

# Detection and Control Components



## FSL-751 Very Intelligent Early Warning (VIEW®) LASER Smoke Detector with FlashScan® (IQ-318/IQ-636X-2)

### Description

The FSL-751 VIEW® Laser Detector provides a revolutionary advance in early warning smoke detection technology. The unique design of this detector, combined with enhanced AWACS™ algorithms in the AUTOPULSE IQ-318 or IQ-636X-2 control panel, allows smoke detection sensitivity that is 10 to 50 times more sensitive than present photoelectric technology. Because of this high sensitivity, the FSL-751 can provide very early warning of slow smoldering fires. Its performance is comparable to present aspiration technology, at a substantially lower installed cost.

The FSL-751 uses an extremely bright laser diode, combined with special lens and mirror optics (U.S. patent pending), to achieve a signal-to-noise ratio that is much higher than traditional photoelectric sensors. In addition, the tightly focused light beam, combined with the AWACS algorithms (U.S. patent pending), allow the system to differentiate between dust and smoke particles. Because of this differentiation, the FSL-751 can be set to extremely high sensitivity, yet can reject false signals caused by larger airborne particles such as dust, lint, and small insects (U.S. patents pending). The FSL-751 is an intelligent (analog/addressable) detector. On FlashScan® systems, up to 159 addresses are available. The FSL-751 may be mixed in any combination with other intelligent sensors on the same loop and is quickly installed using the panel autoprogram feature. The FSL-751 provides dual bi-color LEDs, which blink green in normal operation and illuminate steady red in alarm.

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other designs.

Using the enhanced AWACS algorithms, the VIEW® system provides drift compensation (meeting UL requirements as a calibrated sensitivity meter), maintenance alert (3 levels), selection of 9 alarm levels and 9 pre-alarm levels, and report of drift compensation used and recent peak values. The system includes a self-learn sensitivity adjustment to set the pre-alarm level just above the peak levels sensed over long periods of time for each detector's actual environment. The system includes multi-detector algorithms (U.S. patent pending) that permit one sensor to consider readings from adjacent sensors to provide faster detection of fires.

### Features

- Very Intelligent Early Warning (VIEW) smoke detection.
- Advanced laser light source and patented optical design.
- ▶ • Sleek low-profile housing (1.66 in. (42 mm) height).



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FSL-751 WITH B210LP BASE (TOP), AND B501 BASE (BOTTOM)

- Analog Addressable communications protocol provides extremely reliable operation proven in millions of worldwide detector installations.
- Sensitivity to 0.03%/foot.
- Rotary DECADE address switches. Set 01 – 159 on FlashScan systems (IQ-318 and IQ-636X-2). These switches allow quick selection of address without resorting to binary switches, special programmers, or bar coding devices.
- Dual bi-color (red/green) LEDs flash green when Normal and are steady red in Alarm.
- Compatible with the IQ-318 and IQ-636X-2 (all software releases).
- Dual LED design provides 360° viewing angle.
- Built-in magnetic test switch, or automatic test commanded from panel.
- Optional relay, isolator, or sounder bases.

### Listings and Approvals\*

UL Listed . . . . .	S1115
ULC Listed** . . . . .	S911
U.S. Coast Guard . . . . .	161.002/A42/1 (IQ-636X)
Factory Mutual (FM) . . . . .	Approved
CSFM . . . . .	7272-0028:218
MEA (NYC) . . . . .	3-02-E

\*Listings and Approvals are under Notifier.

\*\*System Sensor

**Specifications**

Operating voltage range: . . . . . 15 to 28 VDC  
 Maximum standby current: . . . . . 230  $\mu$ A @ 24 VDC  
 (no communication)  
 Maximum average standby current: . . . 255  $\mu$ A @ 24 VDC  
 (one communication every 5 seconds  
 with LED blink enabled)  
 B224RB/B224BI: . . < 700  $\mu$ A @ 24 VDC (includes detector)  
 Maximum alarm current: . . . 6.5 mA @ 24 VDC (LED "ON")  
 Operating humidity range: . . 10% to 93% Relative Humidity,  
 non-condensing  
 Operating temperature range: . . . 0 to 49 °C (32 to 120 °F)  
 Loop resistance: . . . . . 40 ohms maximum  
 Dimensions:

- ▶ Height: . . . . 1.66 in. (42 mm) installed in B210LP base
- ▶ Diameter: . . . 6.1 in. (155 mm) installed in B210LP base;  
 4.1 in. (104 mm) installed in B501 base
- ▶ Weight: . . . 3.6 oz (102 g)

**Bases Available:**

- ▶ B210LP: . . . . . 6.1 in. (155 mm) diameter
- ▶ B501: . . . . . 4.1 in. (104 mm) diameter
- ▶ B200SR(A): . . . . . Sounder Base

**B224RB Relay Base:**

- ▶ Screw terminals: . . . . . Up to 14 AWG (2.00 mm<sup>2</sup>)
- ▶ Relay type: . . . . . Form-C
- ▶ Rating: . . . . . 2 A @ 30 VDC resistive;  
 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive
- ▶ Dimensions: . . . . . 6.2 in. (157 mm) x 1.2 in. (30 mm)

**B224BI Isolator Base:**

- ▶ Dimensions: 6.2 in. (157 mm) x 1.2 in. (30 mm).
- ▶ Maximum: 25 devices between isolator bases

**Recommended Coverage Per Detector**

In order to support sophisticated smoke/dust discrimination algorithms (cooperating multi-detector), it is recommended that at least two FSL-751 detectors be installed in each room or enclosed area.

**Installation**

The FSL-751 plug-in detector uses a separate base to simplify installation, service, and maintenance.

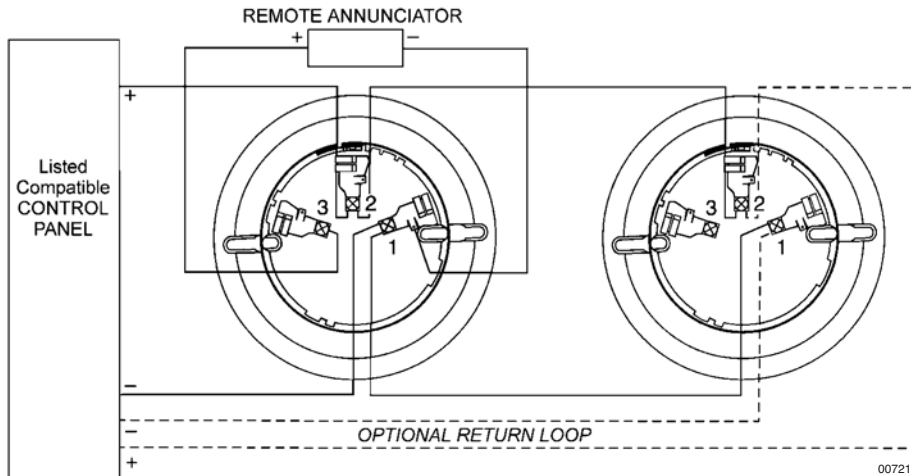
Mount base on a box which is at least 1.5 in. (38.1 mm) deep.

Suitable mounting base boxes include:

- ▶ • 4 in. (102 mm) square box.
- ▶ • 3-1/2 in. (89 mm) or 4 in. (102 mm) octagonal box.
- ▶ • Single-gang box (except relay or isolator base).

**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
433503	FSL-751 Laser Detector. Intelligent laser sensor with FlashScan capabilities. Mounts to one of the bases listed below.	4	(1.8)
437079	FSL-751 Laser Detector (ULC)	4	(1.8)
▶ 438966	B210LP 6 in. (152 mm) Flanged Low-Profile Base	1	(0.45)
437080	B710LPA Low-Profile Base (ULC)	1	(0.45)
417487	B501 European Flangeless Base	1	(0.45)
437081	B501A Flangeless Base (ULC)	1	(0.45)
437438	B200SR Sounder Base	1	(0.45)
437439	B200SRA Sounder Base (ULC)	1	(0.45)
423945	B224RB Intelligent Relay Base	1	(0.45)
426125	B224BI Intelligent Solar Base	1	(0.45)
▶ 438967	Accessory Flange Ring for B210LP Base	1	(0.45)
▶ 417675	M02-04-00 Test Magnet	0.5	(0.2)



**Wiring Diagram  
(standard base)**

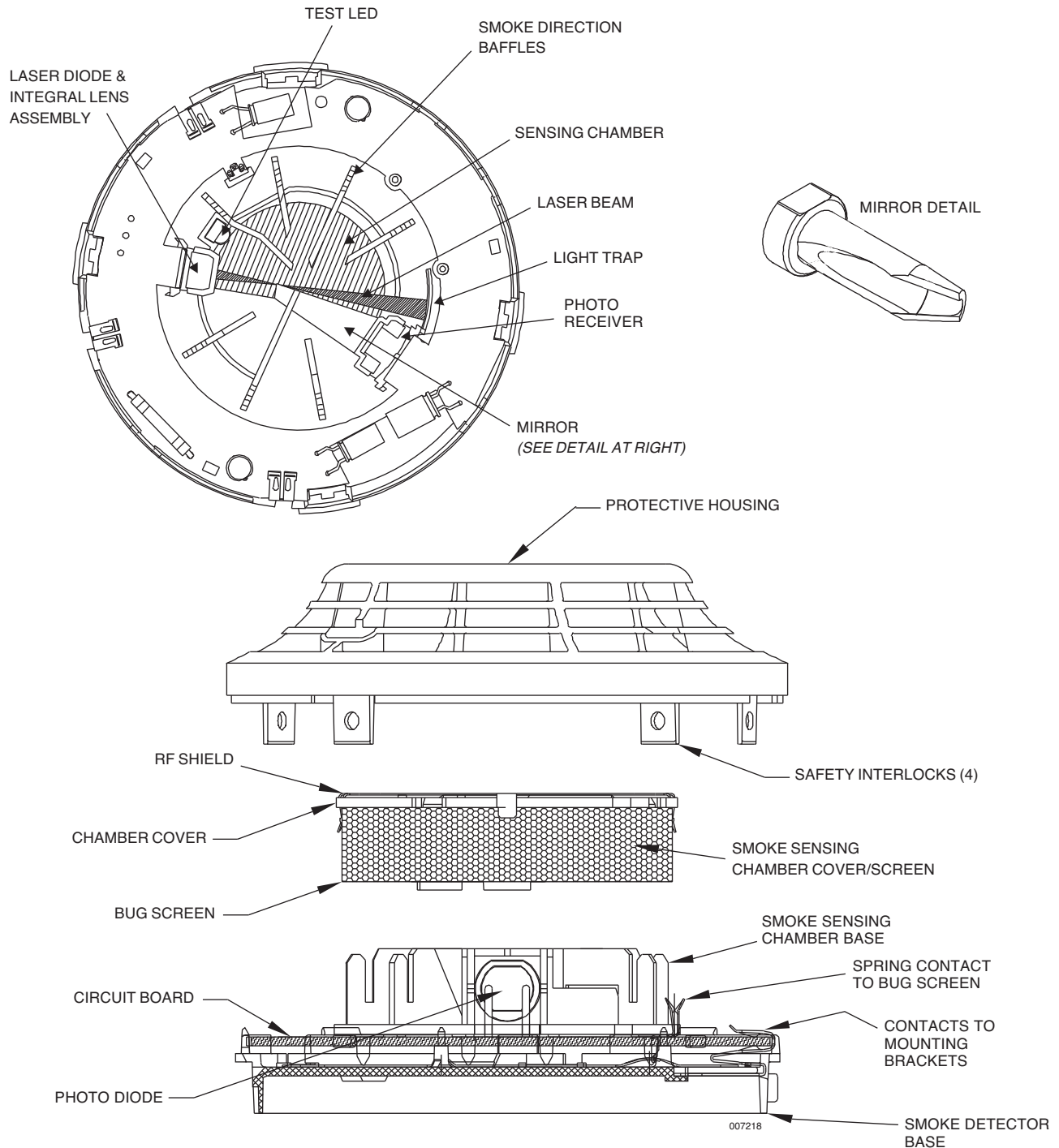
## FSL-751 Design

The FSL-751 incorporates an extremely bright laser diode and integral lens that focuses the light beam to a very small volume near the receiving photo sensor. The light then passes into a light trap and is absorbed. The photo sensor is activated by a scattering of smoke particles in this small-volume light beam.

In a typical photoelectric detector, the light beam is very wide and can reflect off the chamber walls into the photo sensor because dust accumulation changes the wall color from flat black to gray. With the FSL-751, the concentrated light beam does not touch the walls, therefore it is much less susceptible to dust accumulation.

Smoke scatters light in all directions and, in a typical photoelectric detector, only a small portion of that scattered light reaches the photo sensor itself. In the FSL-751, a special mirror reflects and concentrates most of the scattered light into the photo sensor. See laser detail drawings on this page.

Compared to smoke, airborne dust particles are very large and very sparse. Since a) they are in motion; b) the illuminated volume is very small; and c) the FSL-751 flashes the laser only every few seconds; then the occasional dust particle cannot remain in the light volume for more than one or two samples. This transient signal from dust is the key to the dust discrimination performed by VIEW.



AWACS is a trademark and FlashScan and VIEW are registered trademarks of Honeywell International.



## FST-851, FST-851R, and FST-851H Thermal Detectors (IQ-318/IQ-636X-2)

### Features

- State-of-the-art thermistor technology for fast response
- ▶ • Rate-of-rise model (FST-851R), 15 °F (8 °C) per minute
- Factory preset at 135 °F (58 °C) (FST-851, FST-851R)
- High-temperature model FST-851H 190 °F (88 °C)
- Analog-addressable communication
- Direct 01-159 entry of address
- Visible LEDs “blink” every time the unit is addressed
- 360° field viewing angle of the visual alarm indicators (two bicolor LEDs)
- LEDs blink green in Normal condition and turn on steady red in Alarm
- Integral communications and built-in device-type identification
- Compact, stylish design
- Remote test feature from the panel
- Built-in functional test switch activated by external magnet
- Walk test with address display uses a blinking pattern on the detector LED (FlashScan® systems only)
- Low standby current
- Listed UL 521
- Built-in tamper-resistant feature
- Designed for direct-surface or electrical-box mounting
- Sealed against back pressure
- Separate base allows interchange of photoelectric, ionization and thermal sensors
- SEMS screws for wiring of the separate base
- 94-5V plastic flammability rating
- Optional sounder, relay, and isolator bases
- FlashScan communication protocol

### Applications

The FST-851, FST-851R, and FST-851H intelligent thermal detectors are used with the AUTOPULSE IQ-318 and IQ-636X-2 Fire Alarm Systems to measure thermal levels caused by a fire and report the analog level of the thermal measurement to the control panel. The use of analog information provides significant benefits to the end user, installer, and service personnel in ways that are not possible with a conventional type system. Since this detector is addressable, it helps firefighters quickly locate a fire in its early stages.

The detectors are intended for use in commercial, industrial, and institutional buildings. Areas with relatively stable temperatures (no rapid changes) can use the FST-851R with the rate-of-rise feature for a quicker response.

### Description

Each FST detector uses one of 159 possible addresses on a control panel SLC loop. It responds to regular polls from the control panel and it reports its type and status, including the analog level of its heat-sensing elements. If it receives a test command from the panel (or a local magnet test), it stimulates its electronics and reports an alarm analog level. It blinks its LEDs when polled and turns the LEDs on when commanded by the panel (detector blink is optional). The FST detectors offer features and performance that represent the latest in thermal detector technology. The FST-851 and FST-851R can be used to replace the FDX-551, FDX-551R, FST-751, and FST-751R detectors in existing systems.

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel’s CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

The detectors are constructed of Bayblend® in an off-white color. The detector is designed to commercial standards and offers an attractive appearance.

The FST-851, FST-851R, and FST-851H plug-in intelligent thermal detectors use a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector. Mount base on box which is at ▶ least 1.5 in. (38 mm) deep.



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FST-851 with B210LP Base

### Technical Information

- Operating Temperature: . . . . . -4 °F to 100 °F (FST-851, FST-851R). . . . . (-20 °C to 38 °C)
- Operating Temperature (FST-851H):. . . . . -4 °F to 150 °F (-20 °C to 66 °C)
- Operating Humidity Range: . . . . . 10 to 93% relative humidity, noncondensing
- Operating Voltage/Current Range: . . . . . 15 – 28 V (Peak DC), 5 mA current for visible LEDs latched on
- Detector Standby Current: . . . . . 300 µA @ 24 VDC (one communication every 5 seconds with LED blink enabled)
- For bases B224RB or B224BI: . . . . . <700 µA @ 24 VDC (includes detector)
- Sensor: . . . . . electronic, dual thermistors



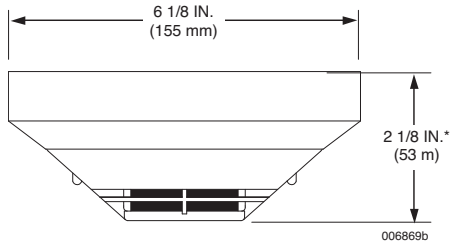
**Technical Information (Continued)**

Fixed Temperature Setpoint: . . . . . 135 °F (57 °C)  
 High-temperature 190 °F (88 °C)

► Rate-of-Rise Option: . . . . . 15 °F (8 °C) per minute  
 Bases Available:

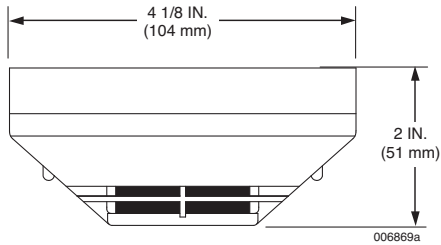
- B210LP: . . . . . 6.1 in. (155 mm) diameter
- B501: . . . . . 4.1 in. (104 mm) diameter
- B200SR(A): . . . . . Sounder Base
- B224RB: . . . . . 6.2 in. dia. x 1.2 in. high (157 mm x 30 mm)
- Relay Type: . . . . . Form-C
- Rating: . . . . . 2.0 A @ 30 VDC resistive  
 0.3 A @ 110 VDC inductive  
 1.0 A @ 30 VDC inductive
- Screw terminals: . . . . . Up to 14 AWG (2.00 mm<sup>2</sup>)
- B224BI: . . . . . 6.2 in. dia. x 1.2 in. high (157 mm x 30 mm)
- Maximum: . . . . . 25 devices between isolator bases

**FST-851, FST-851R, OR FST-851H DETECTOR  
 WITH B210LP, B224RB OR B224BI BASE**



\* ADD 1/4 IN. (6 mm) TO HEIGHT FOR B224RB AND B224BI BASES.

**FST-851, FST-851R, OR FST-851H DETECTOR  
 WITH B501 BASE**



**Mounting Guidelines**

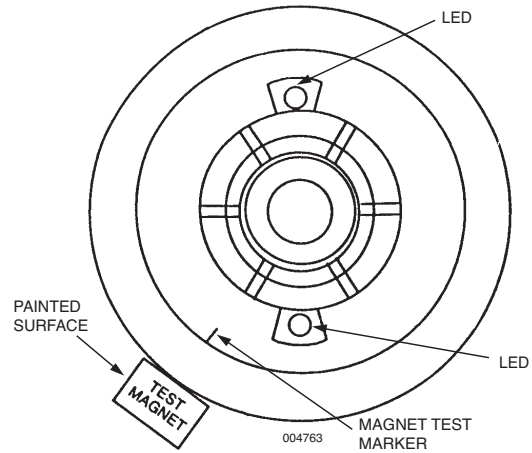
- Mount bases (all types) on a minimum 1.5 in. (38 mm) deep box. Select from the following:
- 3 1/2 in. (89 mm) or 4 in. (102 mm) octagonal box
- single gang box (except relay or isolator base)

**Listings and Approvals\***

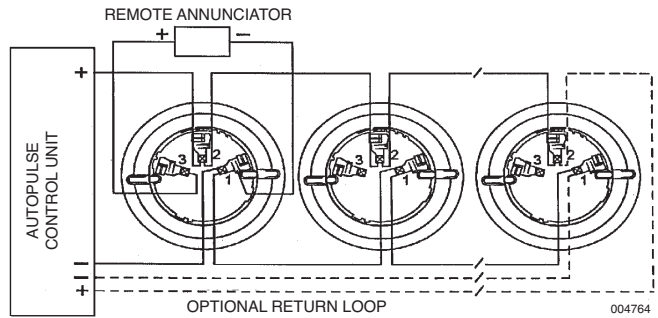
UL . . . . . S747  
 ULC . . . . . CS630  
 CSFM . . . . . 7270-0028:196  
 Factory Mutual (FM) . . . . . Approved  
 MEA (NYC) . . . . . 383-02-E  
 USCG . . . . . 161.002/A42/1

\* Listings and Approvals are under NOTIFIER.

**TEST MAGNET POSITIONING**



**WIRING DIAGRAM**



**Ordering Information**

Part No.	Description	Shipping Weight lb (kg)
432290	FST-851 Intelligent Thermal Detector	1 (0.45)
437076	FST-851A Intelligent Thermal Detector (ULC)	1 (0.45)
432291	FST-851R Rate-of-Rise Intelligent Thermal Detector	1 (0.45)
437077	FST-851RA Rate-of-Rise Intelligent Thermal Detector (ULC)	1 (0.45)
432292	FST-851H High Temperature Intelligent Thermal Detector – 190 °F (88 °C)	1 (0.45)
► 438966	B210LP 6 in. (152 mm) Flanged, Low Profile Base	0.5 (0.2)
417487	B501 European Flangeless Base	1 (0.45)
437438	B200SR Sounder Base	1 (0.45)
437439	B200SRA Sounder Base (ULC)	1 (0.45)
423945	B224RB Intelligent Relay Base	1 (0.45)
426125	B224BI Intelligent Isolator Base	1 (0.45)
417675	M02-04-00 Test Magnet	0.5 (0.2)



## FSI-851 Intelligent Ionization Smoke Detector (IQ-318/IQ-636X-2)

### Features

- Sleek low profile design
- Analog-addressable communication
- Stable communication techniques with noise immunity
- Low standby current
- Rotary 01 to 159 address switches
- Dual LED design provides 360° viewing angle
- Visible bicolor LEDs blink green every time the detector is addressed, and illuminate steady red on alarm
- Walk test with address display (an address of 91 will blink the detector LED: 9-(pause)-1) – FlashScan® systems only
- Built-in functional test switch activated by external magnet
- Optional relay, isolator, or sounder bases
- Listed to UL 268
- FlashScan® communication protocol

### Applications

The FSI-851 is an analog, addressable, low-profile smoke detector designed for the AUTOPULSE IQ-318 and IQ-636X-2 Fire Alarm Control Units.

The addressability of the FSI-851 enables the control unit to provide firefighters with a pinpoint description of where the fire is located. The control unit is capable of not only knowing the detector's location but also exactly how much smoke is in the chamber of the detector. The detector may be set for different sensitivity settings appropriate to the environment of its location.

Analog devices continually send obscuration values to the control unit. These values may be gathered so as to allow the control unit to determine if a detector has accumulated an excessive amount of dirt or dust. A "maintenance" required indication allows the installer to clean the smoke detector before an unwanted false alarm occurs.

### Description

The FSI-851 Intelligent Ionization Sensor incorporates a unique single-source chamber design to respond quickly and dependably to a broad range of fires. The FSI-851 can be used to replace the CPX-751 or FSI-751, in existing systems.

