" × 3.42"

Weight (when fully populated with hard drives)
28.6 kg [63 lbs]





Ordering Information

NVR6 Premium Plus Form H

NVR6-PRM-PLUS-FORM-H-440TB-S22	NVR6 Premium Plus Form H 440 TB (520 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-PRM-PLUS-FORM-H-360TB-S22	NVR6 Premium Plus Form H 360 TB (440 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-PRM-PLUS-FORM-H-280TB-S22	NVR6 Premium Plus Form H 280 TB (360 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-PRM-PLUS-FORM-H-240TB-S22	NVR6 Premium Plus Form H 240 TB (320 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-PRM-PLUS-FORM-H-200TB-S22	NVR6 Premium Plus Form H 200 TB (280 TB Raw) with Windows Server 2022 LTSC and ACC 7

NVR6 Premium Form D

NVR6-PRM-FORM-D-200TB-S22	NVR6 Premium Form D 200 TB (240 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-PRM-FORM-D-160TB-S22	NVR6 Premium Form D 160 TB (200 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-PRM-FORM-D-120TB-S22	NVR6 Premium Form D 120 TB (144 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-PRM-FORM-D-96TB-S22	NVR6 Premium Form D 96 TB (120 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-PRM-FORM-D-72TB-S22	NVR6 Premium Form D 72 TB (88 TB Raw) with Windows Server 2022 LTSC and ACC 7

NVR6 Standard Form D

NVR6-STD-FORM-D-64TB-S22	NVR6 Standard Form D 64 TB (80 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-STD-FORM-D-64TB-W10	NVR6 Standard Form D 64 TB (80 TB Raw) with Windows 10 IoT Enterprise LTSC 2021 and ACC 7
NVR6-STD-FORM-D-48TB-S22	NVR6 Standard Form D 48 TB (64 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-STD-FORM-D-48TB-W10	NVR6 Standard Form D 48 TB (64 TB Raw) with Windows 10 IoT Enterprise LTSC 2021 and ACC 7
NVR6-STD-FORM-D-32TB-S22	NVR6 Standard Form D 32 TB (48 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-STD-FORM-D-32TB-W10	NVR6 Standard Form D 32 TB (48 TB Raw) with Windows 10 IoT Enterprise LTSC 2021 and ACC 7
NVR6-STD-FORM-D-24TB-S22	NVR6 Standard Form D 24 TB (32 TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-STD-FORM-D-24TB-W10	NVR6 Standard Form D 24 TB (32 TB Raw) with Windows 10 IoT Enterprise LTSC 2021 and ACC 7

NVR6-STD-FORM-D-16TB-S22	NVR6 Standard Form D 16 TB (24TB Raw) with Windows Server 2022 LTSC and ACC 7
NVR6-STD-FORM-D-16TB-W10	NVR6 Standard Form D 16 TB (24TB Raw) with Windows 10 IoT Enterprise LTSC 2021 and ACC 7

Avigilon Unity Video / Avigilon Control Center Software Licenses

ACC7-ENT	ACC 7 Enterprise Edition license
ACC7-STD	ACC 7 Standard Edition license
ACC7-COR	ACC 7 Core Edition license
ACC7-VAC	ACC 7 Video Analytics feature channel license – Required for Classified Object Detection
ACC7-FACE	ACC 7 Facial Recognition feature channel license
ACC7-FACE-10C	ACC 7 Facial Recognition feature 10 channel license
ACC7-LPR	ACC 7 LPR lane license
UNITY8-ENT	Avigilon Unity Video 8 Enterprise Edition license
UNITY8-STD	Avigilon Unity Video 8 Standard Edition license
UNITY8-COR	Avigilon Unity Video 8 Core Edition license
UNITY8-VAC	Avigilon Unity Video 8 Video Analytics feature channel license – Required for Classified Object Detection
UNITY8-FACE	Avigilon Unity Video 8 Facial Recognition feature channel license
UNITY8-FACE-10	Avigilon Unity Video 8 Facial Recognition feature 10 channel license
UNITY8-LPR	Avigilon Unity Video 8 LPR lane license

Options and Accessories

NVR6 Premium Plus Form H

NVR6-AINVR2-FORM-H-SFPPLUS-DA	3 m (10 ft) SFP+ 10 GbE Twinax Direct Attach cable
NVR6-AINVR2-FORM-H-SFPPLUS-SR	SFP+ Transceivers for Short Range (Multi-mode) on server side
NVR6-AINVR2-FORM-H-SFPPLUS-LR	SFP+ Transceivers for Long Range (Single-mode) between network switches
NVR6-AINVR2-FORM-H-HDDN-HOT-20TB	Spare hard drive, 20 TB NLSAS, front/rear bay, compatible with NVR6 / AI NVR 2 Premium Plus Form H
NVR6-AINVR2-FORM-H-10GBASET	Network Card, OCP Dual Port 10 G-Base-T
NVR6-AINVR2-FORM-H-RAM-32GB	32 GB RAM Upgrade Kit, 2 × 16 GB DDR5 DIMMs
NVR6-AINVR2-FORM-H-PSU-1000W	1000 W Flex Slot Titanium Hot Plug/Swappable Power Supply Kit, includes regional variant of power cord
NVR6-AINVR2-PRM-PLUS-FORM-H-KYD-WARR-5YR	5-year Keep-Your-Drive Warranty Upgrade
NVR6-FORM-H-AVA-SAN-CONNECT	Connectivity Kit for AVA SAN networking (requires AVA Transceiver and Fiber Optic Cables included in AVA-HED1-NVR6-FORM-H-CONNECT)
AVA-HED1-NVR6-FORM-H-CONNECT	AVA Connectivity Kit for Direct Attachment

NVR6 Premium Form D

NVR6-AINVR2-FORM-D-SFPPLUS-DA	3 m (10 ft) SFP+ 10 GbE Twinax Direct Attach cable
NVR6-AINVR2-FORM-D-SFPPLUS-SR	SFP+ Transceivers for Short Range (Multi-mode) on server side
NVR6-AINVR2-FORM-D-SFPPLUS-LR	SFP+ Transceivers for Long Range (Single-mode) between network switches
NVR6-AINVR2-PRM-FORM-D-HDDS-HOT-20TB	Spare hard drive, 20 TB SATA, front bay, compatible with NVR6 / AI NVR 2 Premium Form D 160/200 TB
NVR6-AINVR2-FORM-D-HDDS-HOT-12TB	Spare hard drive, 12 TB SATA, front bay, compatible with NVR6 / AI NVR 2 Premium Form D 96-120 TB
NVR6-AINVR2-FORM-D-HDDS-HOT-8TB	Spare hard drive, 8 TB SATA, front bay, compatible with NVR6 / AI NVR 2 Premium Form D 72 TB
NVR6-AINVR2-FORM-D-10GBE	Network Card, Dual Port 10 GbE SFP+
NVR6-AINVR2-FORM-D-10GBASET	Network Card, QP 10 G-Base-T
NVR6-AINVR2-FORM-D-RAM-32GB	32 GB RAM Upgrade Kit for 1 CPU Processor Only, 2 × 16 GB DDR5 DIMMs

NVR6-AINVR2-FORM-D-PSU-1400W	1400 W Hot Plug/Swappable Power Supply Kit, includes regional variant of power cord
NVR6-FORM-D-AVA-SAN-CONNECT	Connectivity Kit for AVA SAN networking
AVA-HED1-NVR6-FORM-D-CONNECT	AVA Connectivity Kit for Direct Attachment
NVR-FORM-D-KYD-WARR-5YR	5-year Keep-Your-Drive Warranty Upgrade
NVR6-AINVR2-STDPRM-FORM-D-STATIC-RAIL	Static Rail Kit

NVR6 Standard Form D

NVR6-AINVR2-FORM-D-SFPPLUS-DA	3 m (10 ft) SFP+ 10 GbE Twinax Direct Attach cable
NVR6-AINVR2-FORM-D-SFPPLUS-SR	SFP+ Transceivers for Short Range (Multi-mode) on server side
NVR6-AINVR2-FORM-D-SFPPLUS-LR	SFP+ Transceivers for Long Range (Single-mode) between network switches
NVR6-AINVR2-FORM-D-HDDS-HOT-8TB	Spare hard drive, 8 TB SATA, front bay, compatible with NVR6 / AI NVR 2 Standard Form D 32-64 TB
NVR6-AINVR2-FORM-D-HDDS-HOT-4TB	Spare hard drive, 4 TB SATA, front bay, compatible with NVR6 / AI NVR 2 Standard Form D 16-24 TB
NVR6-AINVR2-FORM-D-10GBE	Network Card, Dual Port 10 GbE SFP+
NVR6-AINVR2-FORM-D-10GBASET	Network Card, QP 10 G-Base-T
NVR6-AINVR2-FORM-D-RAM-32GB	32 GB RAM Upgrade Kit for 1 CPU Processor Only, 2 × 16 GB DDR5 DIMMs
NVR6-AINVR2-STD-FORM-D-2NDCPU	2nd CPU Upgrade Kit, 2 × 16 GB DDR5 DIMMs
NVR6-AINVR2-FORM-D-PSU-1400W	1400 W Hot Plug/Swappable Power Supply Kit, includes regional variant of power cord
NVR6-FORM-D-AVA-SAN-CONNECT	Connectivity Kit for AVA SAN networking, (requires AVA Transceiver and Fiber Optic Cables included in AVA-HED1-NVR6-FORM-D-CONNECT)
AVA-HED1-NVR6-FORM-D-CONNECT	AVA Connectivity Kit for Direct Attachment (requires 2nd CPU for NVR6 Standard)
NVR-FORM-D-KYD-WARR-5YR	5-year Keep-Your-Drive Warranty Upgrade
NVR6-AINVR2-STD-FORM-D-WARR-5Y4HMC	5-year 4-Hour-Mission-Critical Warranty Upgrade
NVR6-AINVR2-STDPRM-FORM-D-STATIC-RAIL	Static Rail Kit