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

### Technical Information

Operating Temperature: . . . 32 °F to 120 °F (0 °C to 49 °C)  
UL Listed Velocity Range: . . 0 – 1200 fpm (0 – 365.76 m/min)  
Relative Humidity: . . . . . 10% to 93% noncondensing  
Voltage Range: . . . . . 15 – 32 volts DC peak  
Standby current: . . 200  $\mu$ A @ 24 VDC (w/o communication);  
300  $\mu$ A @ 24 VDC (one communication every 5 seconds with LED enabled)

LED current (max.): . . . . . 6.5 mA @ 24 VDC (ON)  
Diameter: . . . . . 4.1 in. (104 mm)  
Height: . . . . . 1.69 in. (43 mm)

#### Bases Available:

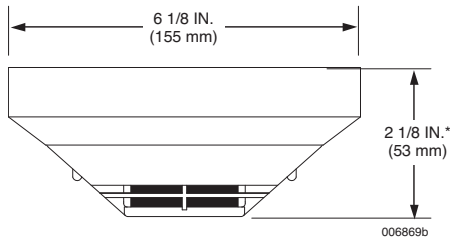
- ▶ B210LP: . . . . . 6.1 in. (155 mm) diameter
- B501: . . . . . 4.1 in. (104 mm) diameter
- B200SR(A): . . . . . Sounder Base
- B224RB: . . . 6.2 in. dia. x 1.2 in. high (157 mm x 30 mm)  
Relay type: . . . . . Form-C  
Rating: . . . . . 2.0 A @ 30 VDC resistive  
0.3 A @ 110 VDC inductive  
1.0 A @ 30 VDC inductive
- Screw terminals: . . . . . Up to 14 AWG (2.00 mm<sup>2</sup>)
- B224BI: . . . 6.2 in. dia. x 1.2 in. high (157 mm x 30 mm)  
Maximum: . . . . . 25 devices between isolator bases



FSI-851 with B210LP Base

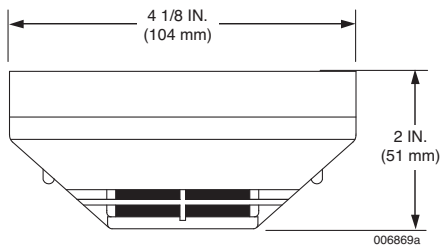
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► FSI-851 DETECTOR WITH B210LP, B224RB OR B224BI BASE



\* ADD 1/4 IN. (6 mm) TO HEIGHT FOR B224RB AND B224BI BASES.

FSI-851 DETECTOR WITH B501 BASE



**Mounting Guidelines**

The FSI-851 plug-in detectors use a separate base to simplify installation, service, and maintenance.

► Mount base on a box which is at least 1.5 in. (38 mm) deep. Suitable mounting base boxes include:

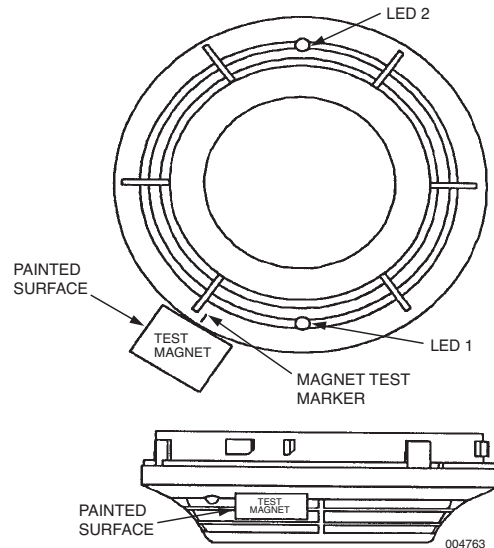
- B224RB or B224BI 3 1/2 in. (89 mm) square box
- Remaining bases 4 in. (102 mm) square box
- 3 1/2 in. (89 mm) or 4 in. (102 mm) octagonal box
- Single-gang box (except relay or isolator bases)

**Listings and Approvals\***

UL . . . . .	S1115
ULC. . . . .	CS308
Factory Mutual (FM) . . . . .	Approved
California State Fire Marshal (CSFM) . . . . .	7271-0028:201
MEA (NYC). . . . .	321-02-E
USCG . . . . .	161.002/A42/1

\* Listings and Approvals are under NOTIFIER

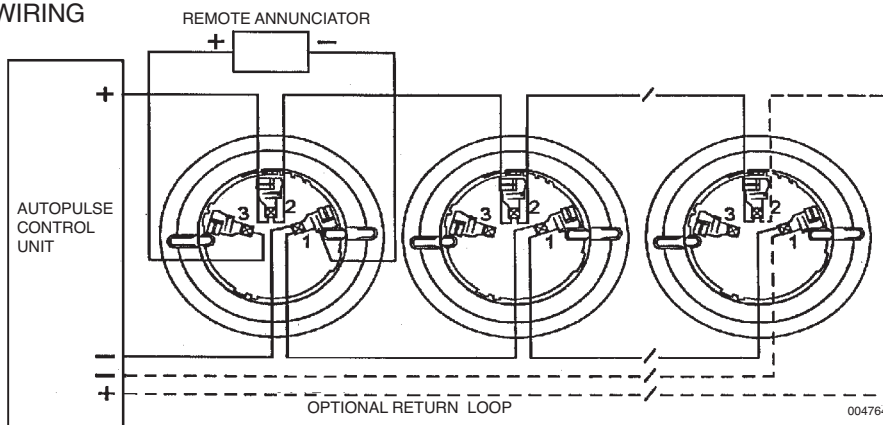
TEST MAGNET POSITIONING



**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
432287	FSI-851 Intelligent Ionization Smoke Detector	1	(0.45)
437073	FSI-851A Intelligent Ionization Smoke Detector (ULC)	1	(0.45)
► 438966	B210LP 6 in. (152 mm) Flanged Low-Profile Base	1	(0.45)
417487	B501 European Flangeless Base	1	(0.45)
437438	B200SR Sounder Base	1	(0.45)
437439	B200SRA Sounder Base (ULC)	1	(0.45)
423945	B224RB Intelligent Relay Base	1	(0.45)
426125	B224BI Intelligent Isolator Base	1	(0.45)
► 438967	Accessory Flange Ring for B210LP Base	1	(0.45)
► 417675	M02-04-00 Test Magnet	0.5	(0.2)

**WIRING**



FlashScan is a registered trademark of Honeywell International.

# Detection and Control Components



## FAPT-851 Acclimate Plus™ Multi-Sensor Low-Profile Intelligent Detector (IQ-318/IQ-636X-2)

### Features

- Automatically adjusts sensitivity levels without the need for operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based, combination photo and thermal technology.
- Compatible with FlashScan® systems
- Sleek, low-profile design.
- Rotary, decimal addressing 1 – 159 on FlashScan systems.
- Addresses can be viewed and changed without the need for electronic programmers.
- Dual bi-color LED design provides 360° viewing angle.
- LEDs lock RED when in Alarm. In FlashScan, LEDs flash GREEN in Standby for normal condition.
- Several base options, including relay, isolator, and sounder.
- Built-in functional test switch activated by external magnet.
- Listed to UL 268.
- Capable of heat-only alarm mode, enabled by a special command from the panel. Smoke alarms are ignored.
- ▶ • Low-temperature signal at 45 °F (7 °C) +/- 10 °F (-12 °C).

### Applications

The FAPT-851 Acclimate Plus™ detector is an intelligent, addressable, multi-sensing, low-profile detector designed for use on the AUTOPULSE IQ-318 or IQ-636X-2 control panel.

The Acclimate Plus detector uses a combination of photo-electric and thermal sensing technologies that are designed to increase immunity to false alarms. Unlike traditional intelligent detectors, the Acclimate Plus detector has a micro-processor in the detector head that processes alarm data. As a result, the Acclimate Plus detector adjusts its sensitivity automatically, without needing operator intervention.

Areas where the Acclimate Plus detector is especially useful include office complexes, schools, college campuses, manufacturing and industrial facilities, and anywhere else the use of a particular area may change. One day a conference room, tomorrow a kitchen, the next day a copy machine room – the Acclimate Plus detector automatically adjusts its sensitivity to the environment.

### Technical Information

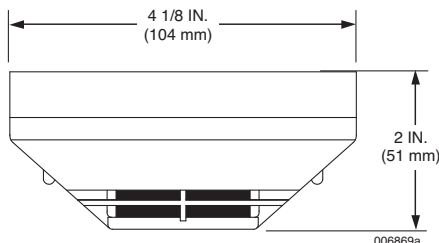
Voltage Range: . . . . . 15 to 32 volts DC peak  
 Standby Current: . . . . . 360  $\mu$ A @ 24 VDC  
 LED Current: . . . . . 6.5 mA @ 24 VDC (“ON”)  
 Loop Resistance: . . . . . 40 ohms maximum  
 Diameter: . . . . . 4.0 in. (102 mm)  
 Height: . . . . . 1.69 in. (43 mm)  
 Weight: . . . . . 5.2 oz (147 g)  
 Temperature: . . . . . 32 °F to 100 °F (0 °C to 38 °C)  
 Relative Humidity: . . . . . 10% – 93% non-condensing  
 Thermal Sensor: . . . . . 135 °F (57 °C) (fixed)  
 UL Listed Velocity Range . . . . . 0-4000 ft/min (0-1219 m/min)



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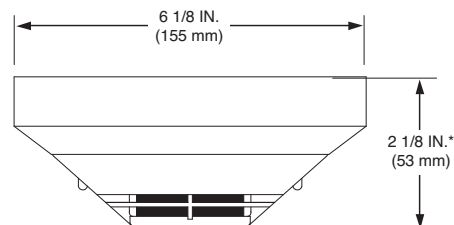
FAPT-851 with B210LP Base

FAPT-851 DETECTOR WITH  
B501 BASE



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FAPT-851 DETECTOR WITH  
▶ B210LP, B224RB OR B224BI BASE



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\* ADD 1/4 IN. (6 mm) TO HEIGHT FOR B224RB AND B224BI BASES.



## Installation

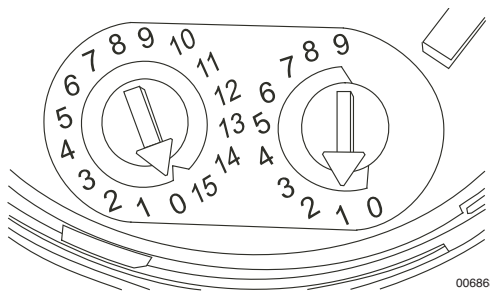
The FAPT-851 plug-in detector uses a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug-in and remove detectors without using a ladder. Mount base on a box at least 1.5 in. (38 mm) deep. Suitable mounting base boxes include:

- ▶ • 3.5 in. (89 mm) or 4.0 in. (102 mm) octagonal box
- Single-gang box (except relay or isolator base)
- ▶ • With B224RB or B224BI base, use a 3.5 in. (89 mm) octagonal box, or a 4.0 in. (102 mm) octagonal or square box

**Notes:** 1) Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring “T-taps” or branches are permitted for Style 4 (Class B) wiring. 2) When using relay or sounder bases, consult data sheet F-9587 (ISO-X) for device limitations between isolator modules and isolator bases.

**Application Note:** The FAPT-851 detector has the unique ability to adjust sensitivity according to the environment, based on heat and smoke levels. Avoid installing these detectors in locations that are susceptible to rapid and high temperature changes. An example of an incorrect application would be near or in line with the output of a self-contained heater.

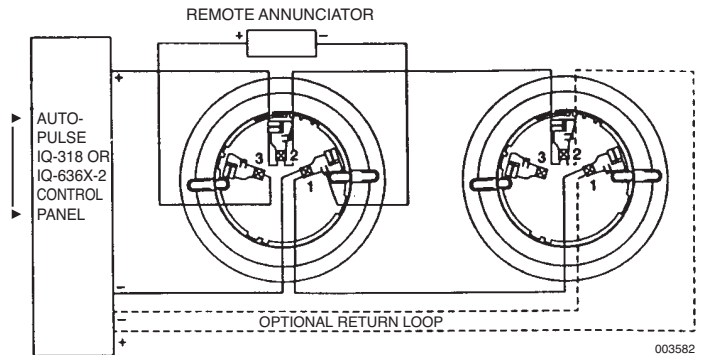
## Address Dial on Back of Detector



### Bases:

- ▶ B210LP: . . . . . 6.1 in. (155 mm) diameter
- B501: . . . . . 4.1 in. (104 mm) diameter
- B200SR(A): . . . . . Sounder Base
- B224RB: . . . . . 6.2 in. dia. x 1.2 in. high (157 x 30 mm)
- Relay type: . . . . . Form-C
- Rating: . . . . . 2.0 A @ 30 VDC resistive  
0.3 A @ 110 VDC inductive  
1.0 A @ 30 VDC inductive
- Screw terminals: . . . . . Up to 14 AWG (2.00 mm<sup>2</sup>)
- B224BI Isolator: . . . . . 6.2 in. x 1.2 in. (157 x 30 mm)
- Maximum: . . . . . 25 devices between isolator bases

## Wiring Diagram (Standard Base)



## Listings and Approvals\*

UL . . . . .	S1115
ULC . . . . .	S911**
Factory Mutual (FM) . . . . .	Approved
California State Fire Marshal (CSFM) . . . . .	7272-0028:206
MEA (NYC) . . . . .	225-02-E
Maryland State Fire Marshal . . . . .	Permit #2122
UL Listed for In-Duct Applications	

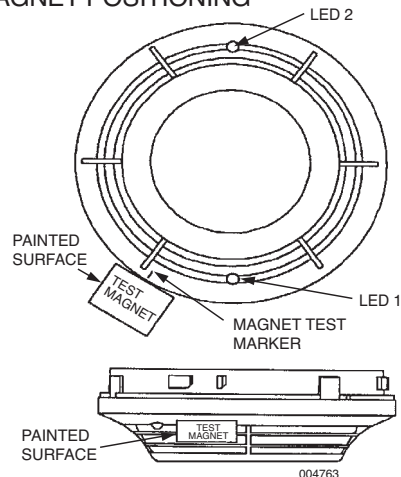
\*Listings and Approvals are under NOTIFIER.

\*\*System Sensor

## Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
432293	FAPT-851 Low-Profile Smoke Detector	0.5	(0.23)
437078	FAPT-851A Low Profile Smoke Detector (ULC)	0.5	(0.23)
▶ 438966	B210LP 6 in. (152 mm) Flanged Low Profile Base	1	(0.45)
▶ 417487	B501 European Flangeless Base	1	(0.45)
437438	B200SR Sounder Base	1	(0.45)
437439	B200SRA Sounder Base (ULC)	1	(0.45)
423945	B224RB Intelligent Relay Base	2	(0.9)
426125	B224BI Intelligent Isolator Base	2	(0.9)
417675	M02-04-00 Test Magnet	0.5	(0.23)

## TEST MAGNET POSITIONING



FlashScan® is a registered trademark and Acclimate Plus™ are trademarks of Honeywell International.



## FSP-851 Intelligent Photoelectric Smoke Detector (IQ-318/IQ-636X-2)

### Features

- Sleek low profile design
- Analog-addressable communication
- Stable communication technique with noise immunity
- Low standby current
- Rotary 01 to 159 address switches
- Dual LED design provides 360° viewing angle
- Visible bicolor LEDs blink green every time the detector is addressed; illuminate steady red on alarm
- Walk test with address display (an address of 91 will blink the detector LED: 9-(pause)-1) (FlashScan® systems only)
- Built-in functional test switch activated by external magnet
- Optional relay, isolator, or sounder bases
- Listed to UL 268
- FlashScan® communication protocol

### Applications

The FSP-851 is an analog, addressable, low-profile smoke detector designed for the AUTOPULSE IQ-318 and IQ-636X-2 Fire Alarm Control Units.

The addressability of the FSP-851 detector enables the control unit to provide firefighters with a pinpoint description of where the fire is located. The control unit is capable of not only knowing the detector's location but also exactly how much smoke is in the chamber of the detector. The detector may be set for different sensitivity settings appropriate to the environment of its location.

Analog devices continually send obscuration values to the AUTOPULSE control unit. These values may be gathered so as to allow the control unit to determine if a detector has accumulated an excessive amount of dirt or dust. A "maintenance" required indication allows the installer to clean the smoke detector before an unwanted false alarm occurs.

### Description

The FSP-851 Intelligent Photoelectric Sensor's unique optical sensing chamber is designed with superior signal to noise ratio. The optical chamber is engineered to sense the presence of smoke produced by a wide range of combustion sources. The FSP-851 can be used to replace the SDX-751 or FSP-751 in existing systems.

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

### Technical Information

Operating Temperature: . . . . . 32 °F to 120 °F (0 °C to 49 °C)  
 UL Listed Velocity Range: . . . 0 – 4000 fpm (0 – 20.32 m/sec)  
 Relative Humidity: . . . . . 10% to 93% noncondensing  
 Voltage Range: . . . . . 15 – 32 volts DC peak  
 Standby Current: . . 250  $\mu$ A @ 24 VDC (w/o communication);  
 360  $\mu$ A @ 24 VDC (one communication every 5 seconds with LED enabled)

LED Current (max.): . . . . . 6.5 mA @ 24 VDC (ON)

Diameter: . . . . . 4.1 in. (104 mm)

Height: . . . . . 1.69 in. (43 mm)

Bases Available:

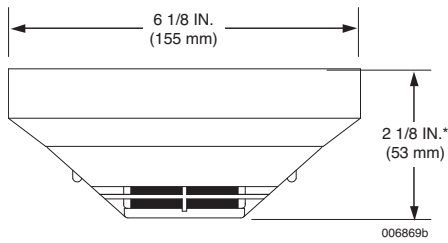
- ▶ B210LP: . . . . . 6.1 in. (155 mm) diameter
- B501: . . . . . 4.1 in. (104 mm) diameter
- B200SR(A): . . . . . Sounder Base
- B224RB: . . . 6.2 in. dia. x 1.2 in. high (157 mm x 30 mm)  
 Relay type: . . . . . Form-C  
 Rating: . . . . . 2.0 A @ 30 VDC resistive  
 0.3 A @ 110 VDC inductive  
 1.0 A @ 30 VDC inductive
- Screw terminals: . . . . . Up to 14 AWG (2.00 mm<sup>2</sup>)
- B224BI: . . . 6.2 in. dia. x 1.2 in. high (157 mm x 30 mm)  
 Maximum: . . . . . 25 devices between isolator bases



▶ **FSP-851 with B210LP Base**

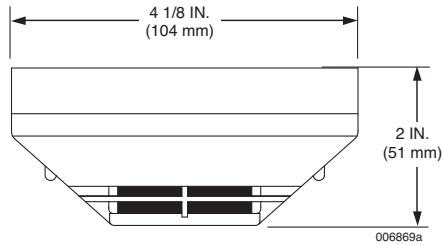
006878

► FSP-851 DETECTOR WITH B210LP, B224RB OR B224BI BASE



\* ADD 1/4 IN. (6 mm) TO HEIGHT FOR B224RB AND B224BI BASES.

FSP-851 DETECTOR WITH B501 BASE

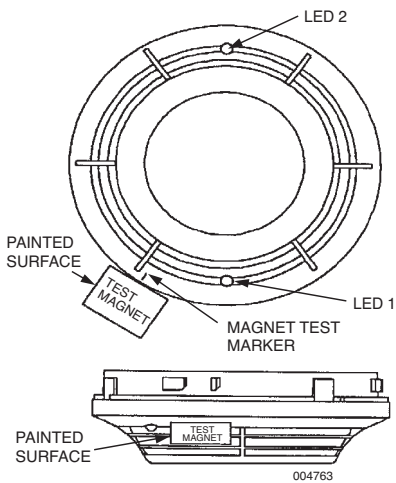


**Mounting Guidelines**

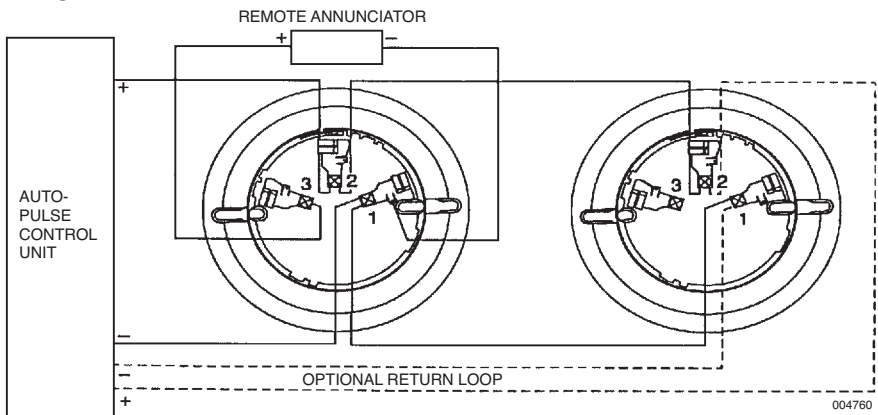
The FSP-851 plug-in detectors use a separate base to simplify installation, service, and maintenance.

- Mount base on a box which is at least 1.5 in. (38 mm) deep. Suitable mounting base boxes include:
  - B224RB or B224BI 3 1/2 in. (89 mm) square box
  - Remaining bases 4 in. (102 mm) square box
  - 3 1/2 in. (89 mm) or 4 in. (102 mm) octagonal box
  - Single-gang box (except relay or isolator bases)

**TEST MAGNET POSITIONING**



**WIRING**



**Listings and Approvals\***

UL . . . . .	S1115
ULC . . . . .	S1115
Factory Mutual (FM) . . . . .	Approved
California State Fire Marshal (CSFM) . . . . .	7272-0028:206
MEA (NYC) . . . . .	225-02-E
Maryland State Fire Marshal . . . . .	Permit #2122
UL Listed for In-Duct Applications	
USCG . . . . .	161.002/A42/1

\* Listings and Approvals are under NOTIFIER.

**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
432288	FSP-851 Intelligent Photoelectric Smoke Detector	1	(0.45)
437074	FSP-851A Intelligent Photoelectric Smoke Detector (ULC)	1	(0.45)
► 438966	B210LP 6 in. (152 mm) Flanged Low-Profile Base	1	(0.45)
417487	B501 European Flangeless Base	1	(0.45)
437438	B200SR Sounder Base	1	(0.45)
437439	B200SRA Sounder Base (ULC)	1	(0.45)
423945	B224RB Intelligent Relay Base	1	(0.45)
426125	B224BI Intelligent Isolator Base	1	(0.45)
► 438967	Accessory Flange Ring for B210LP Base	1	(0.45)
417675	M02-04-01 Test Magnet	0.5	(0.2)

FlashScan is a registered trademark of Honeywell International.



## FSP-851T Intelligent Thermal/Photoelectric Smoke Detector (IQ-318/IQ-636X-2)

### Features

- Sleek low profile design
- Analog-addressable communication
- Stable communication technique with noise immunity
- Low standby current
- Rotary 01 to 159 address switches
- Dual LED design provides 360° viewing angle
- Visible bicolor LEDs blink green every time the detector is addressed; illuminate steady red on alarm
- Walk test with address display (an address of 91 will blink the detector LED: 9-(pause)-1) (FlashScan® systems only)
- Built-in functional test switch activated by external magnet
- Optional relay, isolator, or sounder bases
- Listed to UL 268
- FlashScan communication protocol

### Applications

The FSP-851T is an analog, addressable, low-profile smoke/heat detector designed for the AUTOPULSE IQ-318 and IQ-636X-2 Fire Alarm Control Unit.

The FSP-851T photoelectric includes a built-in thermal detection device. If either condition (smoke or heat) is detected, the device will alarm.

The addressability of the FSP-851T detector enables the control unit to provide firefighters with a pinpoint description of where the fire is located. The control unit is capable of not only knowing the detector's location but also exactly how much smoke is in the chamber of the detector. The detector may be set for different sensitivity settings appropriate to the environment of its location.

Analog devices continually send obscuration values to the AUTOPULSE control unit. These values may be gathered so as to allow the control unit to determine if a detector has accumulated an excessive amount of dirt or dust. A "maintenance" required indication allows the installer to clean the smoke detector before an unwanted false alarm occurs.

### Description

The FSP-851T Intelligent Photoelectric Sensor's unique optical sensing chamber is designed with superior signal to noise ratio. The optical chamber is engineered to sense the presence of smoke produced by a wide range of combustion sources. The FSP-851T can be used to replace the FSP-751T, FDX-751T or SDX-551TH in existing systems.