Support

Learn more and find additional documentation at avigilon.com or email sales@avigilon.com for specific product support.

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Unity H6SL Camera Line

2 MP | 3 MP | 5 MP | 8 MP | 5-YEAR WARRANTY

Versatility meets high-performance in the analytics-enabled Avigilon H6SL Camera Line for Avigilon Unity Video. Available as a bullet or dome form factor, these cameras can fit into an extensive range of indoor and outdoor applications in education, commercial, government, retail and hospitality sectors for optimal protection of people and property. It comes equipped with Next-Generation Video Analytics to proactively detect critical events and provide you with superior situational awareness of your site. Even in challenging lighting conditions, the Unity H6SL empowers you to see your site with sharp and clear images.





Features

Next-Generation Video Analytics
Detects more objects with expanded object classifications and greater accuracy for faster responses, even in crowded scenes.

Adaptive IR Options
Maximizes image quality in low-light or no-light areas.

Wide Dynamic Range
Captures clear details in scenes with both very bright and dark areas.

ONVIF® Conformant
ONVIF Profile S and T conformance enables easy integration with existing ONVIF infrastructures. Profile G conformance supports search, playback and retrieval of recordings on the edge, while Profile M allows for cross-functionality with third-party analytic solutions.

Impact, Water, Dust & Corrosion Protection
Protects against impact, water, windblown dust and a degree of corrosion with IK10, IP66/67 and NEMA Type 4X ratings.[1]

Long-Range Lens & Microphone Options
Offers long-range lens options for optimal site coverage. Provides the option to add a microphone accessory on the indoor dome variant for greater evidentiary detail.

Quick & Easy Installation
The camera's modular design allows it to snap into various indoor mounting options for fast and easy installations.

FIPS 140-2 Cryptography With Integrated TPM & Secure Boot
Brings increased data security with FIPS-compliant encryption enabled on cameras[2] , an onboard TPM[3] to secure cryptographic keys and Secure Boot.

[1] IK10 rating available on all models; IP66/67 and NEMA 250 Type 4X rating available on outdoor models only.

[2] Optional purchase of FIPS Level 1 camera license (CAM-FIPS).

[3] FIPS 140-2 Level 3-compliant trusted platform module (TPM).

ONVIF is a trademark of Onvif, Inc.

Specifications

Image Performance		2.0 MP	3.0 MP	5.0 MP	8.0 MP (4K Ultra HD)
Image Sensor		1/2.8” progressive scan CMOS			1/1.8" CMOS
Imaging Area (H × V)		5.57 mm × 3.13 mm 0.219” × 0.123”	5.18 mm × 3.89 mm 0.204” × 0.153”		7.68 mm x 4.32 mm 0.302" x 0.170"
Aspect Ratio		16:9	4:3		16:9
Dynamic Range	WDR Off	83 dB			
	WDR On	126 dB	130 dB		
Camera Operating Mode		Full Feature/No Video Analytics		Full Feature/No Video Analytics/High Framerate	
Max Frame Rate		(50 Hz/60 Hz): 50 fps/60 fps	(50 Hz/60 Hz): 25 fps/30 fps		
Streaming Resolutions[1]	Primary Stream	1920x1080, 1440x1080	2048x1536, 2048x1152, 1792x1344	2592x1944 2240x1680 2560x1440 1920x1080	3840x2160, 3200x1800, 2880x2160, 3072x1728, 2560x1920, 1920x1080
	Secondary Stream	1920x1080, 1440x1080, 1280x960, 1280x720, 960x720, 800x600, 768x432, 640x480, 640x360, 512x288, 384x288, 384x216	1760x1320, 1920x1080, 1600x1200, 1280x960, 1280x720, 960x720, 768x432, 640x480, 640x360, 512x384, 512x288, 384x288, 384x216	1600x1200, 1440x1080, 1920x1080, 1280x960, 1280x720, 800x600, 768x432, 640x480, 640x360, 512x384, 512x288, 384x288, 368x264, 384x216	1920x1440, 1920x1080, 1600x1200, 1280x960, 1280x720, 800x600, 768x432, 640x480, 640x360, 512x384 512x288, 384x288
	Tertiary Stream	640x360, 512x384, 512x288, 384x216	640x480, 640x360, 512x384, 384x288, 384x216	640x360, 512x384, 512x288, 384x288, 368x264, 384x216	640x360, 512x384
Bandwidth Management		HDSM SmartCodec™ technology; Idle scene mode			
3D Noise Reduction Filter		Supported			
Signal-to-Noise Ratio (SNR)		> 50 dB			

[1] Available stream options may vary based on the combination of resolution and frame-rates selected for the individual streams, as well as the camera operating mode.

Lens and IR Illumination (Dome)	2.0 MP	3.0 MP	5.0 MP	8.0 MP(4K Ultra HD)
IR Illumination Max Distance (high power 850 nm LEDs)	30 m (100 ft), full tele 20 m (65 ft), full wide			40 m (131 ft), full tele 25 m (82 ft), full wide
Minimum Illumination (at 33 ms shutter speed)	With IR: 0 lux in monochrome mode; Without IR: 0.01 lux in color mode; 0.005 lux in monochrome mode	With IR: 0 lux in monochrome mode; Without IR: 0.04 lux in color mode; 0.02 lux in monochrome mode		With IR: 0 lux in monochrome mode; Without IR: 0.02 lux in color mode; 0.01 lux in monochrome mode
Horizontal Angle of View	101° - 31°	95° - 28°		103° - 47°
Vertical Angle of View	53° - 17°	69° - 21°		54° - 26°
Max Aperture	F1.6			F1.3
Lens Control	Remote Zoom and Focus, Autofocus, IR Cut Filter			

Lens and IR Illumination (Bullet)		2.0 MP	3.0 MP	5.0 MP	8.0 MP(4K Ultra HD)
IR Illumination Max Distance (high power 850 nm LEDs)	3.4-10.5 mm	50 m (164 ft), full tele 30 m (100 ft), full wide	40 m (131 ft), full tele 20 m (65 ft), full wide		N/A
	10.9-29 mm	N/A	70 m (230 ft), full tele 30 m (100 ft), full wide		N/A
	4.4 - 9.3 mm	N/A			50 m (164 ft), full tele 30 m (100 ft), full wide
Minimum Illumination (at 33 ms shutter speed)	3.4-10.5 mm	With IR: 0 lux in monochrome mode; Without IR: 0.01 lux in color mode; 0.005 lux in monochrome mode	With IR: 0 lux in monochrome mode; Without IR: 0.04 lux in color mode; 0.02 lux in monochrome mode		N/A
	10.9-29 mm	N/A	With IR: 0 lux in monochrome mode; Without IR: 0.04 lux in color mode; 0.02 lux in monochrome mode		N/A
	4.4 - 9.3 mm	N/A			With IR: 0 lux in monochrome mode; Without IR: 0.02 lux in color mode; 0.01 lux in monochrome mode
Horizontal Angle of View	3.4-10.5 mm	101° - 31°	95° - 28°		N/A
	10.9-29 mm	N/A	28° - 10°		N/A
	4.4 - 9.3 mm	N/A			103° - 47°
Vertical Angle of View	3.4-10.5 mm	53° - 17°	69° - 21°		N/A
	10.9-29 mm	N/A	21° - 7°		N/A
	4.4 - 9.3 mm	N/A			54° - 26°
Max Aperture	3.4-10.5 mm	F1.6			N/A
	10.9-29 mm	F1.7			N/A
	4.4 - 9.3 mm	N/A			F1.3
Lens Control		Remote Zoom and Focus, Autofocus, IR Cut Filter			

Image Control	
Image Compression Method	H.264 HDSM SmartCodec, H.265 HDSM SmartCodec, Motion JPEG
Streaming	Multi-stream H.264, Multi-stream H.265, Motion JPEG
Motion Detection	Pixel motion: Selectable sensitivity and threshold. Classified object detection.
Electronic Shutter Control	Automatic, Manual (1/7.5 to 1/30000 sec)
Day/Night Control	Automatic, Manual
Flicker Control	50 Hz, 60 Hz
Iris Control	P-Iris
White Balance	Automatic, Manual
Backlight Compensation	Adjustable
Image Rotation	0°,90°, 180°, 270° including Corridor Mode
Privacy Zones	Up to 64 zones

Network	
Network	100BASE-TX
Cabling Type	CAT5
Network	RJ45 Connector
ONVIF	ONVIF® compliance Profile S, Profile T, Profile G, and Profile M (www.onvif.org)
Security	Password protection, HTTPS encryption, digest authentication, WS authentication, user access log, 802.1x port based authentication, FIPS 140-2 L1 (with optional camera license), onboard FIPS 140-2 L3 certified TPM, Secure