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

### Technical Information

Operating Temperature: . . . 32 °F to 100 °F (0 °C to 38 °C)  
 UL Listed Velocity Range: . . 0 – 4000 fpm (0 – 20.32 m/sec)  
 Relative Humidity: . . . . . 10% to 93% noncondensing  
 Voltage Range: . . . . . 15 – 32 volts DC peak  
 Standby Current: . 250  $\mu$ A @ 24 VDC (w/o communication);  
 360  $\mu$ A @ 24 VDC (one communication every 5 seconds with LED enabled)

LED Current (max.): . . . . . 6.5 mA @ 24 VDC (ON)  
 Diameter: . . . . . 4.1 in. (104 mm)  
 Height: . . . . . 1.66 in. (42 mm)

#### Bases Available:

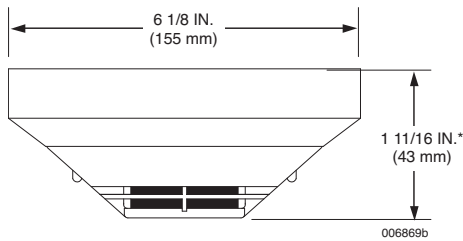
- ▶ B210LP: . . . . . 6.1 in. (155 mm) diameter
- B501: . . . . . 4.1 in. (104 mm) diameter
- B200SR(A): . . . . . Sounder Base
- B224RB: . . . 6.2 in. dia. x 1.2 in. high (157 mm x 30 mm)  
 Relay type: . . . . . Form-C  
 Rating: . . . . . 2.0 A @ 30 VDC resistive  
 0.3 A @ 110 VDC inductive  
 1.0 A @ 30 VDC inductive
- Screw terminals: . . . . . Up to 14 AWG (2.00 mm<sup>2</sup>)
- B224BI: . . . 6.2 in. dia. x 1.2 in. high (157 mm x 30 mm)  
 Maximum: . . . . . 25 devices between isolator bases



FSP-851T with B210LP Base

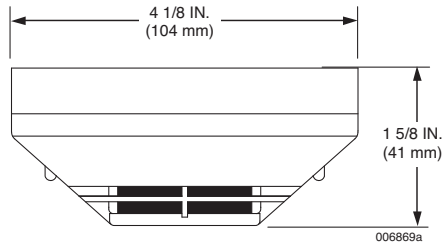
006879

► FSP-851T DETECTOR WITH B210LP, B224RB OR B224BI BASE



\* ADD 1/4 IN. (6 mm) TO HEIGHT FOR B224RB AND B224BI BASES.

FSP-851T DETECTOR WITH B501 BASE

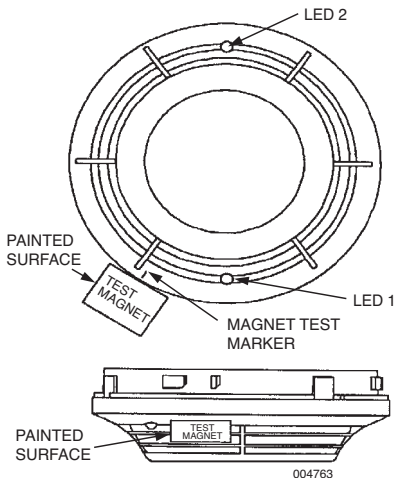


**Mounting Guidelines**

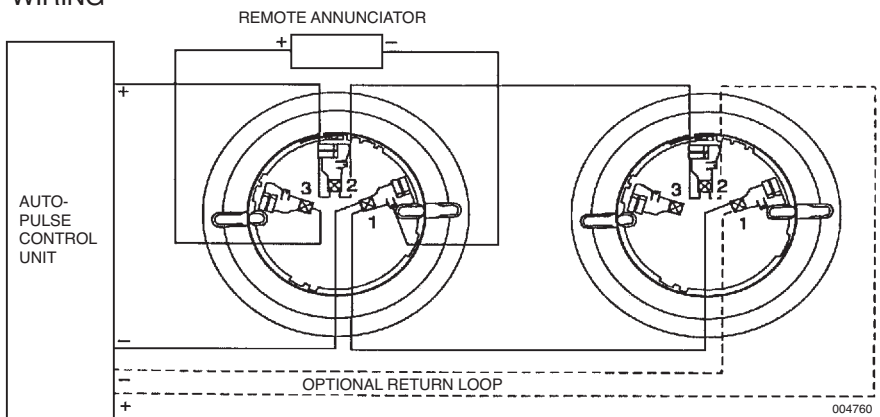
The FSP-851 plug-in detectors use a separate base to simplify installation, service, and maintenance.

- Mount base on a box which is at least 1.5 in. (38 mm) deep. Suitable mounting base boxes include:
  - B224RB or B224BI 3 1/2 in. (89 mm) square box
  - Remaining bases 4 in. (102 mm) square box
  - 3 1/2 in. (89 mm) or 4 in. (102 mm) octagonal box
  - Single-gang box (except relay or isolator bases)

**TEST MAGNET POSITIONING**



**WIRING**



**Listings and Approvals\***

UL . . . . .	S1115
ULC . . . . .	S1115
Factory Mutual (FM) . . . . .	Approved
California State Fire Marshal (CSFM) . . . . .	7272-0028:206
MEA (NYC) . . . . .	225-02-E
Maryland State Fire Marshal . . . . .	Permit #2122
UL Listed for In-Duct Applications	
USCG . . . . .	161.002/A42/1

\* Listings and Approvals are under NOTIFIER.

**Ordering Information**

Part No.	Description	Shipping Weight lb (kg)
432289	FSP-851T Intelligent Thermal Photoelectric Smoke Detector	1 (0.45)
437075	FSP-851TA Intelligent Thermal Photoelectric Smoke Detector	1 (0.45)
► 438966	B210LP 6 in. (152 mm) Flanged Low-Profile Base	1 (0.45)
417487	B501 European Flangeless Base	1 (0.45)
437438	B200SR Sounder Base	1 (0.45)
437439	B200SRA Sounder Base (ULC)	1 (0.45)
423945	B224RB Intelligent Relay Base	1 (0.45)
426125	B224BI Intelligent Isolator Base	1 (0.45)
► 438967	Accessory Flange Ring for B210LP Base	1 (0.45)
417675	M02-04-00 Test Magnet	0.5 (0.2)

FlashScan is a registered trademark of Honeywell International.





## InnovairFlex Intelligent Non-Relay Photoelectric Duct Smoke Detector (IQ-318/IQ-636X-2)

### General

The InnovairFlex DNR intelligent non-relay photoelectric duct smoke detector and DNRW watertight non-relay photoelectric duct smoke detector feature a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct.

DNRW duct smoke detector, with its NEMA-4 rating, is listed as a watertight, UV resistant enclosure providing protection against falling dirt, rain, windblown dust, splashing and hose-directed water, allowing operators to use the detector in the most extreme environments.

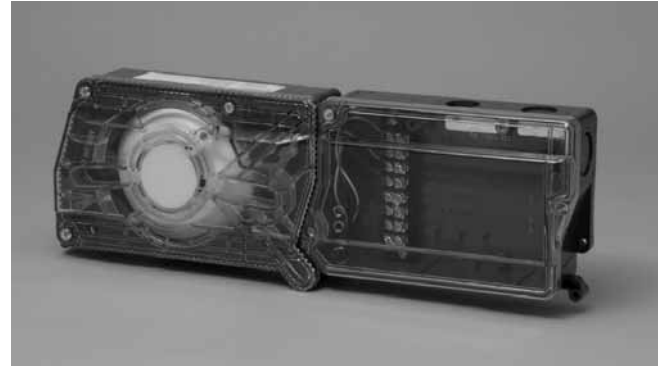
These units sense smoke in the most challenging conditions, operating in airflow speeds of 100 to 4,000 ft (30.5 to 1219.2 m) per minute, temperatures of  $-4^{\circ}\text{F}$  to  $158^{\circ}\text{F}$  ( $-30^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ ), and a humidity range of 0 to 95 percent (non-condensing.)

An improved cover design isolates the sensor head, which allows for ease of maintenance. A cover tamper feature indicates a trouble signal for a removed or improperly installed sensor cover. The InnovairFlex housing provides a 3/4-inch conduit knockout and ample space to facilitate easy wiring and mounting of a relay module.

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.

### Features

- 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/s)
- Versatile mounting options: square or rectangular configuration
- Broad ranges for operating temperature ( $-4^{\circ}\text{F}$  to  $158^{\circ}\text{F}$  ( $-30^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ )) and humidity (0% to 95% non-condensing)
- Patented sampling tube installs from front or back of the detector with no tools required
- Cover tamper signal
- Increased wiring space with a newly added 3/4 in. conduit knockout
- Available space within housing to accommodate mounting of a relay module
- Easily accessible code wheels on sensor head (sold separately)
- Clear cover for convenient visual inspection
- Remote testing capability



008588

- Requires com line power only
- Accommodates the installation of an addressable relay module, sold separately (FRM-1), for applications requiring a Form-C relay

### Specifications

- ▶ Size: (Rectangle) 14.38 in. (365 mm) Length; 5 in. (127 mm) Width, 2.5 in. (64 mm) Depth
- ▶ Size: (Square) 7.75 in. (197 mm) Length; 9 in. (229 mm) Width; 2.5 in. (64 mm) Depth
- ▶ Weight: 1.6 lb (0.73 kg)
- ▶ Operating Temperature Range:  $-4^{\circ}\text{F}$  to  $158^{\circ}\text{F}$  ( $-20^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ )
- ▶ Storage Temperature Range:  $-22^{\circ}\text{F}$  to  $158^{\circ}\text{F}$  ( $-30^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ )
- ▶ Operating Humidity Range: 0% to 95% relative humidity (noncondensing)
- ▶ Air Duct Velocity: 100 to 4,000 ft/min (0.5 to 20.32 m/s)

### Accessories

The AUTOPULSE Addressable line provides system flexibility with a variety of accessories, including two remote test stations and different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detectors accessories are UL listed.

DNRWs with a date code of 0013 or higher do not require external 24VDC for remote test applications when used with a remote-test-capable detector.

## Agency Listings and Approvals\*

Consult product manual for lists of compatible UL-Listed devices. 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 Listed . . . . .S911  
 ULC Listed . . . . .S911  
 CFSM Listed . . . . .3242-1653:209

\* Listings and Approvals are under Notifier.

## Ordering Information

**Note:** “A or “CDN” suffix indicates ULC listed model.

DNR(A): Intelligent non-relay photoelectric low flow smoke detector housing. Requires photoelectric smoke detector (sold separately).

DNRW: Watertight intelligent non-relay photoelectric low flow duct smoke detector housing. Requires photoelectric smoke detector (sold separately). NEMA-4.

FSP-851: Addressable low-profile photoelectric smoke detector.

FSP-851R: Remote test capable addressable low-profile photoelectric smoke detector.

DCOIL: Remote test coil. Required for older DNRW duct detector housing.

DST1(A): Metal sampling tube duct width up to 1 ft (0.3 m)

DST1.5(A): Metal sampling tube duct widths of 1 ft to 2 ft (0.3 to 0.6 m)

DST3(A): Metal sampling tube duct widths of 2 ft to 4 ft (0.6 to 1.2 m)

DST5(A): Metal sampling tube duct widths of 4 ft to 8 ft (1.2 to 2.4 m)

DST10(A): Metal sampling tube duct widths of 8 ft to 12 ft (2.4 to 3.7 m)

M02-04-00: Test magnet

P48-21-00: End cap for metal sampling tubes

RA100Z(A): Remote annunciator alarm LED

RTS151(A): Remote test station

## Important Notes

- DNRW duct detector housings with a date code of 0013 or higher do not require a DCOIL or auxiliary 24 VDC for remote test applications when used with a remote test capable detector.
- DNRW duct detector housings with a date code of 0012 or earlier require a DCOIL and auxiliary 24 VDC power for remote test applications.

Part No.	Description	Shipping Weight	
		lb	(kg)
436969	DNR(A) Intelligent Non-Relay Photoelectric Duct Smoke Detector Housing	1.5	(0.7)
436970	DNRW Watertight Intelligent Non-Relay Photoelectric Duct Smoke Detector Housing	1.5	(0.7)
432288	FSP-851 Addressable Photoelectric Smoke Detector	1	(0.5)
437636	FSP-851R Remote Test Capable Addressable Photoelectric Smoke Detector	1	(0.5)
437019	DCOIL Remote Test Coil	0.5	(0.2)
436964	DST1(A) Metal sampling tube – Duct width up to 1 ft (0.3m)	0.5	(0.2)
436965	DST1.5(A) Metal sampling tube – Duct widths of 1 ft to 2 ft (0.3 to 0.6 m)	0.5	(0.2)
436966	DST3(A) Metal sampling tube – Duct widths of 2 ft to 4 ft (0.6 to 1.2 m)	1	(0.5)
436967	DST5(A) Metal sampling tube – Duct widths of 4 ft to 8 ft (1.2 to 2.4 m)	1.5	(0.7)
436968	DST10(A) Metal sampling tube – Duct widths of 8 ft to 12 ft (2.4 to 3.7 m)	3	(1.4)
417675	M02-04-00 Test Magnet	0.5	(0.2)
437633	P48-21-00 End Cap for metal sampling tubes	0.1	(0.04)
436971	RA100Z(A) Remote Annunciator Alarm LED	0.5	(0.2)
436972	RTS151(A) Remote Test Station	0.5	(0.2)



## XP6-MA Six Zone Interface Module (IQ-318/IQ-636X-2)

### General

The XP6-MA six-zone interface module provides an interface between the intelligent alarm system and a two-wire conventional detection zone. A common SLC input is used for all modules, and the initiating device circuits share a common external supervisory supply and ground. Otherwise, each module operates independently from the others.

The first module is addressed from 01 to 154 while the remaining modules are automatically assigned to the next five higher addresses. Provisions are included for disabling a maximum of two unused modules. All two-wire detectors being monitored must be two-wire-compatibility-listed with the modules. The XP6-MA transmits the status of a zone of two-wire detectors to the fire alarm control panel. Status conditions are reported as normal, open, or alarm. The interface module supervises the zone of detectors and the connection of the external power supply.

Each XP6-MA module has panel-controlled bicolor LED indicators. The panel can cause the LEDs to blink, latch on, or latch off.

### Features

- Six addressable Class B or three addressable Class A initiating device circuits.
- Removable 12 AWG (3.1 mm<sup>2</sup>) to 18 AWG (0.78 mm<sup>2</sup>) plugin terminal blocks.
- Status indicators for each point.
- Up to two unused addresses may be disabled.
- Rotary address switches.
- Class A or Class B operation.
- FlashScan® or CLIP operation.
- Mount one or two modules in a BB-XP cabinet (optional).
- Mount up to six modules on a CHS-6 chassis in a CAB-4 Series or BB-25 cabinet (optional).
- Mounting hardware included.

### Specifications

Standby current: 2.0 mA (SLC current draw with all addresses used; if some addresses are disabled, the standby current decreases).

Alarm current: 40 mA (assumes all six LEDs solid ON).

Temperature range: 32 °F to 120 °F (0 °C to 49 °C).

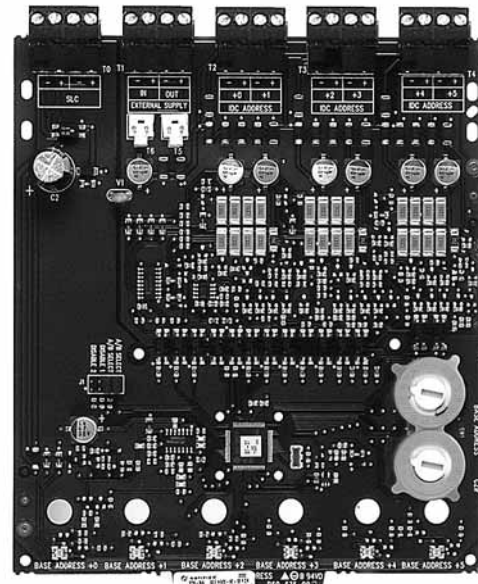
Humidity: 10% to 85% noncondensing.

- ▶ Dimensions: 6.8 in. (173 mm) high x 5.8 in. (147 mm) wide x 1.25 in. (32 mm) deep.

Shipping weight: 1.1 lb (0.5 kg) including packaging.

Mounting options: CHS-6 chassis, BB-25 cabinet, or CAB-4 Series cabinet.

Wire gauge: 12 AWG (3.1 mm<sup>2</sup>) to 18 AWG (0.78 mm<sup>2</sup>).



008586

XP6-MA is shipped in Class B position: Remove shunt for Class A operation.

Maximum SLC wiring resistance: 40 or 50 ohms, panel dependent.

Maximum IDC wiring resistance: 25 ohms.

External supply voltage: DC voltage: 18 – 28 volts powerlimited. Ripple voltage: 0.1 Vrms maximum. External supply current: 90 mA maximum per address in alarm. In Class B operation, 540 mA maximum for all six addresses in alarm. In Class A operation, 270 mA maximum for all three addresses in alarm.

Compatible detectors: See the Device Compatibility document.

### 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 . . . . .S635

ULC Listed . . . . .S635 (XP6-MAA)

MEA Listed . . . . .386-02-E

FM . . . . .Approved

CSFM . . . . .7300-0028:219

City of Chicago

City of Denver

## Ordering Information

XP6-MA: Six-zone conventional-detector interface module.

XP6-MAA: Same as above with ULC Listing.

BB-XP: Optional cabinet for one or two modules.

Dimensions, DOOR: 9.23 in. (234 mm) wide (9.5 in. (241 mm) including hinges), x 12.22 in. (310 mm) high, x 0.67 in. (17 mm) deep; BACKBOX: 9.0 in. (229 mm) wide (9.25 in. (235 mm) including hinges), x 12.0 in. (305 mm) high x 2.75 in. (70 mm); CHASSIS (installed): 7.15 in. (182 mm) wide overall x 7.31 in. (186 mm) high interior overall x 2.16 in. (55 mm) deep overall.

BB-25: Optional cabinet for up to six modules mounted on CHS-6 chassis (below). Dimensions, DOOR: 24.0 in. (610 mm) wide x 12.63 in. (321 mm) high, x 1.25 in. (32 mm) deep, hinged at bottom; BACKBOX: 24.0 in. (610 mm) wide x 12.55 in. (319 mm) high x 5.22 in. (133 mm) deep.

CHS-6: Chassis, mounts up to six modules in a CAB-4 Series cabinet, or BB-25 cabinet.

Part No.	Description	Shipping Weight	
		lb	(kg)
437637	XP6-MA Six-zone interface module	1	(0.5)
437638	XP6-MAA Six-zone interface module (ULC)	1	(0.5)
428078	BB-XP Cabinet – One or two modules (Optional)	7	(3.2)
428079	BB-25 Cabinet – Up to six modules mounted on CHS-6 chassis (Optional)	23	(10.4)
428080	CHS-6 Chassis – Mounts up to six modules	3	(1.4)





## XP6-C Six-Circuit Supervised Control Module (IQ-318/IQ-636X-2)

### Features

- Six addressable Class B or three addressable Class A outputs that function as notification appliance circuits
- Removable 12 AWG (3.25 mm<sup>2</sup>) to 18 AWG (0.9 mm<sup>2</sup>) plug-in terminal blocks
- Status indicators for each point
- Panel-Controlled Green LED Indicators
- Unused addresses may be disabled
- Rotary address switches
- Class A or Class B operation
- FlashScan® or CLIP operation
- Mount one or two modules in a BB-XP cabinet (optional)
- Mount up to six modules on a CHS-6 chassis in a CAB-3 Series or BB-25 cabinet (optional)
- Mounting hardware included

### Description

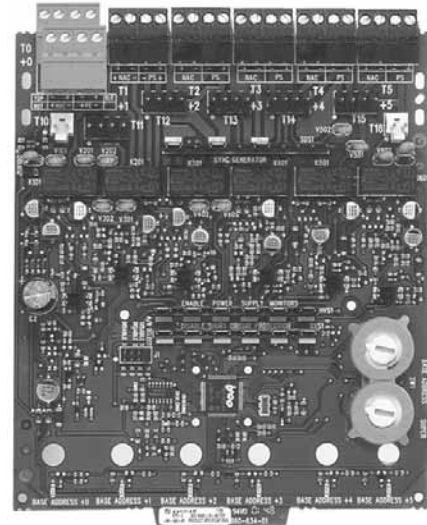
**Note: The XP6-C is not suitable for releasing applications.**

The XP6-C six-circuit supervised control module provides the addressable AUTOPULSE IQ-318 and IQ-636X-2 control units with supervised monitoring of wiring to load devices that require an external power supply to operate, such as horns, strobes, or bells. Upon command from the control panel, the XP6-C will disconnect the supervision and connect the external power supply across the load device.

The first module is addressed from 01 to 154 while the remaining modules are automatically assigned to the next five higher addresses. Provisions are included for disabling a maximum of three unused addresses. Each XP6-C module has terminals for connection to an external supply circuit for powering devices on its notification appliance circuit. One or multiple power supplies may be used.

Each XP6-C module features a short circuit protection monitor to protect the external power supply against short-circuit conditions on the NAC. When an alarm condition occurs, the relay which connects the external supply to the NAC will not be allowed to close if a short-circuit condition currently exists on the NAC. Additionally, an algorithm is incorporated to find shorts when the module is active. The XP6-C module will close all circuits that are not shorted to find the NAC with the problem. Each XP6-C module has panel-controlled green LED indicators.

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the unit's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.



007005

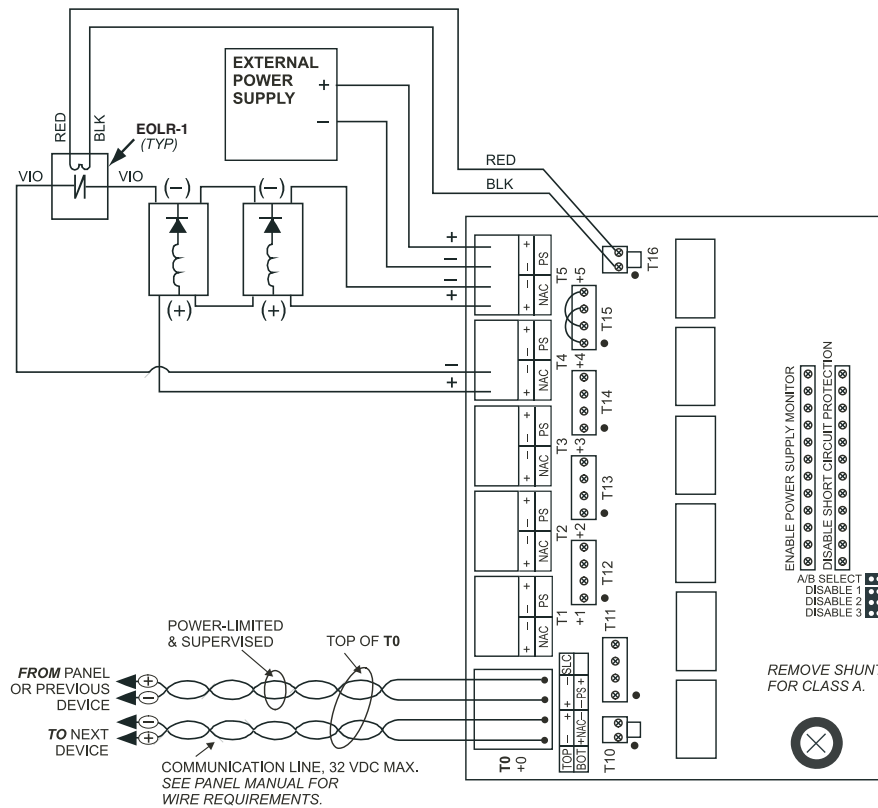
### Technical Information

Standby Current:	2.25 mA (SLC current draw with all addresses used; if some addresses are disabled, the standby current decreases.)
Alarm Current:	35 mA (assumes all six relays have been switched once and all six LEDs solid ON)
Temperature Range:	32 °F to 120 °F (0 °C to 49 °C) for UL applications; 14 °F to 131 °F (-10 °C to 55 °C) for EN54 applications
Humidity Range:	10% to 85% noncondensing for UL applications; 10% to 93% noncondensing for EN54 applications
Dimensions:	Height: 6.8 in. (172.7 mm) Width: 5.8 in. (147.3 mm) Depth: 1.25 in. (31.75 mm)
Wire Gauge:	12 AWG (3.25 mm <sup>2</sup> ) to 18 AWG (0.9 mm <sup>2</sup> ), grounded
Maximum SLC Wiring Resistance:	40 or 50 ohms, panel dependent
Maximum NAC Wiring Resistance:	40 ohms
Relay Contact Ratings:	30 VDC; 110 VAC
Current Ratings:	3.0 A @ 30 VDC maximum, resistive, non-coded 2.0 A @ 30 VDC maximum, resistive, coded 1.0 A @ 30 VDC maximum, inductive (L/R=2 ms), coded 0.5 A @ 30 VDC maximum, inductive (L/R=5 ms), coded





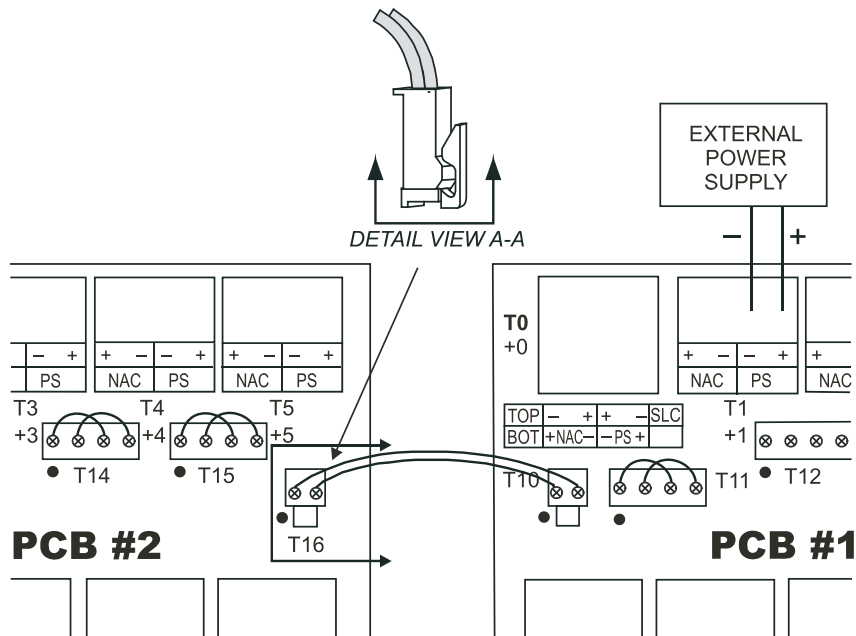
**Example of Class A, Style Z NAC configuration with a single supply dedicated to a single NAC.**



007008

**Example of multiple boards sharing the same external power supply.**

Supply is shared by NACs +0 and +1 (on PCB #1) as well as +3, +4, and +5 (on PCB #2). Refer to previous typical NAC wiring diagrams. Make certain that the lip on the long power supply jumper engages the retaining tab on T10 or T16 as shown in detail view A-A.



007009

**Listings and Approvals\***

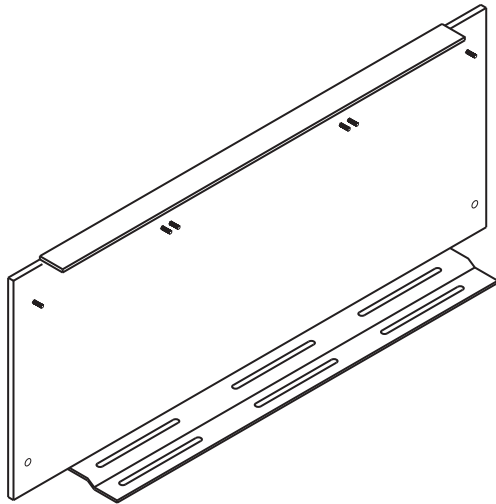
UL . . . . . S635  
 ULC . . . . . S635/CS118 (XP6-CA)  
 Factory Mutual (FM) . . . . . Approved  
 California State Fire Marshal (CSFM) . . . . . 7300-0028:219  
 MEA (NYC) . . . . . 43-02-E  
 Maryland State Fire Marshal. . . . . Permit #2106  
 USCG. . . . . 161.002/A42/1

\*Listings and Approvals are under NOTIFIER.

**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
432715	XP6-C Six-circuit Supervised Control Module (UL)	1.1	(0.5)
428078	BB-XP Cabinet for One or Two Modules	7	(3.2)
428079	BB-25 Cabinet	15	(6.8)
428080	CHS-6 Chassis	2	(0.9)

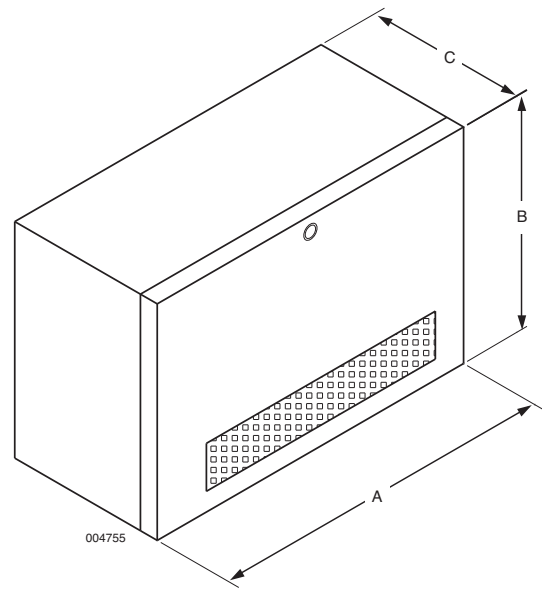
**CHS-6 CHASSIS**



004754

19 IN. WIDE X 7 5/16 IN. HIGH X 2 3/16 IN. DEEP  
 (483 mm wide x 186 mm high x 56 mm deep)

**BACK-BOX/CABINET**



	Dimensions		
	A – Width	B – Height	C – Depth
BB-25 Battery Back Box	24 in (610 mm)	12 5/8 in (321 mm)	5 1/4 in (133 mm)
BB-XP Cabinet	9 1/2 in (241 mm)	12 1/2 in (318 mm)	3 in (76 mm)

FlashScan is a registered trademark of Honeywell International.



## FMM-1 Addressable Monitor Module (IQ-318/IQ-636X-2)

### Features

- Built-in type identification automatically identifies this device as a monitor module to the AUTOPULSE control unit
- Powered directly by two-wire SLC loop, no additional power required
- High noise (EMF/RFI) immunity
- SEMS screws with clamping plates for ease of wiring
- Direct-dial entry of address (01-159)
- LED flashes green during normal operation (this is a programmable option), and latches on steady RED to indicate alarm
- FlashScan® communication protocol

### Applications

Use the FMM-1 module to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control unit. Monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class D) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is required for supervision of the Style D circuit. Maximum IDC loop length is 2,500 ft/762 m (20 ohms maximum).

### Description

The FMM-1 monitor module (typically mounts to a 4 in. square box) is a standard-sized module used with the AUTOPULSE IQ-318 and IQ-636X-2 control unit that supervises either a Class A (Style D) or Class B (Style B) circuit of dry-contact input devices. It is intended for use in intelligent two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a two-wire or four-wire fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The module has a unit-controlled LED indicator. The FMM-1 can be used to replace MMX-1 modules, Part No. 417476, in existing systems.

Each FMM-1 uses one of 159 available module addresses on an SLC loop. It responds to regular polls from the control unit and reports its type and the status (open/normal/short) of its IDC. A flashing LED indicates that the module is in communication with the control unit. The LED latches steady on alarm (subject to current limitations on the loop).

FlashScan (patent pending) is a new communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the unit's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

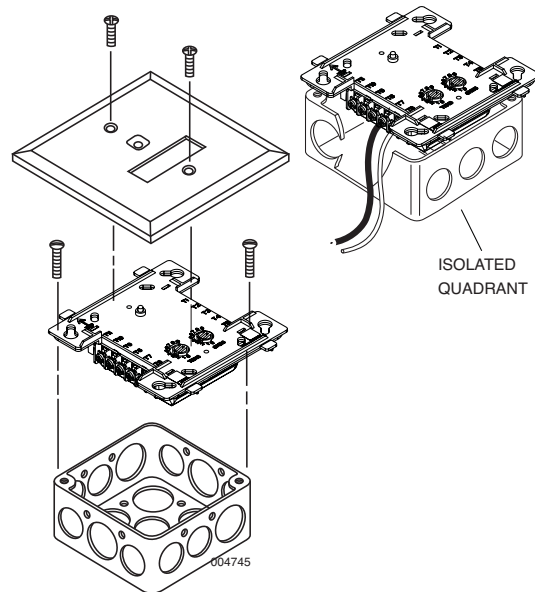
### Technical Information

Nominal Operating Voltage:	15 to 32 VDC
Maximum Current Draw:	5.1 mA (LED on)
Average Operating Current:	350 $\mu$ A (LED flashing)
EOL Resistance:	47K ohms
Temperature Range:	32 °F to 120 °F (0 °C to 49 °C)
Humidity Range:	10% to 93% non-condensing
Dimensions: High:	4.5 in. (114 mm)
Wide:	4 in. (102 mm)
Deep:	1.25 in. (32 mm)

### Installation

The FMM-1 module mounts directly to a standard 4 in. square, 2.124 in. (54 mm) deep, electrical box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

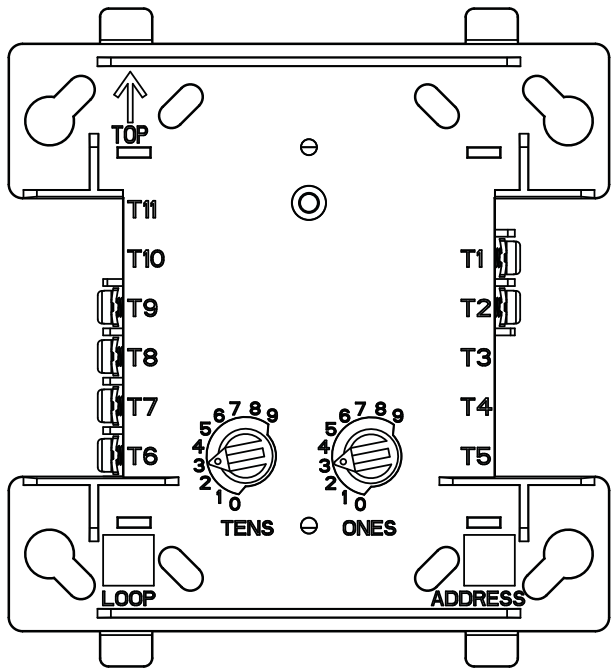
#### MOUNTING THE FMM-1 TO A 4 INCH SQUARE 2 1/8 INCH DEEP JUNCTION BOX



### Wiring

- Connect modules to listed compatible AUTOPULSE control units only.
- All wiring shown is supervised and power limited.
- Install contact closure devices per manufacturers' installation instructions.
- Any number of UL-listed contact closure devices may be used.
- **DO NOT MIX** fire alarm initiating, supervisory, or security devices on the same module.

FMM-1 MODULE



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Listings and Approvals\*

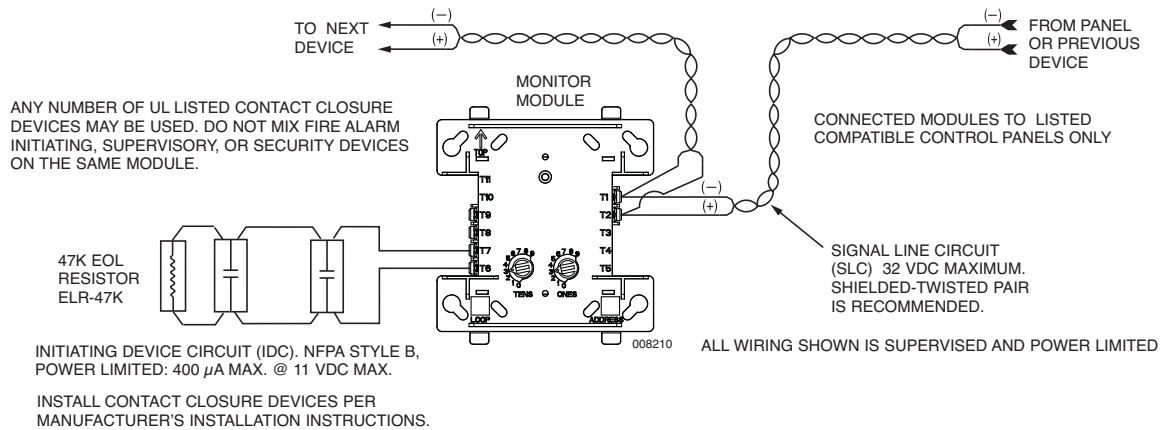
UL.....	S635
ULC.....	CS669
Factory Mutual (FM).....	Approved
California State Fire Marshal (CSFM).....	7300-0028:202
MEA.....	457-99-E
Maryland State Fire Marshal.....	Permit # 2020
USCG.....	161.002/A42/1

\* Listings and Approvals are under NOTIFIER

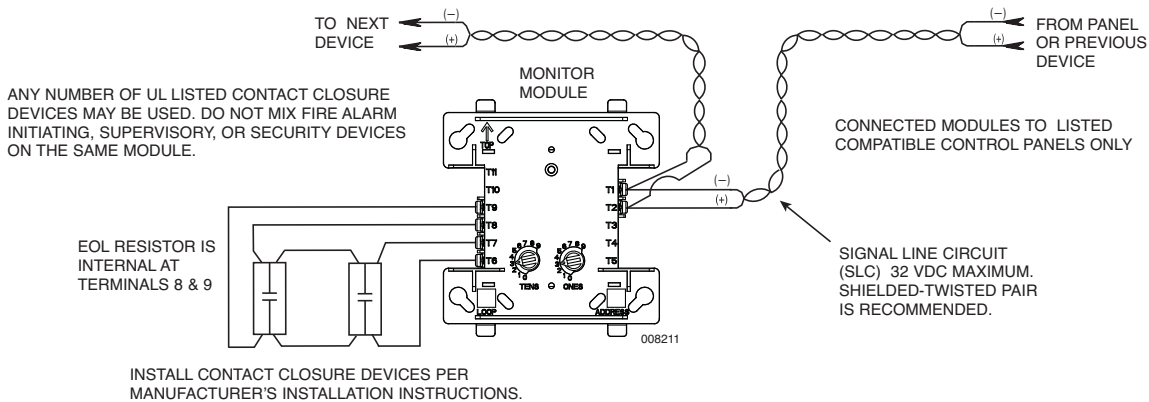
Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
428097	FMM-1 Monitor Module	1	(0.45)
437064	FMM-1A Monitor Module (ULC)	1	(0.45)

TYPICAL TWO-WIRE INITIATING DEVICE CIRCUIT CONFIGURATION, NFPA STYLE B



TYPICAL FOUR-WIRE FAULT-TOLERANT INITIATING CIRCUIT CONFIGURATION, NFPA STYLE D.



FlashScan is a trademark of NOTIFIER.





## FZM-1 Interface Module (IQ-318/IQ-636X-2)

### Features

- Supports compatible two-wire smoke detectors
- Supervises IDC wiring and connection of external power source
- High noise (EMF/RFI) immunity
- SEMS screws with clamping plates for ease of wiring
- Direct-dial entry of address (01-159)
- LED flashes during normal operation (this is a programmable option)
- LED latches steady to indicate alarm on command from control unit
- FlashScan™ communication protocol

### Applications

The FZM-1 Interface Module is intended for use in intelligent, addressable systems, where the individual address of each module is selected using built-in rotary switches. This module allows intelligent units to interface and monitor two-wire conventional smoke detectors. It transmits the status (normal, open, or alarm) of one full zone of conventional detectors back to the AUTOPULSE IQ-318 or IQ-636X-2 control units. All two-wire detectors being monitored must be UL compatible with the module. The FZM-1 has a panel-controlled LED indicator and can be used to replace MMX-2 modules, Part No. 417477, in existing systems.

Use the FZM-1 to monitor a zone of two-wire smoke detectors. The monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. The 3.9 K ohm End-of-Line Resistor (provided) terminates the end of the Style B or D (Class B or A) circuit (maximum IDC loop resistance is 25 ohms). Install ELR across terminals 8 and 9 for Style D application.

### Description

The FZM-1 Interface module is a standard-sized module used to monitor and supervise compatible two-wire, 24 volt, smoke detectors on a Class A (Style D) or Class B (Style B) circuit.

Each FZM-1 uses one of 159 available module addresses on an SLC loop. It responds to regular polls from the control unit and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control unit. The LED latches steady on alarm (subject to current limitations on the loop).

FlashScan (patent pending) is a new communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the unit's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

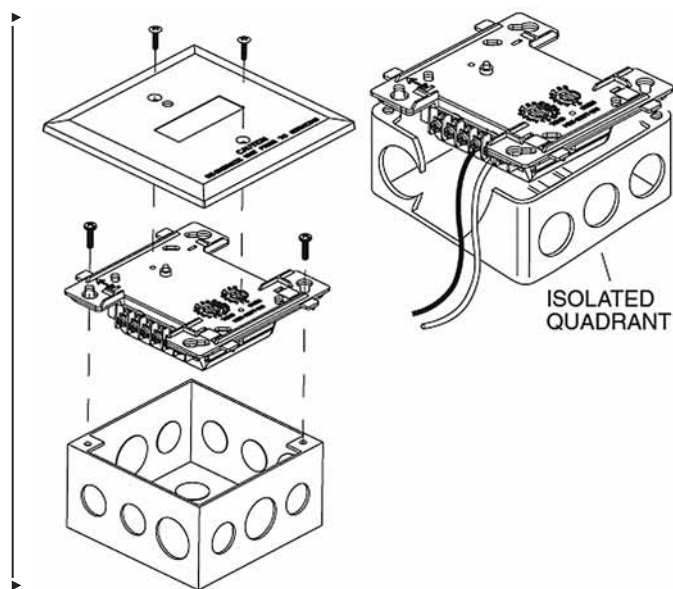
### Technical Information

Nominal Operating Voltage:	15 to 32 VDC
Maximum Current Draw:	5.1 mA (LED on)
Average Operating Current:	270 $\mu$ A (LED flashing)
EOL Resistance:	3.9K ohms
External Supply Voltage (between T3 and T4)	
DC Voltage:	18 to 28 volts power limited
Ripple Voltage:	0.1 VRMS maximum
Current:	90 mA per module maximum
Temperature Range:	32 °F to 120 °F (0 °C to 49 °C)
Humidity Range:	10% to 93% non-condensing
Dimensions:	
High:	4.5 in. (114 mm)
Wide:	4 in. (102 mm)
Deep:	1.25 in. (32 mm)

### Installation

- ▶ The FZM-1 module mounts directly to a standard 4 in. (102 mm) square, 2.125 in. (54 mm) deep, electrical box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

#### MOUNTING THE FZM-1 TO A 4 INCH SQUARE 2 1/8 INCH DEEP JUNCTION BOX



008859

**Wiring**

- Connect modules to listed compatible AUTOPULSE control units only.
- Terminal wiring must be power limited.
- **DO NOT MIX** fire alarm initiating, supervisory, or security devices on the same module.
- **DO NOT LOOP** wire under terminals. Break wire run to provide supervision of connections.
- Detectors must be UL listed compatible with module.
- Install detectors per manufacturers' installation instructions.
- Power to the interface module must be externally switched to reset the detectors.

**Listings and Approvals\***

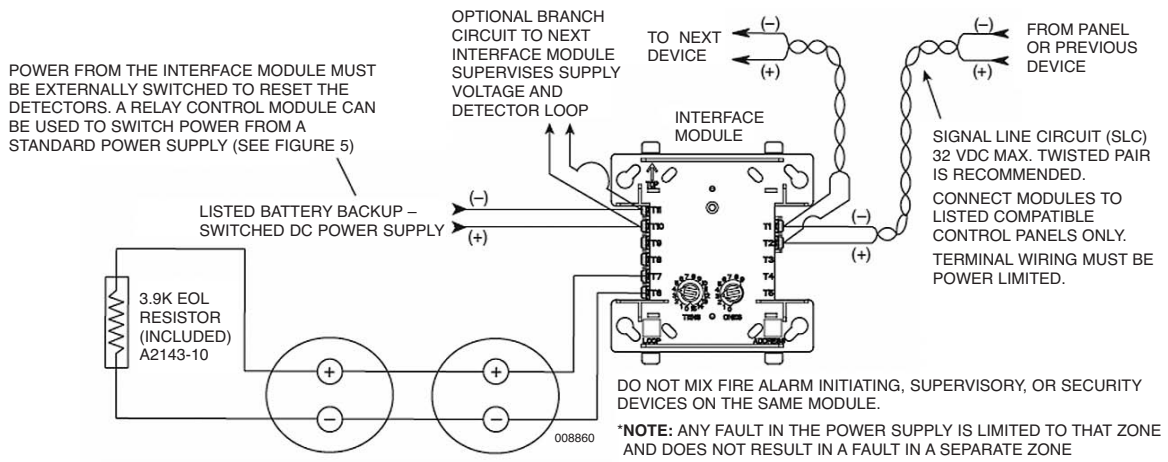
UL.....	S635
ULC.....	CS669
Factory Mutual (FM).....	Approved
California State Fire Marshal (CSFM).....	7300-0028:202
MEA.....	457-99-E
Maryland State Fire Marshal.....	Permit # 2020
USCG.....	161.002/A42/1

\* Listings and Approvals are under NOTIFIER

**Ordering Information**

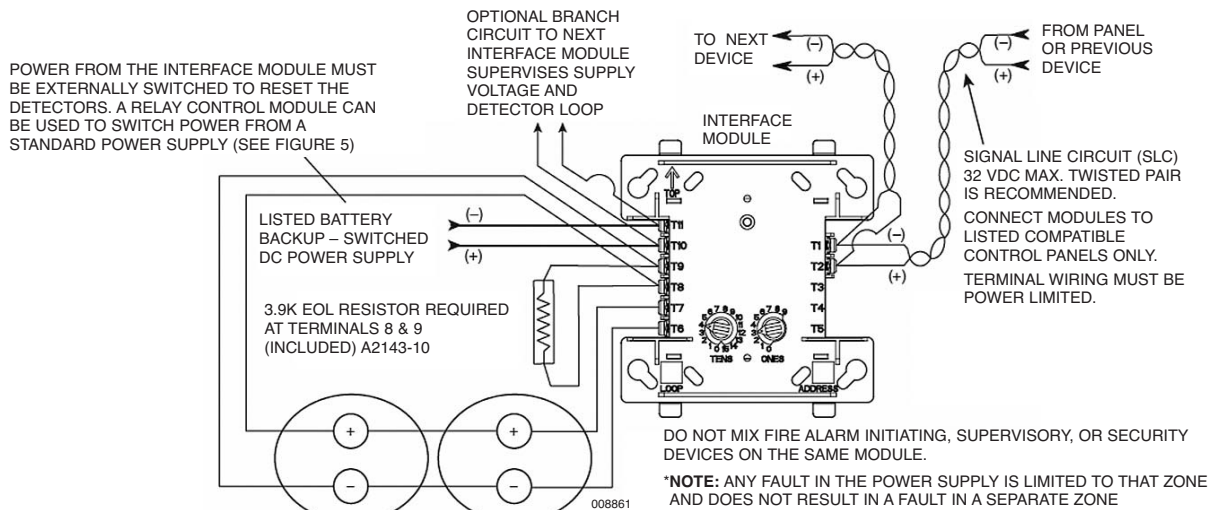
Part No.	Description	Shipping Weight lb	(kg)
428100	FZM-1 Interface Module	1	(0.45)
437068	FZM-1A Interface Module (ULC)	1	(0.45)

**INTERFACE TWO-WIRE CONVENTIONAL DETECTORS, NFPA STYLE B**



DO NOT LOOP WIRE UNDER TERMINALS. BREAK ALL WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS. DETECTORS MUST BE UL LISTED COMPATIBLE WITH MODULE. INSTALL DETECTORS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

**INTERFACE TWO-WIRE CONVENTIONAL DETECTORS, NFPA STYLE D**



DO NOT LOOP WIRE UNDER TERMINALS. BREAK ALL WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS. DETECTORS MUST BE UL LISTED COMPATIBLE WITH MODULE. INSTALL DETECTORS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

FlashScan is a trademark of NOTIFIER.