Network	
	Boot, signed and encrypted firmware, CC EAL6+
Protocols	IPv6, IPv4, HTTP, HTTPS, SOAP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, IGMPv3, ICMP, DHCP, Zeroconf, HSTS, QoS, DSCP
Streaming Protocols	RTP/UDP, RTP/UDP multicast, RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP, RTP/RTSP/HTTPS/TCP, HTTP, SRTP
Device Management Protocols	SNMP v2c, SNMP v3

Peripherals	
Onboard Storage	microSD/microSDHC/microSDXC slot – video speed class card required. Class V10 or better recommended. 1.5 TB card tested.
USB Port	USB 2.0

Auxiliary I/O	
Audio Compression Method	G.711 PCM 8 kHz, Opus
Audio Input/Output	Line level I/O
External I/O Terminals	Alarm In, Alarm Out
Microphone (Indoor Dome)	Optional Microphone accessory sold separately for Indoor Dome Camera only

Mechanical (Dome)	Surface Mount	In-Ceiling Mount	Pendant Mount
Dimensions	D 156 mm × H 116 mm; D 6.1” × H 4.6”	D 174 mm × H 165 mm; D 6.9” × H 6.5”	D 156 mm × H 161 mm; D 6.2” × H 6.3"
Weight	0.81 kg	0.80 kg	1.07 kg
Max. Ceiling Thickness	N/A	25 mm (1.0")	N/A
Dome Bubble	Polycarbonate		
Body	Polycarbonate		
Housing	Polycarbonate		
Finish	Plastic, injection molded, Pantone 427C		
Adjustment Range	360° pan, 30°–95° tilt (recommended), 8°–95° tilt (maximum), ±180° azimuth		

Mechanical (Bullet)		3.4-10.5 mm	10.9-29 mm	4.4 - 9.3 mm
Dimensions (L x W x H)	Camera with junction box	296 mm × 126 mm × 106 mm; 11.7” × 5.0” × 4.2”		
Weight		1.31 kg (1.78 kg with junction box)		
Body		Aluminum		
Housing		Aluminum		
Finish		Powder coat, close to Pantone 427C		
Adjustment Range		±175° pan, ±90° tilt, ±175° azimuth		

Electrical		
Power Source		PoE: IEEE 802.3af Class 3 compliant, 12VDC Aux (Available on Bullet only)
IR Illuminator Behaviour	Dome	IR illuminator will turn off if the temperature is 60°C (140°F) or higher. The illuminator will operate at 50% power if the temperature is between 40°C (104°F) and 52 °C (117°F). Hysteresis: 2°C (3.6°F).
	Bullet	IR illuminator will turn off if the temperature is 60°C (140°F) or higher.
RTC Battery Backup		3V manganese lithium
PoE	Dome	10 W max (8 W with no IR or IR disabled)
	Bullet	13 W max
Memory		1GB RAM, 512MB Flash

Environmental	Indoor Dome	Outdoor Dome	Bullet
Operating Temperature	-10°C to +60°C (14°F to 140°F)	-40°C to +60°C (-40°F to 140°F)	-40°C to +60°C (-40°F to 140°F)
Storage Temperature	-10°C to +70°C (14°F to 158°F)		
Absolute Maximum Temperature	74°C (165°F) per NEMA TS2 (Temp.) para 2.2.7.2 - 2.2.7.7		
Humidity	0 - 95% non-condensing		

Certifications	Indoor Dome	Outdoor Dome	Bullet
Certifications/Approvals	UL, cUL, CE, UKCA, ROHS, RCM, NOM, KC, BIS		
Safety	UL/CSA/EN/IEC 62368-1, IEC 62471		
Environmental	IEC/EN 62262 Impact (IK 10), IEC 60529 IP52 rating	IEC/EN 62262 (IK 10), IEC 60529 IP66, IP67 rating, Type 4X, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27	IEC/EN 62262 (IK 10), IEC 60529 IP66, IP67 rating, Type 4X, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27
Electromagnetic Emissions	FCC Part 15 Subpart B (Class B), IC ICES-003 (Class B), EN 55032 (Class B), EN 61000-6-3, EN 61000-3-2, EN 61000-3-3		
Electromagnetic Immunity	EN 55035, EN 61000-6-1, EN 50130-4, EN 50121-4		
Warranty	5-year warranty		

Analytics Specifications

Supported Analytics Events	
Objects in Area	The event is triggered when the selected object type moves into the region of interest.
Object Loitering	The event is triggered when the selected object type moves into the region of interest and then stays for an extended amount of time.
Objects Crossing Beam	The event is triggered when the specified number of objects have crossed the directional beam that is configured over the camera's field of view. The beam can be unidirectional or bidirectional.
Object Appears or Enters Area	The event is triggered by each object that enters the region of interest. This event can be used to count objects.
Object Not Present in Area	The event is triggered when no objects are present in the region of interest.
Objects Enter Area	The event is triggered when the specified number of objects have entered the region of interest.
Objects Leave Area	The event is triggered when the specified number of objects have left the region of interest.
Object Stops in Area	The event is triggered when an object moves into a region of interest and then stops moving for the specified threshold time.
Direction Violated	The event is triggered when an object moves in the prohibited direction of travel.
Tamper Detection	The event is triggered when the scene unexpectedly changes.