## FCM-1 Control Module (IQ-318/IQ-636X-2)

### Features

- Built-in type identification automatically identifies these devices to the control unit
- Internal circuitry and relay powered directly by two-wire SLC loop; requires power for notification
- Integral LED blinks green each time a communication is received from the control unit and turns on in steady red when activated
- LED blink may be deselected globally (affects all devices)
- High noise immunity (EMF/RFI)
- Wide viewing angle of LED
- SEMS screws with clamping plates for wiring ease
- Direct-dial entry of address (01-159)
- Audible/visual applications may be wired for Class B or A (Style Y or Z)
- Face plate is made of off-white Noryl®
- Configured for a single Class B (Style Y) or Class A (Style Z) Notification Appliance Circuit
- FlashScan® communication protocol

### Applications

The FCM-1 Addressable Control Module provides the AUTOPULSE IQ-318, or IQ-636X-2 control unit a circuit for Notification Appliances (horns, strobes, speakers, etc.). Addressability allows the FCM-1 to be activated, either manually or through panel programming, on a select (zone or area of coverage) basis.

FlashScan (U.S. Patent 5,539,389) is a new communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other designs.

### Description

Each FCM-1 Control Module uses one of 159 possible module addresses on a SLC loop. It responds to regular polls from the control unit and reports its type and status, including the open/normal/short status of its Notification Appliance Circuit (NAC). The LED blinks with each poll received. On command, it activates its internal relay. The FCM-1 supervises Class B (Style Y) or Class A (Style Z) notification or control circuits. The FCM-1 can be used to replace the CMX-2 module, Part No. 417479, in existing systems.

Upon code command from the unit, the FCM-1 will disconnect the supervision and connect the external power supply in the proper polarity across the load device. The disconnection of the supervision provides a positive indication to the panel that the control relay actually turned ON. The external

power supply is always relay isolated from the communication loop so that a trouble condition on the external power supply will never interfere with the rest of the system.

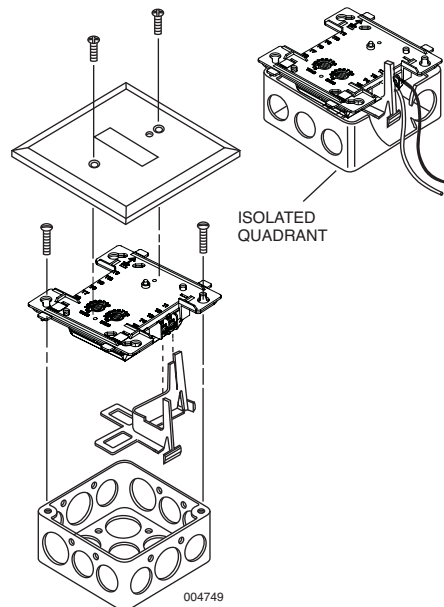
Rotary switches set a unique address for each module. The address may be set before or after mounting. The built-in TYPE CODE (not settable) will identify the module to the control panel, so as to differentiate between a module and a sensor address.

The FCM-1 is used to switch 24 VDC audible/visual or releasing appliance power.

### Technical Information

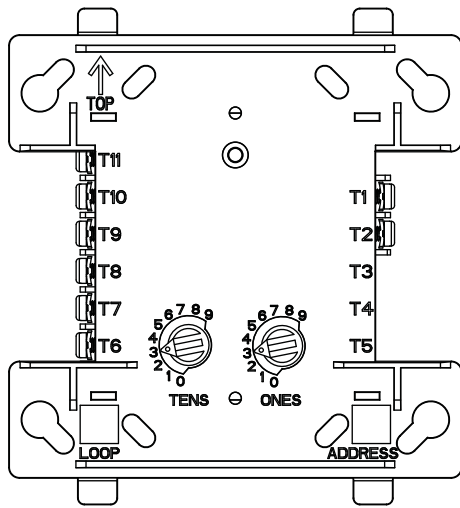
- Normal Operating Voltage: . . . . . 15 to 32 VDC
- Maximum Current Draw: . . . . . 5.1 mA (LED on)
- Average Operating Current: . . . . . 390  $\mu$ A (LED flashing)
- Maximum NAC Current Rating:
  - Class B wiring system: . . . . . 3A
  - Class A wiring system: . . . . . 2A
- External Supply Voltage . . . . . max 80 volts (RMS or DC) between T3 and T4:
- Drain on External . . . . . 2  $\mu$ A max. (using internal EOL relay) Supply:
- EOL Resistance: . . . . . 47 K ohms
- Temperature Range: . . . . . 32 °F to 120 °F (0 °C to 49 °C)
- Humidity Range: . . . . . 10% to 93% non-condensing

### FCM-1 CONTROL MODULE



**Note:** The CB500 barrier is required by UL for separating power-limited and non-power limited wiring in the same junction box.

FCM-1 MODULE



Ordering Information

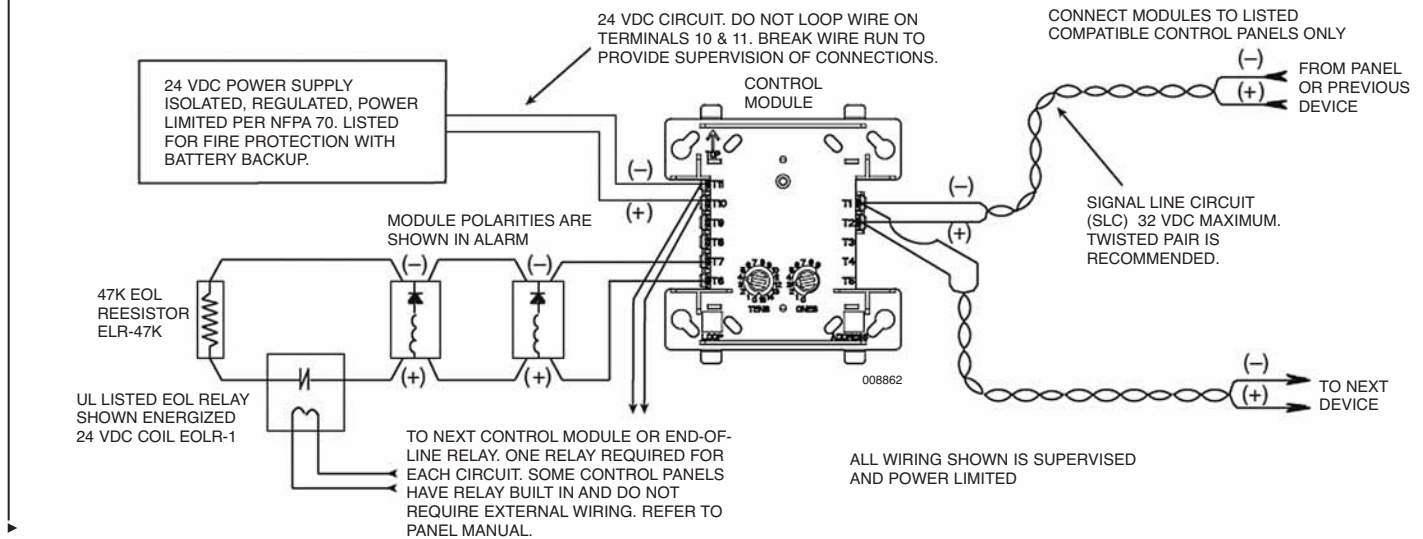
Part No.	Description	Shipping Weight	
		lb	(kg)
428101	FCM-1 Intelligent Control Module	1	(0.45)
437066	FCM-1A Intelligent Control Module (ULC)	1	(0.45)
419639	Releasing Device, REL-47K	0.5	(0.23)
437071	Releasing Device, REL-47K BP (ULC)	1	(0.45)
436202	CB500 Barrier	0.5	(0.23)

Listings and Approvals\*

- UL..... S635
- ULC..... CS669
- Factory Mutual (FM)..... Approved
- California State Fire Marshal (CSFM)..... 7300-0028:202
- MEA (NYC)..... 457-99-E
- Maryland State Fire Marshal..... Permit # 2020
- USCG..... 161.002/A42/1

\* Listings and Approvals are under NOTIFIER.

TYPICAL CONNECTION OF A 24 VDC NOTIFICATION DEVICE TO THE FCM-1 MODULE



FlashScan is a trademark of Honeywell International. Noryl is a registered trademark of GE Plastics, a subsidiary of General Electric Company.





## FCM-1-REL(A) Releasing Control Module (IQ-318/IQ-636X-2)

### Features

- Redundant protocol for added protection
- Configurable for Class A or Class B operation
- External supply voltage monitoring
- Can power one 24V or two 12V solenoids
- SEMS screws for easing wiring
- Panel controlled status LED
- Analog communications
- Rotary address switches
- Low standby current
- Mounts in standard 4 in. (10.16 cm) junction box
- FlashScan® operation

### Description

The FCM-1-REL(A) Releasing Control Module is specifically designed for fire suppression releasing applications in Flash-Scan systems. Power to the release agent solenoid(s) runs through the module for full-time monitoring and supervision.

The FCM-1-REL(A) Releasing Control Module uses a redundant protocol; the module must be armed with a pair of signals in order to activate. It will then enter a 3-second window awaiting a pair of confirmation signals. If no confirmation is received, the module will automatically reset. It also supervises the wiring to the connected load and reports the status to the panel as NORMAL, OPEN, or SHORT CIRCUIT. The module has two pairs of output termination points available for fault-tolerant wiring and a panel-controlled LED indicator. The module may be connected to either one 24VDC solenoid or up to two 12VDC solenoids that are listed with the IQ-318 and IQ-636X-2 panels. To ensure proper operation, this module shall be connected to a compatible AUTOPULSE system control panel only (list available upon request). In addition, please refer to AUTOPULSE Device Compatibility Document, Part No. 50054, for the list of compatible solenoids.

**Note:** FCM-1-REL(A) is required for all new FlashScan-mode releasing applications with IQ-318 (version 12.0 or higher) and IQ-636X-2 (version 12.0 or higher) panels. Use FCM-1 for releasing applications on IQ-636X, IQ-301, and IQ-396X panels.

### Technical Information

#### GENERAL

Operating Voltage	15 to 32 VDC
Communication Line Loop Impedance	40 Ohm max.
Temperature Range	14°F to 140°F (-10° to 60°C)
Relative Humidity	10% to 95% noncondensing
Shipping Weight	5.5 oz (156 g)
Dimensions: High	4.7 in. (119 mm)
Wide	4.3 in. (109 mm)
Deep	1.4 in. (36 mm)



#### SLC

Average Operating Current . . . . . 700  $\mu$ A max @ 24 VDC  
(one communication every 5 sec. with LED enabled)

Maximum Activation Current. . . . . 9.0 mA (LED on)

#### EXTERNAL SUPPLY

Normal Operating Voltage . . . . . 24 VDC Nominal

Maximum Line Loss . . . . . 2.3 VDC (total allowable loss  
from power supply to module and  
from module to solenoid)

#### Minimum Operating Voltage

to Activate Solenoid . . . . . 18 VDC (at solenoid)

Standby Current . . . . . 6.4 mA

Activation Current . . . . . 10 mA

#### SOLENOID

Supervisory Loop Voltage . . . . . 3.3 V

Supervisory Loop Current (Normal) . . . . . 30 mA

Maximum Activation Current. . . . . 2 A

#### 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 listings may be in process. Consult factory for latest listing status.

UL Listed . . . . . S635

ULC Listed . . . . . (FCM-1-RELA)

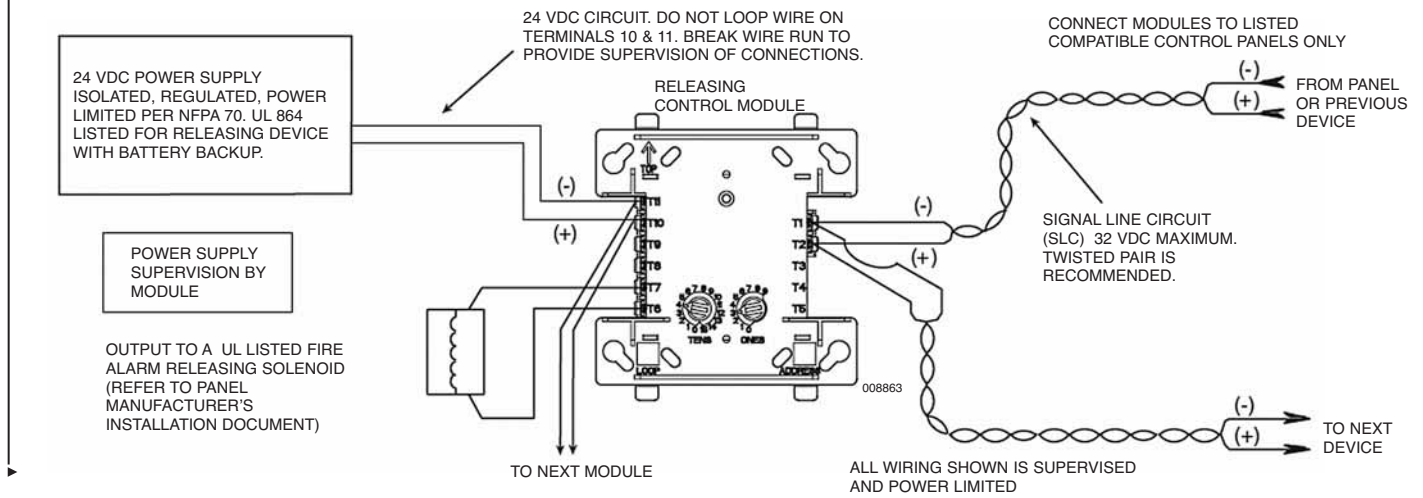
FM . . . . . Approved

CSFM . . . . . 7300-0028:249

\*Listings and Approvals are under NOTIFIER.



▶ TYPICAL CLASS B, SOLENOID CONFIGURATION



**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
436861	FCM-1-REL Releasing Control Module	1	(0.5)
436942	FCM-1-RELA Releasing Control Module (ULC Version)	1	(0.5)
436202	CB500 Control Module Barrier	0.5	(0.2)

FlashScan is a trademark of Honeywell International.

TYCO FIRE PROTECTION PRODUCTS  
ONE STANTON STREET  
MARINETTE, WI 54143-2542 715-735-7411

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Form No. T-2009134-3



## FRM-1 Relay Module (IQ-318/IQ-636X-2)

### Features

- Built-in type identification automatically identifies these devices to the control unit
- Internal circuitry and relay powered directly by two-wire SLC loop
- Integral LED blinks green each time a communication is received from the control unit and turns on in steady red when activated
- LED blink may be deselected globally (affects all devices)
- High noise immunity (EMF/RFI)
- Wide viewing angle of LED
- SEMS screws with clamping plates for wiring ease
- Face plate is made of off-white Noryl®
- Controls include two rotary switches for direct-dial entry of address (01-159)
- Two Form-C dry contacts that switch together
- FlashScan® communication protocol

### Applications

The FRM-1 Addressable Relay Module provides the AUTOPULSE IQ-318 or IQ-636X-2 with dry-contact outputs for activating a variety of auxiliary devices, such as fans, dampers, control equipment, etc. Addressability allows the dry contact to be activated, either manually or through panel programming, on a select basis.

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the unit CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other designs.

### Description

Each FRM-1 module uses one of 159 possible module addresses on a SLC loop. It responds to regular polls from the control unit and reports its type and status, including the open/normal/short status of its Notification Appliance Circuit (NAC). The LED blinks with each poll received. On command, it activates its internal relay. The FRM-1 can be used to replace the CMX-2 module (Part No. 417479) in existing systems.

Rotary switches set a unique address for each module. The address may be set before or after mounting. The built-in TYPE CODE (not settable) will identify the module to the control unit, so as to differentiate between a module and a sensor address.

The FRM-1 may be programmed to operate dry contacts for door holders, Air Handling Unit shutdown, etc., and to re-set four-wire smoke detector power.

### Technical Information

Normal Operating Voltage: . . . . . 15 to 32 VDC  
 Maximum Current Draw: . . . . . 6.5 mA (LED on)  
 Average Operating Current: . . . . . 300  $\mu$ A (LED flashing)  
 EOL Resistance: . . . . . not used  
 Temperature Range: . . . . . 32 °F to 120 °F (0 °C to 49 °C)  
 Humidity Range: . . . . . 10% to 93% non-condensing

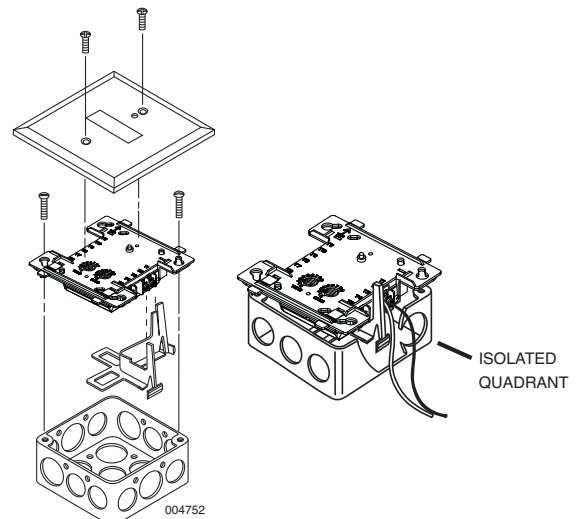
### RELAY CONTACT RATINGS

Load Description	Application	Maximum Voltage	Current Rating
Resistive	Non-Coded	30 VDC	3.0 A
Resistive	Coded	30 VDC	2.0 A
Resistive	Non-Coded	110 VDC	0.9 A
Resistive	Non-Coded	125 VAC	0.9 A
Inductive (L/R = 5 ms)	Coded	30 VDC	0.5 A
Inductive (L/R = 2 ms)	Coded	30 VDC	1.0 A
Inductive (PF = 0.35 )	Non-Coded	125 VAC	0.3 A
Inductive (PF = 0.35)	Non-Coded	25 VAC	1.5 A
Inductive (PF = 0.35)	Non-Coded	70.7 VAC	0.7 A
Inductive (PF = 0.35)	Non-Coded	25 VAC	2.0 A

**⚠ WARNING**

All relay switch contacts are shipped in the standby (open) state, but may have transferred to the activated (closed) state during shipping. The presence of high voltage may cause serious injury or death. To ensure that the switch contacts are in their correct state, modules must be made to communicate with the panel before connecting circuits controlled by the module.

### MOUNTING THE FRM-1 TO A 4 INCH SQUARE, 2 1/8 INCH DEEP JUNCTION BOX



### Listings and Approvals\*

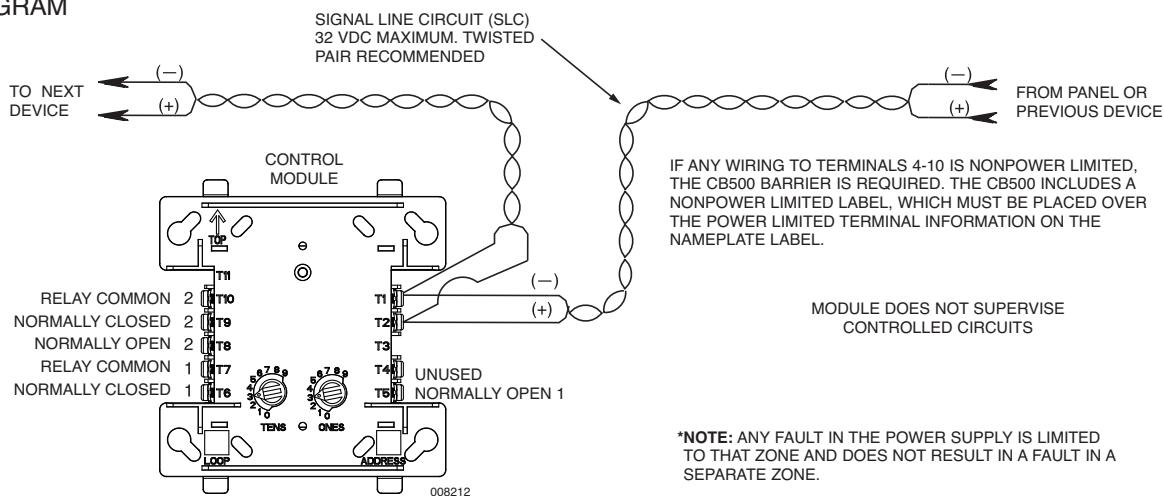
UL.....S635  
 ULC.....CS669  
 Factory Mutual (FM).....Approved  
 California State Fire Marshal (CSFM).....7300-0028:202  
 MEA (NYC).....457-99-E  
 Maryland State Fire Marshal.....Permit # 2020  
 USCG.....161.002/A42/1

\* Listings and Approvals are under NOTIFIER.

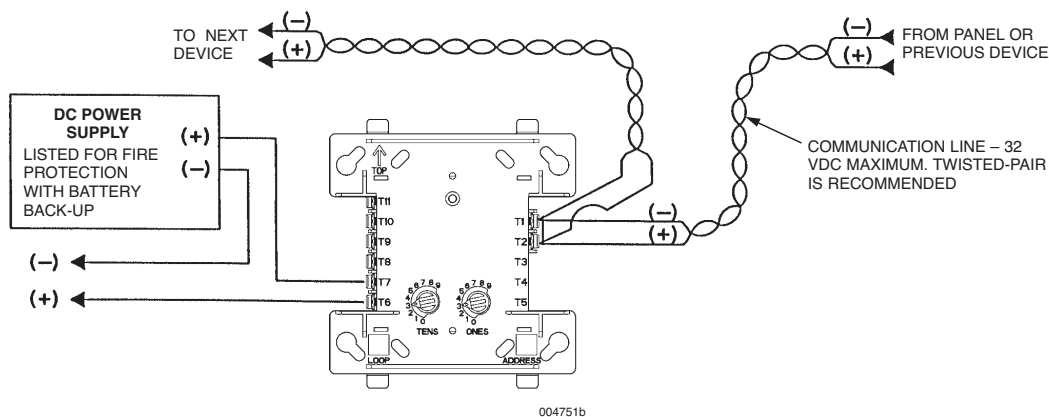
### Ordering Information

Part No.	Description	Shipping Weight lb	(kg)
428102	FRM-1 Intelligent Relay Module	1	(0.45)
437067	FRM-1A Intelligent Relay Module (ULC)	1	(0.45)
436202	CB500 Barrier	0.5	(0.23)

### WIRING DIAGRAM



### RELAY CONTROL MODULE USED TO DISCONNECT A POWER SUPPLY



FlashScan is a trademark of Honeywell International. Noryl is a registered trademark of GE Plastics, a subsidiary of General Electric Company.



## ISO-X Fault Isolator Module (IQ-318/IQ-636X-2)

### Features

- Powered by Signaling Line Circuit (SLC) loop directly, no external power required
- Meets NFPA 72 Style 7 requirements
- Mount in standard 4 inch (102 mm) square junction box, minimum 2 1/8 inch (54 mm) deep
- Integral LED blinks to indicate normal condition; illuminates steady when short circuit condition is detected
- High noise (EMI/RFI) immunity
- Wide viewing angle of LED
- SEMS screws with clamping plates for ease of wiring
- Opens SLC loop automatically on detection of short, preventing the short from causing failure of the entire loop
- Automatically resets on correction of short

### Applications

The Fault Isolator Modules should be spaced between groups of sensors in a loop to protect the rest of the loop. It is used to isolate short circuit problems within a section of a loop so that other sections can continue to operate normally.