Supported Classified Object Types	
Object Types in Outdoor Mode	Vehicle, sub-types: Car, Truck, Bicycle, Motorcycle, Bus Person
Object Types in Indoor Mode	Person

Teach by Example	
Teach By Example	Yes, when used with Avigilon Control Center™ or Avigilon Unity Video

Avigilon Control Center (ACC) Versions Supported Features	
ACC Enterprise Edition Version 6.14.12 or higher	All supported analytic events with two types of classified objects: person or vehicle.
ACC Enterprise Edition Version 7.2 or higher	All supported analytic events with people and vehicles and all vehicle sub-types as classified objects.

Analytic capabilities on the H6SL Camera Line include Unusual Activity Detection, Classified Object Detection and Advanced Analytic Event configurations (e.g. Objects in Area).

Appearance Search, Face Recognition, and other ACC server analytics are not available for use with the H6SL Camera Line.

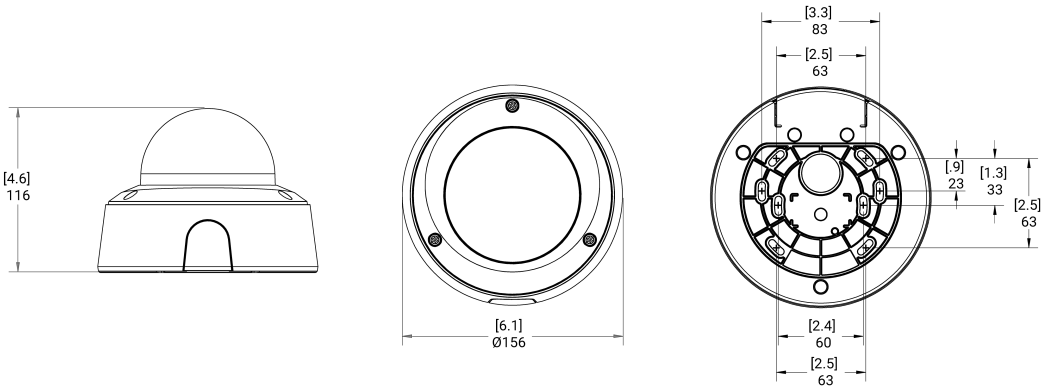
Analytics capabilities, including detection range, may vary by camera line. Consult the Avigilon Self-Learning Video Analytics Design Guide for details specific to the H6SL Camera Line.

Outline Dimensions

[X.X]	INCHES
X	MM

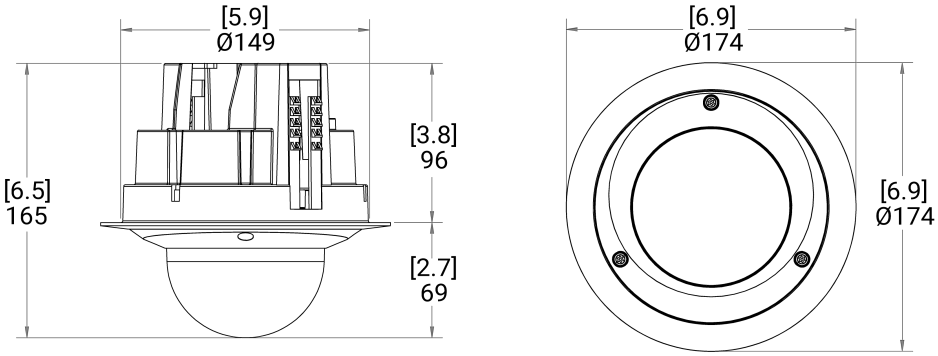
Dome Camera with Surface Mount

(H6SL Dome Camera + Provided Surface Mount)