### Description

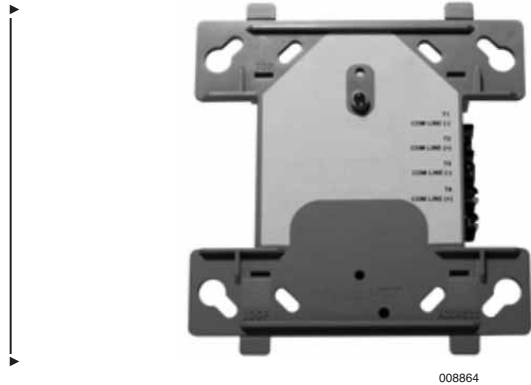
The ISO-X Fault Isolator Module is used with the AUTOPULSE IQ-318 and IQ-636X-2 control system to isolate short circuits on the SLC loop, so that unshorted sections of the loop can continue to operate normally. In Style 4 loops, the ISO-X is generally used at each T-tap branch to limit the effect of short circuits on a branch to the devices on that branch.

The module automatically opens a circuit when the line voltage drops below 4 volts. Fault Isolator Modules should be spaced between groups of sensors in a loop to protect the rest of the loop. If a short should occur between any two isolators, then both isolators immediately switch to an open circuit state and isolate the group of sensors between them. The remaining units on the loop continue to operate normally.

The ISO-X Fault Isolator Module automatically restores the shorted portion of the communications loop to normal condition when the short circuit condition is removed.

It mounts on a standard 4 in. (102 mm) mounting junction box which is at least 2 1/8 in. (54 mm) deep. Installation instructions are provided with each module and terminal screws are provided for “in and out” wiring.

The Fault Isolator Module (ISO-X) is used to protect critical elements of the communications loop from faults on other branches or sections of the loop. The ISO-X continuously monitors the circuit connected to terminals 3 (-) and 4 (+). Upon power-up, an integral relay is latched on.



008864

The ISO-X periodically pulses the coil of this relay. A short circuit on the loop resets the relay. The ISO-X sees this short and disconnects the faulted branch by opening the positive side of the loop (terminal 4). This effectively isolates the faulted branch from the remainder of the loop. The LED indicator is on continuously during a short circuit condition. Once the fault is removed, the ISO-X automatically reapplies power to the communications loop branch.

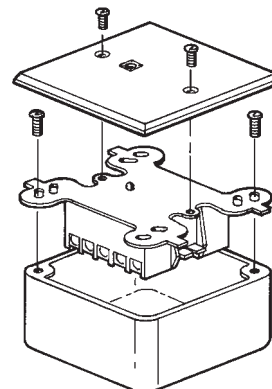
**Note:** During a fault condition, the AUTOPULSE IQ-318 and IQ-636X-2 control system will register a trouble condition for each zone mapped to the isolated loop branch.

The face plate is made of LEXAN® with off-white color. It includes a yellow LED indicator that pulses when normal and turns on solid when a short is detected.

### Technical Information

- Operating Voltage: . . . . . 15 – 28 VDC (peak)
- Current Range: . . . . . 5 mA for LED latched in alarm
- Standby Current: . 400  $\mu$ A maximum, plus supervision current
- Temperature Range: . . . . +32 °F to +120 °F (0 °C to +49 °C)
- Relative Humidity: . . . . . 10% to 95%
- Weight: . . . . . 5 oz (150 g)

### MOUNTING THE ISO-X ISOLATOR MODULE TO A 4 INCH SQUARE, 2 1/8 INCH DEEP, JUNCTION BOX



007348

**Listings and Approvals\***

UL ..... S635  
ULC ..... CS118, CS733 (ISO-XA)  
Factory Mutual (FM). .... Approved  
California State Fire Marshal (CSFM) . . . . . 7165-0028:243;  
7170-0028:244  
USCG . . . . . 161.002/A42/1  
MEA . . . . . 128-07-E

\* Listings and Approvals are under NOTIFIER

**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
417480	ISO-X Fault Isolator Module	2	(0.9)
437069	ISO-XA Fault Isolator Module (ULC)	2	(0.9)

LEXAN is a registered trademark of General Electric Corporation.





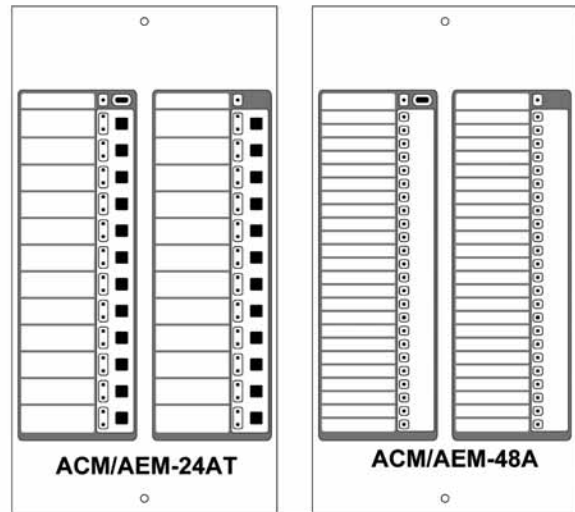
## ACS Series Annunciator Modules (IQ-318/IQ-636X-2)

### Features

- Speaker control mode for use with the AUTOPULSE IQ-318 and IQ-636X-2 panels; enables the ACS to control operation of groups of multi-channels mapped to groups of multi-speakers
- Compatible with existing annunciators
- Color-programmable LEDs
- On-board end-of-line resistors can be enabled/disabled by setting a switch
- Alarm/Circuit On and Trouble LED per point option or more dense Alarm-only option
- Touch-pad control switch option for remote control of system relays; or silence, reset, and evacuate
- LEDs may be programmed to display status of indicating circuits or control relays as well as system status conditions
- System Trouble LED indicator
- On-Line/Power LED indicator
- Alarm and trouble resound with flash of new conditions
- Local sounder for both alarm and trouble conditions with silence/acknowledge button (program options)
- May be powered by 24 VDC from the panel or by remote power supplies
- Microprocessor-controlled electronics, fully supervised
- Slip-in custom labels, lettered with standard typewriter or LabelEase program
- Plug-in terminal blocks for ease of installation and service.

### Applications

The ACS Series Annunciators provide a modular line of products for annunciation and control of the AUTOPULSE IQ-318 and IQ-636X-2 control panels, the NCA-2, and legacy addressable panels. The ACS line provides arrays of LEDs to indicate point status and, in some versions, switches to control the state of output circuits. These ACS units use a serial interface and maybe located at distances of up to 6,000 ft (1,828.8 m) from the panel.



008916

### Construction

The ACS modules are provided in two basic controller modules, each with its expander module. The ACM-24AT provides 24 annunciation and control points per module, each with a red, green, or yellow Alarm/Circuit On LED, a yellow Trouble LED, and a touch-key switch. The ACM-48A provides 48 annunciation points per module, each with a red, green, or yellow Alarm/Circuit On LED (for annunciating control relays, the LED indicates ON/OFF).

On the ACM-24AT, each LED point is individually color-programmable. On ACM-48A, each column of 24 LED points can be color-configured using a DIP switch.

**Temperature and humidity ranges:** This system meets NFPA requirements for operation at 32 °F to 120 °F (0 °C to 49 °C), and at a relative humidity (non-condensing) of 85% at 86 °F (30 °C) per NFPA, and 93% ± 2% at 90 °F ± 1 °F (32 °C ± 2 °C) per ULC. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 60 °F to 80 °F (15 °C to 27 °C).

## ► Installation

The ACS Series annunciator and control subsystems use modular hardware assemblies which allow the custom configuration of the annunciator panel to fit the individual job requirements.

Standard back boxes and mounting hardware schemes, including special remote cabinets, allow the annunciators to be constructed and configured with other system components.

When used with the AUTOPULSE IQ-318, IQ-636X-2, or legacy panels, the ACS modules can be used for manual selection of speaker and telephone circuits. In this application, they are typically mounted in the main control near the microphone and telephone handset.

For remote annunciation applications, the modules are typically mounted in special ABF or ABS boxes. Control switch key locks (AKS-1B) are available.

Communication between the ACS Series annunciators and the host Fire Alarm Control Panel is made through an EIA-485 multi-drop loop, eliminating the need for costly wiring schemes. Four wires are required, two for the EIA-485 communications (twisted pair), and two for 24 VDC regulated power.

Retrofit of ACS Series annunciators into existing systems is easily accomplished. Software may require upgrading, and some legacy panels may require an interface board.

All field-wiring terminations use removable, compression-type terminal blocks for ease of installation, wiring, and circuit testing.

## Operation

The ACS Series annunciator and control system provides the AUTOPULSE system with up to 32 remote serially connected annunciators, each with a capacity of 96 points, for a total capacity of 3072 points (subject to the capability of the FACP). The NFS2-3030 and NCA-2 are capable of using the full 96 points.

Local or remote power supplies and serial communications allow the ACS to be located virtually anywhere on the protected premises.

On AUTOPULSE IQ-318, IQ-636X-2 and the legacy panels, system alarm and/or trouble conditions may be annunciated on a per-point basis, or in a grouped or zone configuration.

Control of system operational controls, such as Signal Silence, System Reset, and local annunciation controls (such as Local Acknowledge and Lamp Test) may be accomplished through the module's rubber keypad.

## Agency Listings and Approvals\*

► The listings and approvals below apply to the ACM/AEM-24AT and the ACM/AEM-48A. 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 . . . . . S635
- ULC . . . . . S635
- • FDNY . . . . . COA #6067 (NFS2-640),  
COA #6065 (NFS2-3030)
- • CSFM. . . . . 7120-0028:0156, 7165-0028:0243,  
7165-0028:0224
- FM. . . . . Approved

\*Listings and Approvals are under NOTIFIER.

## Ordering Information

► **ACM-24AT:** The Annunciator Control Module-24AT contains 24 color-programmable (red/green/yellow) Active and 24 yellow Trouble LEDs, 24 momentary touch-pad switches, a System Trouble LED, an On-Line/Power LED, and a local piezo sounder with a silence/acknowledge switch for audible indication of alarm and trouble conditions. Includes instructions. The ACM-24AT is 8.375 in. (213 mm) high x 4.375 in. (111 mm) wide.

**AEM-24AT:** The Annunciator Expander Module-24AT expands the ACM-24AT by 24 system points. The AEM-24AT is identical in size and in frontal appearance to the ACM-24AT. Up to three of these expander modules can be supported by an ACM-24AT, for a maximum of 96 system points. The AEM-24AT is 8.375 in. (213 mm) high x 4.375 in. (111 mm) wide.

**Note:** The AEM-24AT cannot be used to expand the ACM-48A.

**ACM-48A:** The Annunciator Control Module-48A contains 48 color-programmable (red/green/yellow) Active LEDs, a System Trouble LED, an On-Line/Power LED, and a local piezo sounder with a Silence/Acknowledge switch for audible indication of alarm and trouble conditions. Includes instructions. The ACM-48A is 8.375 in. (213 mm) high x 4.375 in. (111 mm) wide.

**AEM-48A:** The Annunciator Expander Module-48A expands the ACM-48A by 48 system points. The AEM-48A is identical in frontal appearance to the ACM-48A. One expander module can be supported by an ACM-48A, providing a maximum of 96 points (subject to the capability of the FACP). The AEM-48A is 8.375 in. (213 mm) high x 4.375 in. (111 mm) wide.

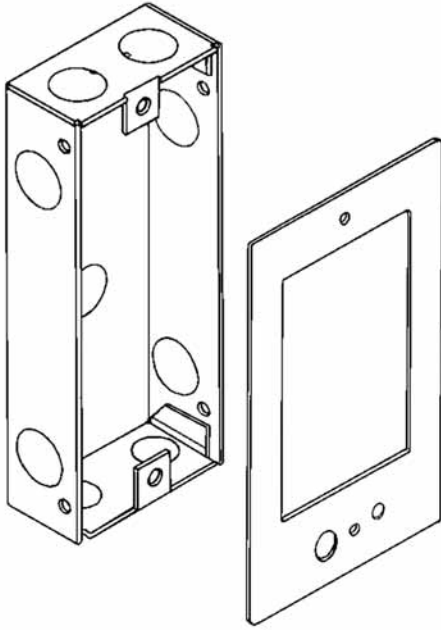
**Note:** The AEM-48A cannot be used to expand the ACM-24AT.

**ABS-1TB:** The ABS-1TB is an attractive black surface-mount back box for mounting one ACS Series Annunciator. Unlike the ABS-1B, the ABS-1TB has an increased depth that allows mounting of the AKS-1B Annunciator Key Switch. The ABS-1TB is 9.938 in. (252 mm) high x 4.625 in. (117 mm) wide x 2.5 in. (64 mm) deep.

► **Note:** An earlier gray model ABS-1TB will not accommodate the ACM/AEM-24AT or ACM/AEM-48A. The slightly deeper ABS-1TB will accommodate both the ACM/AEM-24AT or ACM/AEM-48A models.

## Ordering Information (Continued)

► **ABF-1B:** The Annunciator Flush Box-1B (black) provides for the remote mounting of a single annunciator module in a flush-mount enclosure. Knockouts are provided for use with 1/2 in. (13 mm) conduit. The ABF-1B includes a painted black metal trim plate (11 in. (279 mm) high x 6.25 in. (159 mm) wide), mounting hardware, and an adhesive-backed annunciator label for the dress plate. The ABF-1B is 9.938 in. (252 mm) high x 4.625 in. (117 mm) wide x 2.5 in. (64 mm) deep.



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**ADP-4B:** The Annunciator Dress Panel-4B (black) provides for the cabinet mounting of one to four modules. The ADP-4B hinge-mounts to the CAB-4 Series cabinet. Modules mount directly to threaded studs on the dress panel.

**DP-DISP2:** Dress Panel accommodates up to two annunciator modules (no expanders).

**BMP-1:** Annunciator Blank Module is a flat black dress plate that covers unused module positions in the annunciator back box or in the ADP-4B. The BMP-1 is 8.375 in. (213 mm) high x 4.375 in. (111 mm) wide. Studs for a variety of module mounting options are available.

**AKS-1B:** The Annunciator Key Switch-1B (black) provides access security for the control switches on the ACM/AEM-24AT. The key switch kit includes a key and hardware for mounting to the ABF-1B. Also included is an adhesive-backed annunciator label for use with the key switch/dress plate assembly.

► **Note:** The AKS-1B can only be employed with the ABS-1TB.

Part No.	Description	Shipping Weight	
		lb	(kg)
432787	ACM-24AT, Annunciator Control Module, 24 Zone Alarm/Trouble	2	(0.9)
432790	AEM-24AT, Annunciator Expander Module, 24 Zone Alarm	2	(0.9)
432788	ACM-48A, Annunciator Control Module, 48 Zone Alarm/Trouble	2	(0.9)
432791	AEM-48A, Annunciator Expander Module, 48 Zone Alarm	2	(0.9)
417493	ABS-1TB, Annunciator Back Box, Surface, Single, Deep	1	(0.5)
417657	ABF-1B, Annunciator Back Box, Flush, Single	1	(0.5)
433520	ADP-4B, Annunciator Dress Panel	2	(0.9)
433614	DP-DISP2, Dress Panel	2	(0.9)
432794	BMP-1, Annunciator Blank Module	2	(0.9)
417660	AKS-1B, Annunciator Key Switch	1	(0.5)



## ACM-8R Relay Module (IQ-318/IQ-636X-2)

### Features

- Provides eight Form-C relays with 5-amp contacts
- The relays can be employed to track any group of 8 software zones in the AUTOPULSE IQ-301 control system or track a variety of devices and panel points, in a group fashion, on the IQ-318 or IQ-636X-2
- Removable terminal blocks for ease of installation and service
- DIP switch selectable memory mapping of relays
- Compatible with AUTOPULSE IQ-318 and IQ-636X-2 control units

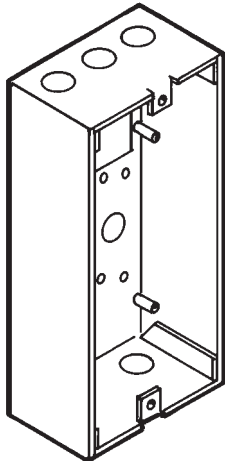
### Applications

The ACM-8R is a module in the ACS class of annunciators and will mount to an ABS-8RB annunciator surface-mount back box with blank faceplate. It provides the AUTOPULSE IQ-318 or IQ-636X-2 control system with a mappable relay control module. The relays on this module can be selected for mapping anywhere in the AUTOPULSE IQ-318 or IQ-636X-2 (by groups of eight) control system memory map.

### Description

Communication between the control unit and the ACM-8R is accomplished over a two-wire EIA-485 serial interface. This communication, to include the wiring, is supervised by the AUTOPULSE control system. Power for the annunciators is provided via a separate power loop from the control unit which is inherently supervised (loss of power also results in a communication failure at the control unit). Up to 32 annunciators may be installed on an EIA-485 circuit.

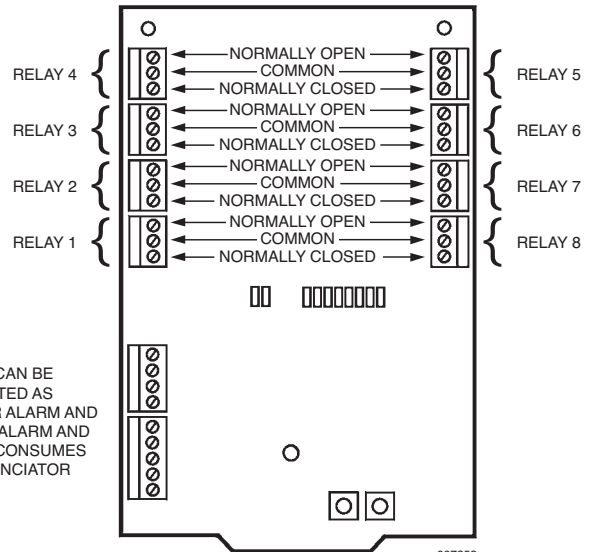
- ▶ **ABS-8RB BACK BOX:** 9 15/16 IN. x 4 5/8 IN. x 2 1/2 IN. DEEP (252 mm x 117 mm x 64 mm DEEP)



007252

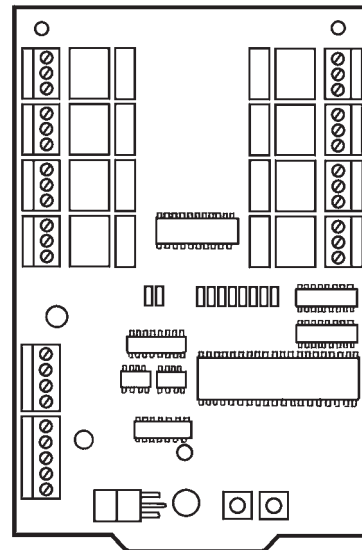
### RELAY TERMINAL ASSIGNMENTS

THE ACM-8R PROVIDES EIGHT RELAYS WITH FORM-C CONTACTS RATED FOR 5 AMPS. THE TERMINAL ASSIGNMENTS ARE ILLUSTRATED BELOW.



007253

### THE ACM-8R RELAY MODULE



007254

## Technical Information

Voltage: . . . . . 24 VDC

Standby Current: . . . . . 30 mA

Maximum Current (all relays activated): . . . . . 158 mA

### Data Communications

Port: . . . . . EIA-485 operating at 20 K baud

### Relay Contact Rating

Resistive: . . . . . 5 amps @ 125 VAC or 30 VDC

Inductive: . . . . . 2 amps @ 125 VAC

**Note:** Form-C gold-plated, silver alloy relay contacts are for medium duty switching and are not intended for motor control or pilot duty.

## Listings and Approvals\*

UL . . . . . S635

ULC . . . . . CS635 Vol. 1

MEA (NYC) . . . . . 128-07-E Vol. 5\*\*

Factory Mutual (FM) . . . . . Approved

California State Fire Marshal (CSFM) . . . . . 7120-0028: 156

\*Listings and Approvals are under NOTIFIER.

▶ \*\*Listing under Tyco Fire Protection Products.

## Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
417653	ACM-8R, Annunciator Control Module with 8 Relays	2	(0.9)
▶ 436996	ABS-8RB, Surface Back Box	1	(0.5)



# Detection and Control Components



## XP10-M Ten-Input Monitor Module (IQ-318/IQ-636X-2)

### Features

- Ten addressable Class B or five addressable Class A initiating device circuits
- Removable 12 AWG (3.25 mm<sup>2</sup>) to 18 AWG (0.9 mm<sup>2</sup>) plug-in terminal blocks
- Status indicators for each point
- Panel-Controlled Green LED Indicators
- Unused addresses may be disabled
- Rotary address switches
- Class A or Class B operation
- FlashScan® or CLIP operation
- Mount one or two modules in a BB-XP cabinet (optional)
- Mount up to six modules on a CHS-6 chassis in a CAB-3 Series or BB-25 cabinet (optional)
- Mounting hardware included

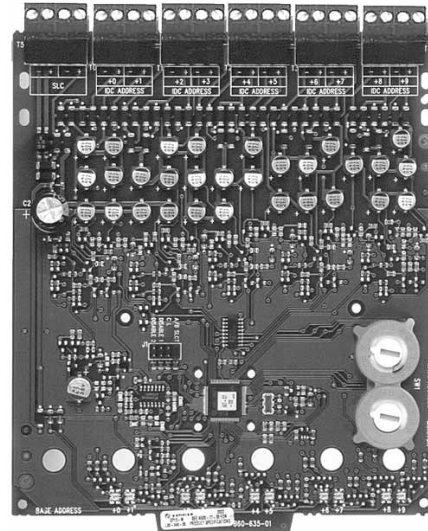
### Description

The XP10-M ten-input monitor module provides an interface between the addressable AUTOPULSE IQ-318 and IQ-636X-2 control units and normally open contact devices, such as pull stations, heat detectors, or flow switches.

The first address on the XP10-M is set from 01 to 150 and the remaining modules are automatically assigned to the next nine higher addresses. Provisions are included for disabling a maximum of two unused addresses.

The supervised state (normal, open, or short) of the monitored device is sent back to the panel. A common SLC input is used for all modules, and the initiating device loops share a common supervisory supply and ground – otherwise each monitor operates independently from the others. Each XP10-M module has panel-controlled green LED indicators.

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the unit's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.



007000

### Technical Information

Standby Current:	3.5 mA (SLC current draw with all addresses used; if some addresses are disabled, the standby current decreases.)
Alarm Current:	55 mA (assumes all ten LEDs solid ON)
Temperature Range:	32 °F to 120 °F (0 °C to 49 °C) for UL applications; 14 °F to 131 °F (-10 °C to 55 °C) for EN54 applications
Humidity Range:	10% to 85% noncondensing for UL applications; 10% to 93% noncondensing for EN54 applications
Dimensions:	
Height:	6.8 in. (172.7 mm)
Width:	5.8 in. (147.3 mm)
Depth:	1.25 in. (31.75 mm)
Wire Gauge:	12 AWG (3.25 mm <sup>2</sup> ) to 18 AWG (0.9 mm <sup>2</sup> )
Maximum SLC Wiring Resistance:	40 or 50 ohms, panel dependent
Maximum IDC Wiring Resistance:	40 ohms
Maximum IDC Voltage:	12 VDC
Maximum IDC Current:	1 mA

**Installation**

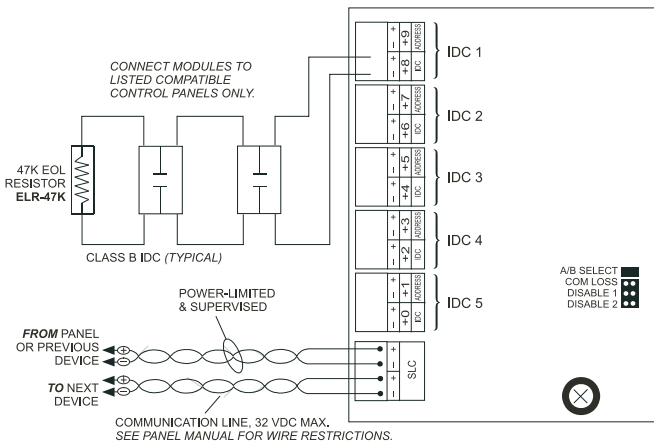
Power-limited circuits must employ type FPL, FPLR, or FPLP cable as required by Article 760 of the NEC. The XP10-M is shipped in Class B position. Remove shunt for Class A operation. Up to six XP10-M modules can be mounted on a CHS-6 chassis, which mounts in a BB-25, CAB 3 or 4, or suitably grounded metallic cabinet. One or two modules can be mounted in a BB-XP cabinet. Mounting hardware and installation instructions are provided with each module.

**Wiring**

Each XP10-M module comes with removable 12 AWG (3.25 mm<sup>2</sup>) to 18 AWG (0.9 mm<sup>2</sup>) plug-in terminal blocks.

**Typical Initiating Device Circuit Configuration – Class B, Style B.**

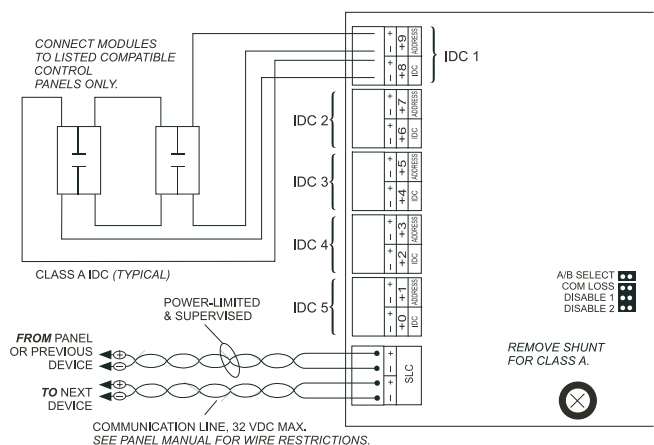
**Note:** Any number of UL-Listed contact closure devices may be used. **DO NOT MIX** fire alarm initiating and supervisory devices on the same initiating device circuit. Install contact closure devices per manufacturer’s installation instructions.



007001

**Typical Fault-Tolerant Initiating Device Circuit Configuration – Class A, Style D.**

**Note:** Any number of UL-Listed contact closure devices may be used. **DO NOT MIX** fire alarm initiating and supervisory devices on the same initiating device circuit. Install contact closure devices per manufacturer’s installation instructions.



007002

**Listings and Approvals\***

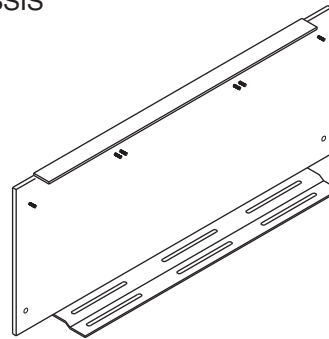
UL .....	S635
Factory Mutual (FM).....	Approved
California State Fire Marshal (CSFM) .....	7300-0028:219
MEA (NYC) .....	43-02-E
Maryland State Fire Marshal .....	Permit #2106
USCG .....	161.002/A42/1

\* Listings and Approvals are under NOTIFIER.

**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
432714	XP10-M Ten-input Monitor Module (UL)	1.1	(0.5)
428078	BB-XP Cabinet for One or Two Modules	7	(3.2)
428079	BB-25 Cabinet	15	(6.8)
428080	CHS-6 Chassis	2	(0.9)

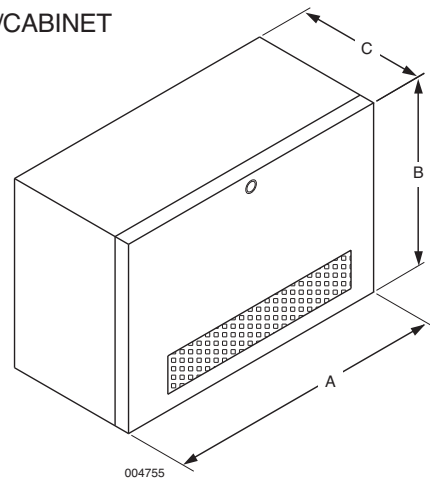
**CHS-6 CHASSIS**



004754

19 IN. WIDE X 7 5/16 IN. HIGH X 2 3/16 IN. DEEP (483 mm wide x 186 mm high x 56 mm deep)

**BACK-BOX/CABINET**



004755

	Dimensions		
	A – Width	B – Height	C – Depth
BB-25 Battery Back Box	24 in (610 mm)	12 5/8 in (321 mm)	5 1/4 in (133 mm)
BB-XP Cabinet	9 1/2 in (241 mm)	12 1/2 in (318 mm)	3 in (76 mm)

FlashScan is a registered trademark of Honeywell International.



## XP6-R Six-Relay Control Module (IQ-318/IQ-636X-2)

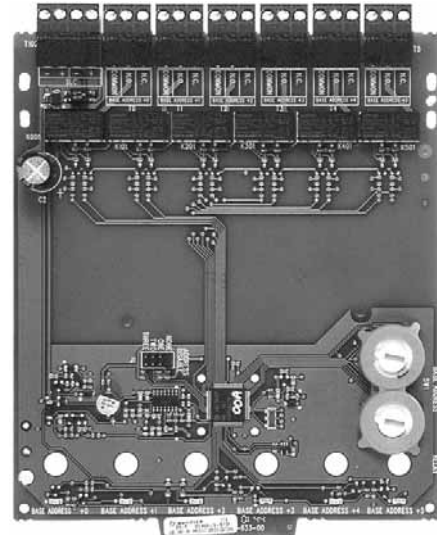
### Features

- Six addressable Form-C relay contacts
- Removable 12 AWG (3.25 mm<sup>2</sup>) to 18 AWG (0.9 mm<sup>2</sup>) plug-in terminal blocks
- Status indicators for each point
- Panel-Controlled Green LED Indicators
- Unused addresses may be disabled
- Rotary address switches
- FlashScan® or CLIP operation
- Mount one or two modules in a BB-XP cabinet (optional)
- Mount up to six modules on a CHS-6 chassis in a CAB-3 Series or BB-25 cabinet (optional)
- Mounting hardware included

### Description

The XP6-R six-relay control module provides the addressable AUTOPULSE IQ-318 and IQ-636X-2 control units with six Form-C relays. The first module is addressed from 01 to 154 while the remaining modules are automatically assigned to the next five higher addresses. Provisions are included for disabling a maximum of three unused modules. A single isolated set of dry relay contacts is provided for each module address, which is capable of being wired for either a normally-open or normally-closed operation. The module allows the control panel to switch these contacts on command. No supervision is provided for the controlled circuit. Each XP6-R module has panel-controlled green LED indicators.

FlashScan® (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the unit's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.



007003

### Technical Information

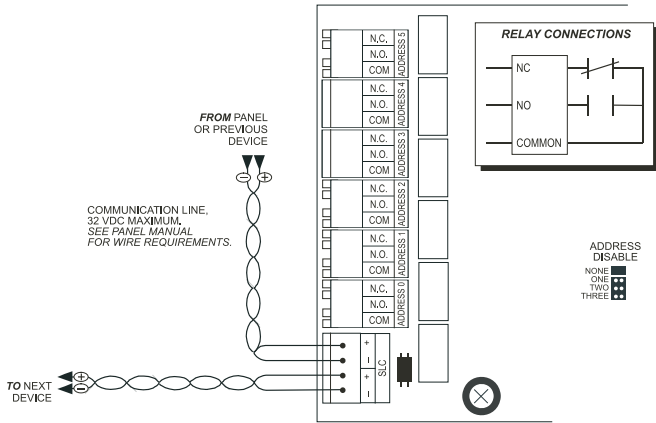
Standby Current:	1.45 mA (SLC current draw with all addresses used; if some addresses are disabled, the standby current decreases.)
Alarm Current:	32 mA (assumes all six relays have been switched once and all six LEDs solid ON)
Temperature Range:	32 °F to 120 °F (0 °C to 49 °C)
Humidity Range:	10% to 85% noncondensing
Dimensions: Height:	6.8 in. (172.7 mm)
Width:	5.8 in. (147.3 mm)
Depth:	1.0 in. (25.4 mm)
Wire Gauge:	12 AWG (3.25 mm <sup>2</sup> ) to 18 AWG (0.9 mm <sup>2</sup> )
Maximum SLC Wiring Resistance:	40 or 50 ohms, panel dependent
Relay Current:	30 mA/relay pulse (15.6 ms pulse duration), pulse under panel control
Relay Contact Ratings:	30 VDC; 125 VAC
Current Ratings:	<ul style="list-style-type: none"> <li>3.0 A @ 30 VDC maximum, resistive, non-coded</li> <li>2.0 A @ 30 VDC maximum, resistive, coded</li> <li>1.0 A @ 30 VDC maximum, inductive (L/R=2 ms), coded</li> <li>0.5 A @ 30 VDC maximum, inductive (L/R=5 ms), coded</li> <li>0.9 A @ 110 VDC maximum, resistive, non-coded</li> <li>0.9 A @ 125 VAC maximum, resistive, non-coded</li> <li>0.7 A @ 70.7 VAC maximum, inductive (PF=0.35), non-coded</li> <li>0.5 A @ 125 VAC maximum, inductive (PF=0.35), non-coded</li> </ul>

**Installation**

Up to six XP6-R modules can be mounted on a CHS-6 chassis, which mounts in a BB-25, CAB-A3, CAB 3 or 4 series cabinet. One or two modules can be mounted in BB-XP cabinet. Mounting hardware and installation instructions are provided with each module.

**Wiring**

Each XP6-R module comes with removable 12 AWG (3.25 mm<sup>2</sup>) to 18 AWG (0.9 mm<sup>2</sup>) plug-in terminal blocks.



007004

**Listings and Approvals\***

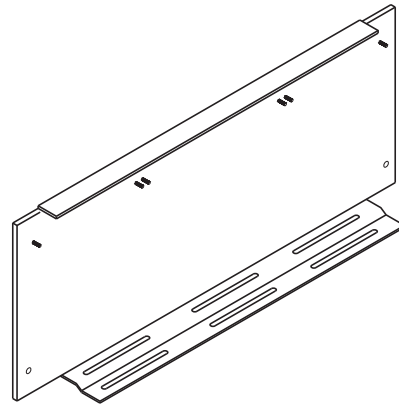
- UL . . . . . S635
- ULC . . . . . CS118 (XP6-RA)
- Factory Mutual (FM) . . . . . Approved
- California State Fire Marshal (CSFM) . . . . . 7300-0028:219
- MEA (NYC) . . . . . 368-01-E
- Maryland State Fire Marshal . . . . . Permit #2099
- USCG . . . . . 161.002/A42/1

\*Listings and Approvals are under NOTIFIER.

**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
432716	XP6-R Six-relay Control Module (UL)	1.1	(0.5)
428078	BB-XP Cabinet for One or Two Modules	7	(3.2)
428079	BB-25 Cabinet	15	(6.8)
428080	CHS-6 Chassis	2	(0.9)

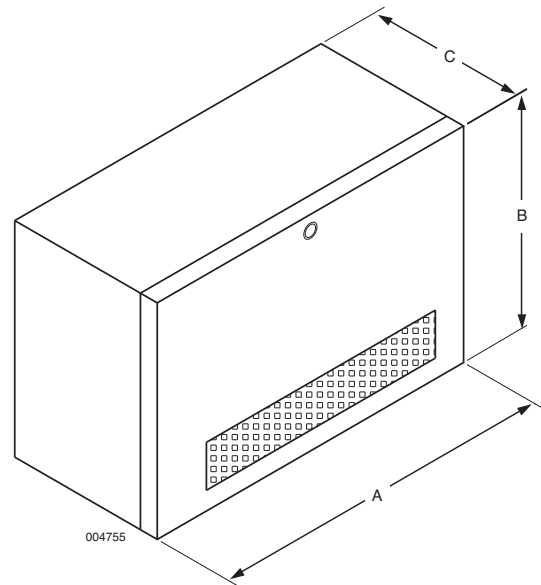
**CHS-6 CHASSIS**



19 IN. WIDE X 7 5/16 IN. HIGH X 2 3/16 IN. DEEP  
(483 mm wide x 186 mm high x 56 mm deep)

004754

**BACK-BOX/CABINET**



004755

	Dimensions		
	A – Width	B – Height	C – Depth
BB-25 Battery Back Box	24 in (610 mm)	12 5/8 in (321 mm)	5 1/4 in (133 mm)
BB-XP Cabinet	9 1/2 in (241 mm)	12 1/2 in (318 mm)	3 in (76 mm)

FlashScan is a registered trademark of Honeywell International.

# Detection and Control Components



## FDM-1 Addressable Dual Monitor Module (IQ-318/IQ-636X-2)

### Features

- Built-in type identification automatically identifies this device as a monitor module to the AUTOPULSE control unit
- Powered directly by two-wire SLC loop, no additional power required
- High noise (EMF/RFI) immunity
- SEMS screws with clamping plates for ease of wiring
- Direct-dial entry of address (01-159)
- LED flashes green during normal operation (this is a programmable option), and latches on steady RED to indicate alarm
- FlashScan® communication protocol
- Compatible with IQ-318 and IQ-636X-2

### Applications

Use the FDM-1 module to monitor two zones of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control unit. Monitored circuit may be wired as an NFPA Style B only. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. The FDM-1 does not support Style D (Class A) initiating device circuits. Maximum IDC loop resistance is 1500 ohms.

### Description

The FDM-1 is a standard-sized dual monitor module used to monitor and supervise two independent two-wire initiating device circuits (IDCs) at two separate, consecutive addresses in intelligent, two-wire systems.

Each FDM-1 uses two consecutive addresses of the 159\* available module addresses on an SLC loop. It responds to regular polls from the control unit and reports its type and the status (open/normal/short) of its IDC. A green flashing LED indicates that the module is in communication with the control unit. The LED latches on steady red to indicate alarm (subject to current limitations on the loop).

FlashScan (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the unit's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

The FDM-1 automatically assigns itself to two addressable points, starting with the original address. For example, if the FDM-1 is set to address "56," then it will automatically assign itself to addresses "56" and "57." **Note:** "ones" addresses on the FDM-1 are 0, 2, 4, 6, or 8 only. Terminals 6 and 7 use the first address, and terminals 8 and 9 use the second address.

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### NOTICE

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Avoid duplicating addresses on the system.

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### Technical Information

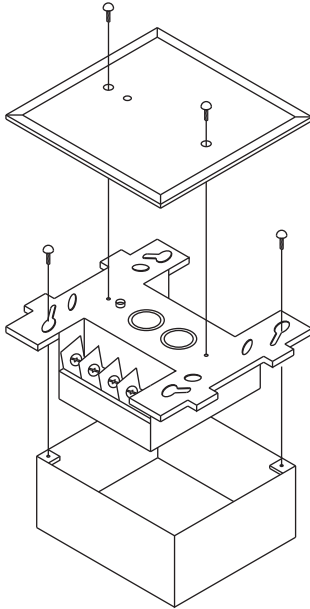
Nominal Operating Voltage: . . . . . 15 to 32 VDC  
Maximum Current Draw: . . . . . 5.7 mA (LED on)  
Maximum IDC Resistance: . . . . . 1500 ohms  
Average Operating Current: . . . . . 750  $\mu$ A (LED flashing)  
EOL Resistance: . . . . . 47K ohms  
Temperature Range: . . . . . 32 °F to 120 °F ( 0 °C to 49 °C)  
Humidity Range: . . . . . 10% to 93% non-condensing  
Dimensions:  
Height: . . . . . 4.5 in. (114 mm)  
Width: . . . . . 4 in. (102 mm)  
Depth: . . . . . 2.125 in. (54 mm)

### Installation

The FDM-1 module mounts directly to a standard 4 in. square, 2.124 in. (54 mm) deep, electrical box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.



- ▶ MOUNTING THE FDM-1 TO A 4 IN. (102 mm) SQUARE
- ▶ 2 1/8 IN. (54 mm) DEEP JUNCTION BOX



### Wiring

- Connect modules to listed compatible AUTOPULSE control units only.
- All wiring shown is supervised and power limited.
- Install contact closure devices per manufacturers' installation instructions.
- Any number of UL-listed contact closure devices may be used.
- **DO NOT MIX** fire alarm initiating, supervisory, or security devices on the same circuit.

### Listings and Approvals\*

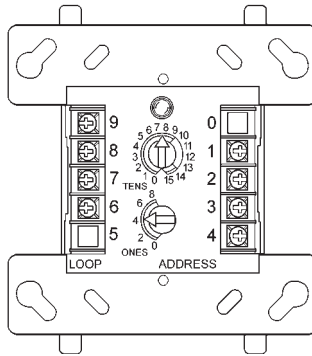
UL.....	S635
ULC.....	CS669
Factory Mutual (FM).....	Approved
California State Fire Marshal (CSFM).....	7300-0028:202
MEA (NYC).....	143-01-E
USCG.....	161.002/A42/1

\* Listings and Approvals are under NOTIFIER.

### Ordering Information

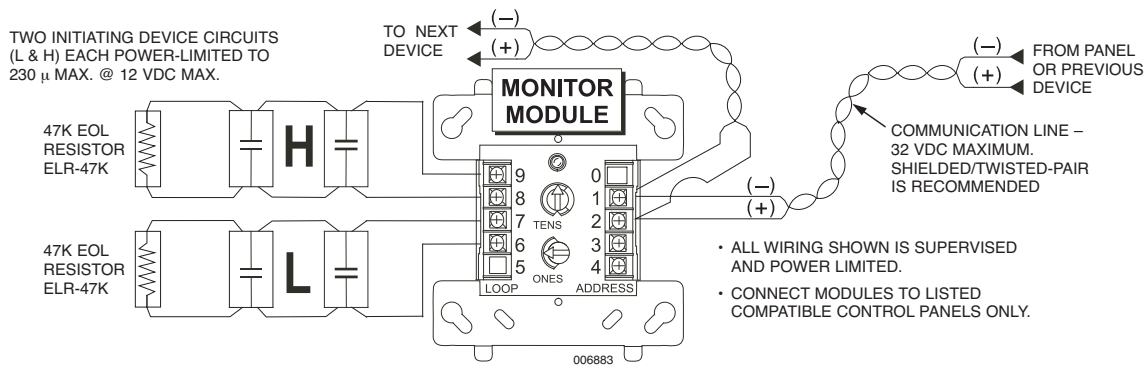
Part No.	Description	Shipping Weight	
		lb	(kg)
432294	FDM-1 Monitor Module	1	(0.45)

DETAIL OF FDM-1 – NOTE “ONES” ADDRESSES ARE 0, 2, 4, 6, 8 ONLY



006882

### TYPICAL DUAL TWO-WIRE STYLE B INITIATING DEVICE CIRCUIT CONFIGURATION



- ALL WIRING SHOWN IS SUPERVISED AND POWER LIMITED.
- CONNECT MODULES TO LISTED COMPATIBLE CONTROL PANELS ONLY.

FlashScan is a registered trademark of Honeywell International.

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 ONE STANTON STREET  
 MARINETTE, WI 54143-2542 715-735-7411

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 Form No. T-2007105-3



## FMM-101 Monitor Module (IQ-318/IQ-636X-2)

### Features

- Built-in type identification automatically identifies this device as a monitor module to the AUTOPULSE control unit
- Powered directly by two-wire FACP, no additional power required
- High noise (EMF/RFI) immunity
- Tinned, stripped leads for ease of wiring
- Direct-dial entry of address (01-159)
- FlashScan™ communication protocol

### Applications

Use the FMM-101 module to monitor a single device or a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the AUTOPULSE IQ-318 or IQ-636X-2 control unit. Monitored circuit/device is wired as an NFPA Style B (Class B) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the circuit.

The FMM-101 monitor module can be installed in a single-gang junction directly behind the monitored unit. Its small size and lightweight allow it to be installed without rigid mounting. The FMM-101 is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm and security devices.

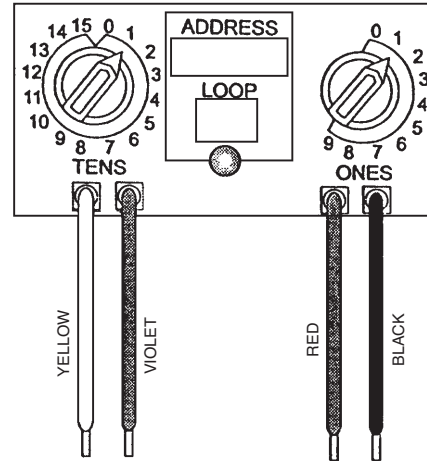
### Description

The FMM-101 is a miniature monitor module used to supervise a Class B (Style B) circuit. Its compact design allows the FMM-101 to often be mounted in a single-gang box behind the device it is monitoring. The FMM-101 can be used to replace MMX-101 module (Part No. 417478) in existing systems.

Each FMM-101 uses one of 159 available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC).

FlashScan (patent pending) is a new communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the unit's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

FlashScan is a trademark of NOTIFIER.



### Technical Information

004757

- Nominal Operating Voltage: . . . . . 15 to 32 VDC
- Average Operating Current: . . . . . 350  $\mu$ A (maximum)
- EOL Resistance: . . . . . 47K ohms
- Temperature Range: . . . . . 32 °F to 120 °F (0 °C to 49 °C)
- Humidity Range: . . . . . 10% to 93% non-condensing
- Wiring Length: . . . . . 6 in. (152 mm) minimum
- Dimensions:
  - High: . . . . . 1.3 in. (33 mm)
  - Wide: . . . . . 2.75 in. (70 mm)
  - Deep: . . . . . 0.5 in. (13 mm)

### Installation

The FMM-101 module should be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances, and regulations.

### Listings and Approvals\*

- UL . . . . . S635
- ULC . . . . . CS699
- Factory Mutual (FM) . . . . . Approved
- California State Fire Marshal (CSFM) . . . . . 7300-0028:202
- MEA . . . . . 128-07-E
- Maryland State Fire Marshal . . . . . Permit #2020
- USCG . . . . . 161.002/A42/1

\* Listings and Approvals are under NOTIFIER

### Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
428098	FMM-101 Monitor Module	1	(0.45)
437065	FMM-101A Monitor Module (ULC)	1	(0.45)



## LDM Series Lamp Driver Modules (IQ-318/IQ-636X-2)

### Features

- ALARM and TROUBLE Lamp/LED per point (IQ-318 and IQ-636X-2) or per software zone, or more dense ALARM-only option (field selectable)
- System trouble Lamp/LED signal
- On-line/power LED indicator
- Alarm and trouble resound with flash of new conditions
- Local sounder for both alarm and trouble conditions with silence/acknowledge switch connection
- Serial EIA-485 interface for reduced installation cost
- May be powered by 24 VDC from the unit or by remote power supplies
- Efficient switched power converter reduces power consumption
- Fully supervised microprocessor-controlled electronics
- Plug-in terminal blocks for ease of installation and service
- Trouble monitor option for remote power supplies

### Applications

The LDM series lamp driver modules, when combined with a custom graphic display, provide annunciation and control for the AUTOPULSE IQ-318 or IQ-636X-2 control system. These modules use a serial communications interface and may be located up to 6,000 ft (1829 m) from the unit.

The LDM-32/LDM-E32 with a custom graphic array may be used to indicate point or software zone status. In addition, the LDM-R32 module which connects to any LDM-32 or LDM-E32 converts transistor outputs to 32 Form-A dry contacts for electrical isolation when interfacing the system to other equipment.

### Description

Two basic models are available: the LDM-32 control module and the LDM-E32 expander module. Each may be selected to provide 32 alarm indications or 16 alarm and 16 trouble. Both modules mount on four standoffs inside the custom annunciator graphic box. Alternately, the modules may be installed in a CHS-4L chassis. The CHS-4L chassis may be mounted to the graphic annunciator cabinet to provide installation of up to four LDM-32 or LDM-E32 modules.

The LDM-32 includes a system trouble lamp driver and lamp test/local acknowledge switch input. Integral piezo sounder sounds for each new alarm or trouble and is silenced with the Local Acknowledge switch, or permanently disabled with a dip-switch selection. Flash of new alarms or trouble is selectable through dip switches. Switch inputs may be used for panel Silence or Reset. Instructions are included.

One LDM-E32 is allowed per LDM-32 in alarm-only mode. Three LDM-E32 modules are allowed per LDM-32 in alarm/trouble mode. The LDM-E32 includes expander ribbon cable.