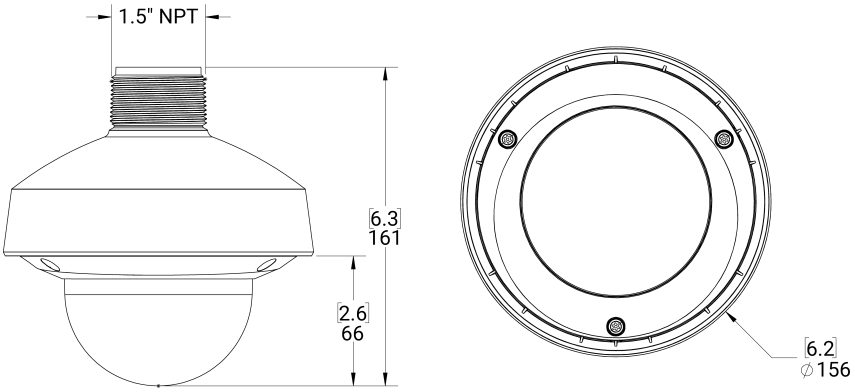
Dome Camera with In-ceiling Mount

(H6SL Dome Camera + SLSPCIL-1001)



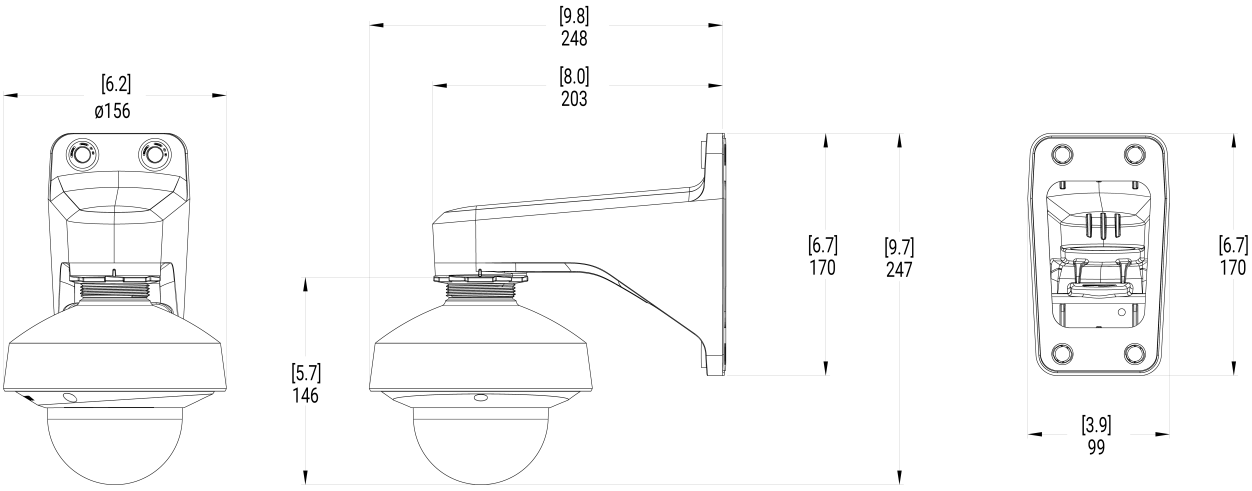
Dome Camera with NPT Adapter

(H6SL Dome Camera + H6SL-MT-NPTA1)

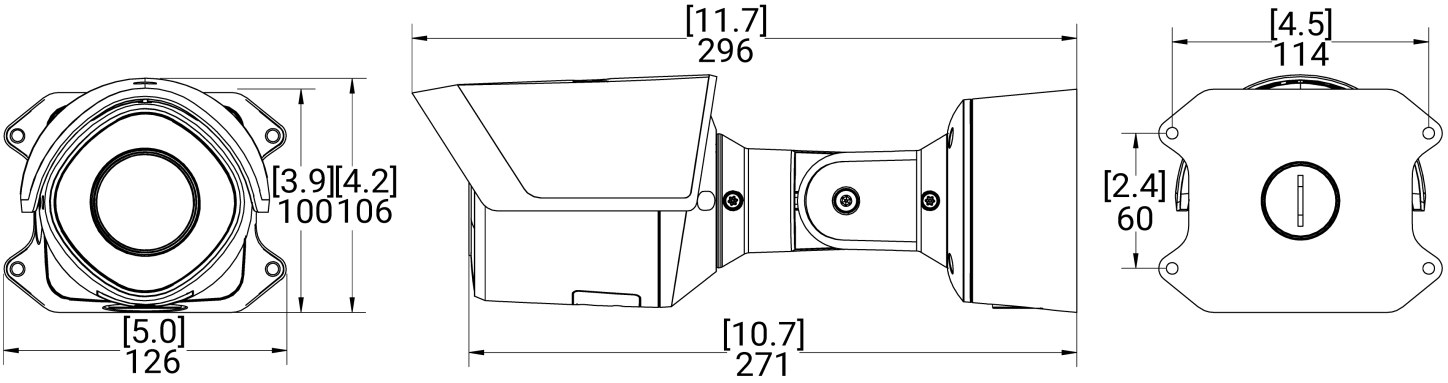


Dome Camera with NPT Adapter and Pendant Wall Mount

(H6SL Dome Camera + H6SL-MT-NPTA1 + WLMT-1021)

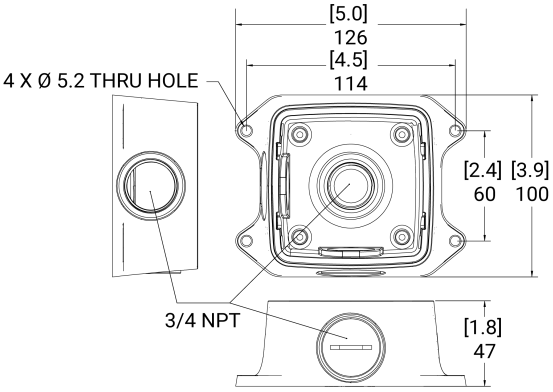


Bullet Camera



Bullet Junction Box

(Provided With Camera)



Ordering Information

Bullet Camera

Model Number	MP	WDR	Analytics	Lens	IR	IP66/IP67, Type4x	SmartCodec	LIGHTCATCHER™ Technology
2.0C-H6SL-BO1-IR	2.0	✓	✓	3.4-10.5 mm	✓	✓	✓	✓
3.0C-H6SL-BO1-IR	3.0	✓	✓	3.4-10.5 mm	✓	✓	✓	✓
3.0C-H6SL-BO2-IR	3.0	✓	✓	10.9-29 mm	✓	✓	✓	✓
5.0C-H6SL-BO1-IR	5.0	✓	✓	3.4-10.5 mm	✓	✓	✓	✓
5.0C-H6SL-BO2-IR	5.0	✓	✓	10.9-29 mm	✓	✓	✓	✓
8.0C-H6SL-BO1-IR	8.0	✓	✓	4.4-9.3 mm	✓	✓	✓	✓

Dome Camera

Model Number	MP	WDR	Analytics	Lens	IR	IP66/IP67, Type4x	SmartCodec	LIGHTCATCHER Technology
2.0C-H6SL-D1	2.0	✓	✓	3.4-10.5 mm			✓	✓
2.0C-H6SL-D1-IR	2.0	✓	✓	3.4-10.5 mm	✓		✓	✓
2.0C-H6SL-DO1-IR	2.0	✓	✓	3.4-10.5 mm	✓	✓	✓	✓
3.0C-H6SL-D1	3.0	✓	✓	3.4-10.5 mm			✓	✓
3.0C-H6SL-D1-IR	3.0	✓	✓	3.4-10.5 mm	✓		✓	✓
3.0C-H6SL-DO1-IR	3.0	✓	✓	3.4-10.5 mm	✓	✓	✓	✓
5.0C-H6SL-D1	5.0	✓	✓	3.4-10.5 mm			✓	✓
5.0C-H6SL-D1-IR	5.0	✓	✓	3.4-10.5 mm	✓		✓	✓
5.0C-H6SL-DO1-IR	5.0	✓	✓	3.4-10.5 mm	✓	✓	✓	✓
8.0C-H6SL-DO1-IR	8.0	✓	✓	4.4-9.3 mm	✓	✓	✓	✓

Accessories

Part Number	Description
WLMT-1021	Wall Mount Arm for 1.5" NPT Pendant
PLMT-1001	Pole Mount Adapter for WLMT-1021 and H6SL Bullet Camera
CRNMT-1001	Corner Mount for WLMT-1021 and H6SL Bullet Camera
USB-AC56-NA-MSI	USB WiFi Adapter Install Kit (North America)
USB-AC56-EU-MSI	USB WiFi Adapter Install Kit (Europe)
SLSPCIL-1001	In-ceiling mounting adapter for H6SL Dome Camera
H6SL-MT-NPTA1	Pendant NPT adapter for H6SL Dome Camera
DCLPNL-1001	Metal ceiling panel for suspended ceiling installations
H6SL-DO-SHLD1	Weathershield for H6SL Dome Camera
ACMICR-1001	Microphone accessory for Indoor H6SL Dome Camera
H6SL-DD-CLER1	Clear lower dome for H6SL Outdoor Dome Camera
H6SL-DD-SMOK1	Smoked lower dome for H6SL Outdoor Dome Camera
H6SL-DI-CLER1	Clear lower dome for H6SL Indoor Dome Camera
H6SL-DI-SMOK1	Smoked lower dome for H6SL Indoor Dome Camera
CNCVR-1001	Adapter 3/4 inch conduit for H6SL Dome Camera, 5-pack
CAM-FIPS	Camera license to enable FIPS Level 1 cryptographic mode

Support

Learn more and find additional documentation at avigilon.com or email sales@avigilon.com for specific product support.

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