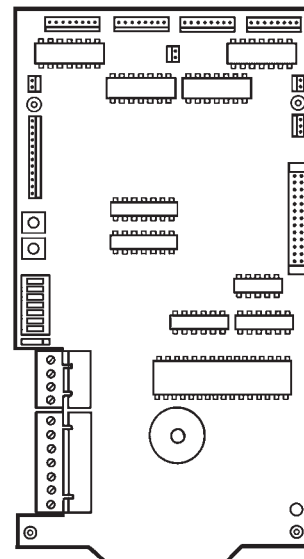
The LDM-R32 provides 32 Form-A dry contacts (1 amp @ 30 VDC) output terminal screw connections. It is mounted on an LDM-32 or an LDM-E32. A separate common is provided for each group of 8 relays. Ribbon cables to connect to the LDM-32/LDM-E32 are included.

The LDM-CBL24 and LDM-CBL48 ribbon cable sets can be ordered to provide either a 24 in. (610 mm) or 48 in. (1219 mm) connection between LDM-32/LDM-E32 and LEDs or lamps on a custom graphic unit. They each include all cables necessary for one LDM-32 or LDM-E32. Cables have a connector on one end only (split, strip, and connect other end to graphic annunciator).

Communications between the LDM series annunciators and the host AUTOPULSE control system are made through a two-wire EIA-485 multi-drop loop, and a two-wire regulated 24 VDC power loop. Up to 32 LDM systems may be connected to a single control unit, providing redundant annunciators if required. All field wiring terminations use removable, compression-type terminal blocks for ease of installation, wiring, and circuit testing.

The LDM series modules, when used with a custom graphic annunciator, provide the AUTOPULSE IQ-318 control system with up to 32 unique or redundant annunciators indicating the status of the 99 software zones. When used with the IQ-636X-2, the LDM series modules provide the system with up to 32 unique or redundant annunciators, each with a capacity of 64 points for a total capacity of 2048 points. Local or remote power supplies and serial communications allow the custom annunciators to be located virtually anywhere on the protected premises. Management of system operational controls, such as signal silence and system reset, may be accomplished through special key or push switches.

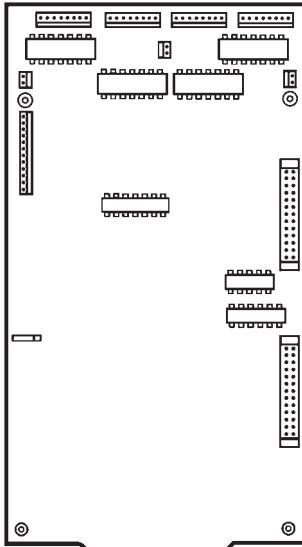
### LDM-32 CONTROL MODULE



007255

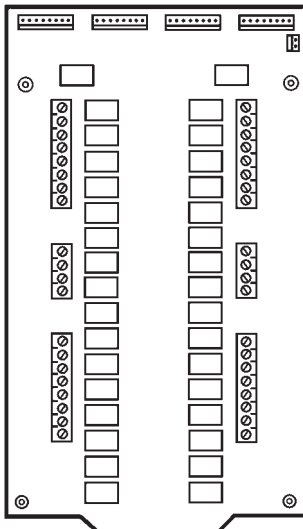
## Description (Continued)

### LDM-E32 EXPANDER MODULE



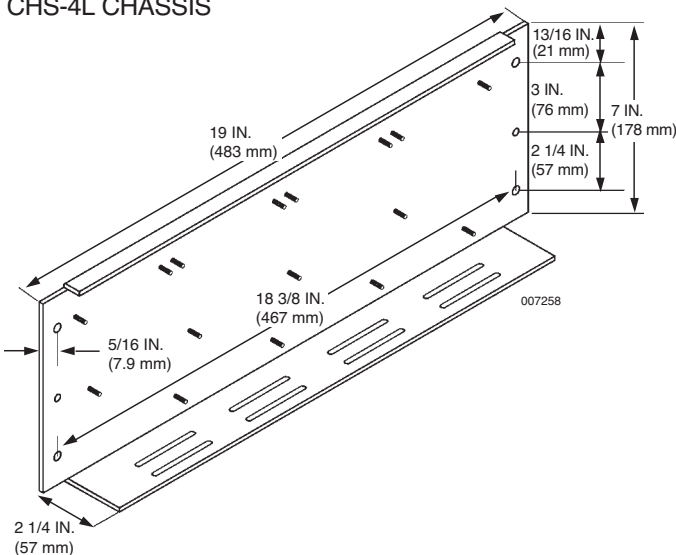
007256

### LDM-R32 RELAY EXPANDER MODULE



007257

### CHS-4L CHASSIS



## Technical Information

Size: . . . . . 4.4 in. x 7.1 in. (112 mm x 181 mm)

LDM-32 and LDM-E32

Output Driver: . . . . . Bipolar Darlington Open Collector NPN transistor

Maximum Current/Output: . . . . . 100 mA (external current limit)

Voltage Rating on Output Driver: . . . . . 30 VDC (either 24 VDC or 5 VDC)

LED: . . . . . High efficiency 2 mA

LED Resistor (5 VDC): . . . . . 680 Ω, 1/4 W (each LED)

LED Resistor (24 VDC): . . . . . 10K Ω, 1/4 W (each LED)

Switch Rating: . . . . . 5 VDC @ 0.5 mA

Standby Current

LDM-32: . . . . . 40 mA

LDM-E32: . . . . . 2 mA

Alarm Current

LDM-32: . . . . . 56 mA

LDM-E32: . . . . . 18 mA

LDM-R32: . . . . . 288 mA

Relay Contacts – LDM-R32: . . . . . 1 amp @ 30 VDC resistive, gold clad silver alloy

## Listings and Approvals\*

UL . . . . . S635

ULC . . . . . CS100

MEA (NYC) . . . . . 17-96-E, 317-01-E

Factory Mutual (FM) . . . . . Approved

California State Fire Marshal (CSFM) . . . . . 7120-0028: 156

\* Listings and Approvals are under NOTIFIER.

## Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
417501	LDM-32, Lamp Driver Annunciator Control Module	1	(0.5)
417502	LDM-E32, Lamp Driver Annunciator Expander Module	1	(0.5)
417650	LDM-R32, Lamp Driver Relay Module	1	(0.5)
417651	LDM-CBL24, Lamp Driver Annunciator Cable, 24 in. (610 mm)	0.5	(0.3)
417652	LDM-CBL48, Lamp Driver Annunciator Cable, 48 in. (1219 mm)	0.5	(0.3)
418576	CHS-4L, Chassis, Low Profile, For Up To 4 LDM Modules	1	(0.5)
437052	CHS-4L, Chassis, Low Profile (ULC)	1	(0.5)

# Detection and Control Components



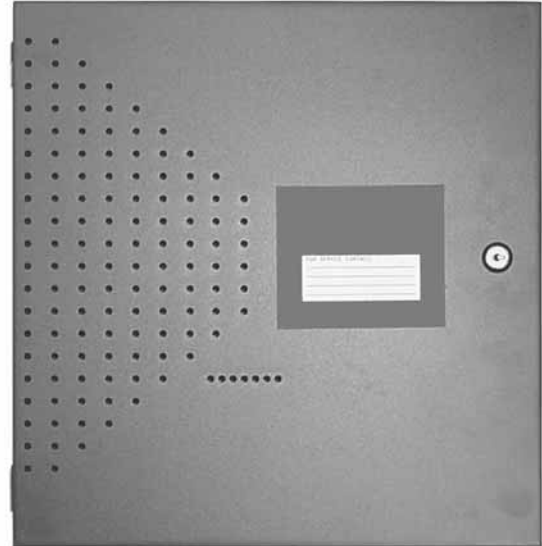
## FCPS-24S6 and FCPS-24S8 6-Amp and 8-Amp 24-Volt Remote Power Supplies (IQ-318/IQ-636X-2)

### General

The FCPS-24S6 (6-amp) and FCPS-24S8 (8-amp) are compact, cost-effective remote power supplies with battery charger. The FCPS-24S6/-24S8 may be connected to any 12- or 24-volt Fire Alarm Control Panel (FACP) or may be used as a stand-alone supply. 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-24S6/-24S8 provides regulated and filtered 24 VDC power to four notification appliance circuits configured as either four Class B (Style Y) or Class A (Style Z, with ZNAC-4 option module). Alternately, the four outputs may be configured as all non-resettable, all resettable, or two non-resettable and two resettable. The FCPS-24S6/-24S8 also contains a battery charger capable of charging up to 18 AH batteries.

### Features

- UL-Listed NAC synchronization using System Sensor, Wheelock, or Gentex “Commander2” appliances.
- Cascadable for up to ten power supplies (four for Gentex) with strobe timing maintained.
- 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 jumpered permanently “ON” (stand-alone mode).
- Four Class B (Style Y) or four Class A (Style Z, with ZNAC-4 module) NACs.
- 6-amp (FCPS-24S6) or 8-amp (FCPS-24S8) full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864).
- 4-amp (FCPS-24S6) or 6-amp (FCPS-24S8) 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), nonresettable, 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 or 8-hour delay.



007281

- 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 9.0 – 32 VDC.
- Self-contained in compact, locking cabinet – 15 in. (381 mm) high x 14.5 in. (368 mm) wide x 2.75 in. (70 mm) deep.
- 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 (3.1 mm<sup>2</sup>) wire.

### Standards and Codes

The FCPS-24S6/-24S8 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 (stand-alone mode).

### Specifications

#### Primary (AC) power:

- FCPS-24S6/-24S8: 120 VAC, 60 Hz, 3.2 A maximum.
- Wire size: minimum #14 AWG (2.0 mm<sup>2</sup>) 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 amps at 24 VDC.

Auxiliary power output: specific application power 500 mA maximum.

**Output circuits:**

- +24 VDC filtered, regulated.
- 3.0 amps maximum for any one circuit.
- Total continuous current for all outputs (stand-alone mode): for FCPS-24S6: 4.0 amps maximum; for FCPS-24S8: 6.0 amps maximum.
- Total short-term current for all outputs (NAC expander mode): for FCPS-24S6: 6.0 amps maximum; for FCPS-24S8: 8.0 amps maximum.

**Secondary power (battery) charging circuit:**

- Supports lead-acid batteries only.
- Float-charge voltage: 27.6 VDC.
- Maximum charge current: 1.5 amps
- Maximum battery capacity: 18 AH.

**Applications**

Example 1: Expand notification appliance power an additional 6.0 amps (FCPS-24S6) or 8.0 amps (FCPS-24S8). 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 amps (FCPS-24S6) or up to 6.0 amps (FCPS-24S8). 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.

**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-24S6/-24S8 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 attached to the FCPS.

When the FCPS-24S6/-24S8 is configured (via DIP switch settings) as a “sync follower,” the FCPS’s NAC outputs track the strobe synchronization pulses present at the FCPS’s sync input terminal. The pulses originate from an upstream FACP or other power supply.

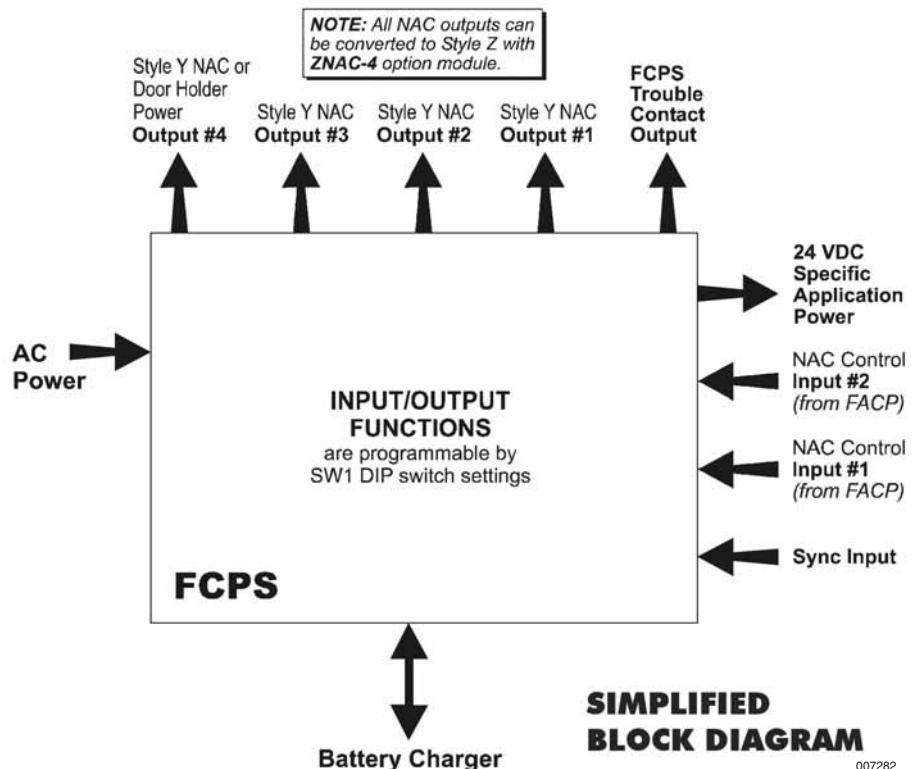
When the FCPS-24S6/-24S8 is configured (via DIP switch settings) as a “sync generator,” the FCPS’s sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS’s NAC outputs. In “sync generator” mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

**Product Line Information**

**FCPS-24S6:** 6.0 amp, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15 in. (381 mm) high x 14.5 in. (368 mm) wide x 2.75 in. (70 mm) deep), and installation instructions (Part No. 433594).

**FCPS-24S8:** 8.0 amp, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15 in. (381 mm) high x 14.5 in. (368 mm) wide x 2.75 in. (70 mm) deep), and installation instructions (Part No. 433595).

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







## ACPS-610 Addressable Charger/ Power Supply (IQ-318/IQ-636X-2)

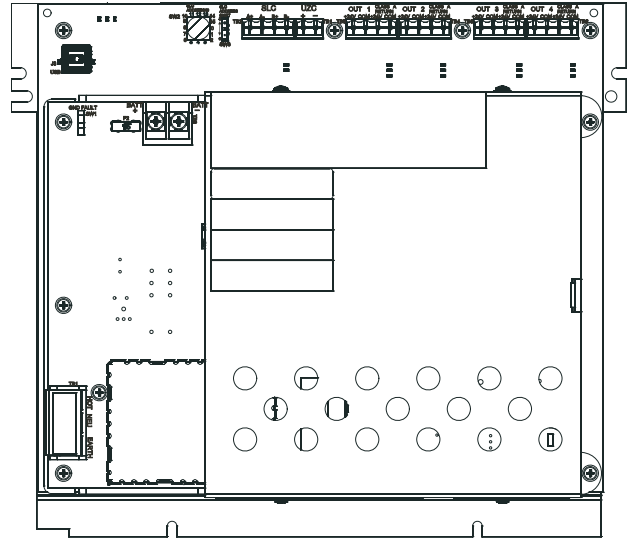
### General

The ACPS-610 is an auxiliary power supply with a battery charging option and a host of special features. Selectable charging options allow the ACPS-610 to provide 6 amps of power to four outputs while charging batteries from 12 to 200 AH, or 10 amps of power when the unit is configured for use with an external battery charger. Four individually addressable outputs can be independently configured for auxiliary power or Notification Appliance Circuits (NAC). NAC outputs support notification appliance synchronization for devices manufactured by System Sensor®, Wheelock, and Gentex. An option to disable battery charging allows the system designer to use the four built-in circuits to distribute 10 amps of power for general purposes, excluding NAC applications.

The ACPS-610 is compatible with the AUTOPULSE IQ-318/IQ-636X-2 fire suppression control panels using CLIP and FlashScan® protocol.

### Features

- Listed to UL Standard 864, 9th Edition.
- Provides 6.0 A of NAC power or 10 A of general purpose power.
- Four Class B (Style Y) or four Class A (Style Z) outputs, individually addressable by the FACP.
- When built-in outputs are configured for NAC operation, each circuit supports strobe synchronization with the following manufacturers' audio/visual devices: System Sensor (SpectrAlert® and SpectrAlert Advance Series) or Wheelock or Gentex.
- Each circuit can be software-selected for use as: a Notification Appliance Circuit, general purpose 24 VDC power, four-wire detector power, or door holder.
- Steady, March Time (120 PPM), Two Stage, Temporal, or UZC Zone-Coded and Non-Coded devices – software-selectable by circuit.
- Universal Zone Coder (UZC-256) option supports for programmable coded outputs. Up to 256 different codes.
- Charges 12 to 200 AH batteries with full supervision. The charger on the ACPS may be disabled via software. When disabled, a separate, external charger is required, for example, a CHG-120.
- May be used to provide battery backup for multiple ACPS supplies.
- AC loss detection, brownout detection, and AC loss delay reporting.
- Power-limited outputs.
- Isolated Signaling Line Circuit (SLC) interface.
- Selectable ground fault detection.
- Canadian two stage operation.



### Installation Standards

The ACPS-610 complies with the following standards:

- NFPA 70 and NFPA 72 National Fire Alarm Code
- Underwriters Laboratories UL 864, 9th Edition, Standard for Control Units for Fire Alarm Systems and CAN/ULC – S527-99.

In addition, the installer should be familiar with the following standards:

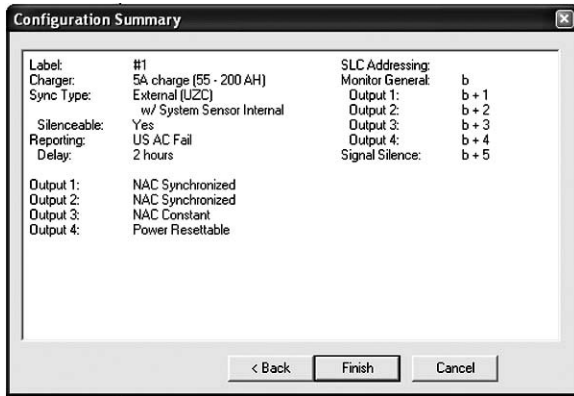
- NEC Article 760 Fire Protective Signaling Systems
- Applicable Local and State Building Codes
- Requirements of the Local Authority Having Jurisdiction

### Specifications

- Primary (AC) power:
  - ACPS-610: 120 VAC, 50/60 Hz input, 5.0 A maximum
- Output voltage: 24 VDC electrically regulated and power/limited (under primary AC mains). Under secondary power, 20.4 to 26.4 VDC.
- Output circuits – TB3, TB4, TB5, TB6 on Main Board: 1.5 A maximum for any NAC output circuit. 2.5 A maximum for any Power output with battery charger disabled.
- Secondary power (battery) charging circuit – TB3 on KAPS-24 Board: lead-acid battery charger which will charge 12 to 200 AH batteries. Maximum charger current – 5.0 A.
- Wiring: utilizes wire sizes 12 to 18 AWG (3.1 to 0.78 mm<sup>2</sup>)
- SLC specifications: Average SLC current is 1.287 mA. SLC data is transmitted between 24.0 VDC, 5 VDC, and 0 VDC at approximately 3.33 Kbaud.
- Battery fuse (F2): 15A, Slo-Blow.

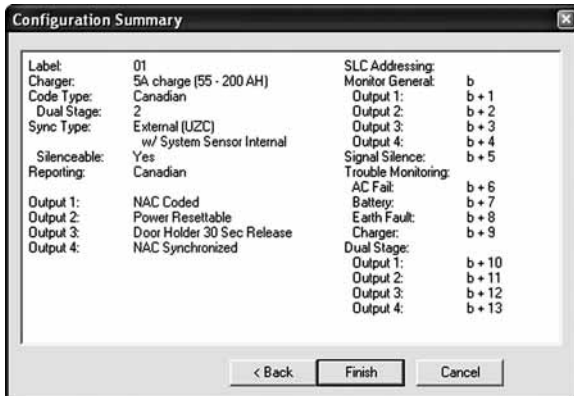
## ACPS Programming

The ACPS-610 is programmable via the simple-to-use PK-PPS programming utility, which requires a Windows® PC with a USB port and cable. A copy of the PK-PPS programming utility is included with each ACPS-610. Programming may be performed during an on-line session with the ACPS-10, or previously saved programs may be downloaded to individual ACPS-610 units. The ACPS-610 requires the use of a minimum of 5 SLC address points, and will use up to 14 SLC address points to fulfill requirements for Canadian supervision and two stage operation.



008023

Example of programming for the ACPS-610 using 6 addresses



008024

Example for ACPS-610 using Canadian reporting with Two Stage

## Listings and Approvals

UL/ULC . . . . . S635

## Ordering Information

**ACPS-610:** Addressable charger power supply, with selectable built-in synchronization, and four built-in control modules. Includes installation instructions and PK-PPS programming utility CD. Requires Windows PDC with USB port and USB cable.

**BB-25:** The BB-25 can house one ACPS-610 and two 12 volt, 26 AH batteries.

**CAB-3/-4 Series:** The ACPS-610 can mount in any of the CAB-3/-4 Series cabinets. This can be in the bottom of the cabinet or a tier via a CHS-PS and CHS-BH.

**CHS-6:** When the power supply cannot be mounted in the CAB-3/-4 Series lowest row, the ACPS-610 will require the left two of the three chassis spaces.

Part No.	Description	Shipping Weight	
		lb	(kg)
435807	ACPS-610 Addressable Charger/Power Supply – 120 VAC	7	(3.2)
437344	ACPS-610E Addressable Charger/Power Supply – 240 VAC	7	(3.2)



# Detection and Control Components



## APS2-6R(E) 6.0 Amp Auxiliary Power Supply (IQ-318/IQ-636X-2)

### General

The APS2-6R(E) is a state-of-the-art, 150 watt, switching auxiliary power supply providing 24 VDC of filtered DC power. The APS2-6R(E) provides three 24 VDC output circuits, rated for 6.0 Amps in alarm and 4.0 Amps continuous. It is used for the operation of peripheral audible/visual devices (alarm signaling appliances) for the AUTOPULSE IQ-318 or the IQ-636X-2 control panels.

**Note:** The APS2-6R(E) can also be used with Legacy panels. Please refer to the APS2-6R(E) manual for more information.

### Features

- UL 864 Ninth Edition compliant
- Lightweight, compact design
- 120 or 220/240 VAC (@ 50/60 Hz) versions
- Output circuits with overload protection
- Built-in “brown-out” circuitry
- Diagnostic trouble LED
- Plug-in connector for in-cabinet applications and screw terminals for remote device applications
- Trouble supervision bus
- Shares battery and charger circuit with control panel
- Power-limited design, per UL requirements
- AC Fail supervision and reporting with field-selectable delay per UL 864
- Heavy-duty clamp-type terminals accept up to 12 AWG (3.1 mm<sup>2</sup>) wire
- Battery voltage supervision
- Low battery disconnect
- Mounts in a standard CAB-4 Series cabinet

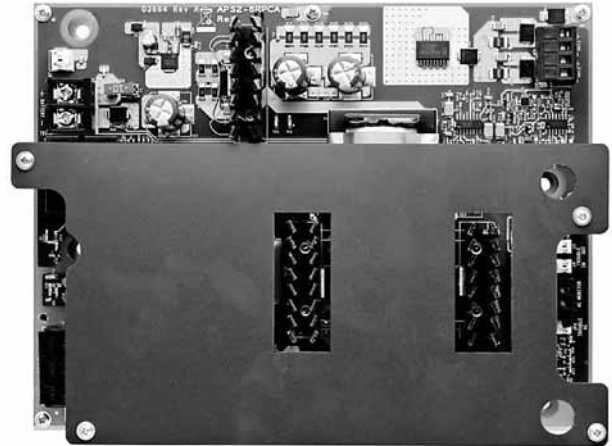
### Standards and Codes

This power supply complies with the following standards:

- NFPA 72 National Fire Alarm Code
- UL 864 Standard for Control Units and Accessories for Fire Alarm Systems

In addition, the installer should be familiar with the following standards:

- NEC Article 300 Wiring Methods
- Applicable Local and State Building Codes
- Requirements of the Local Authority Having Jurisdiction
- The Canadian Electrical Code, Part 1



008545

### Construction and Operation

When used with the CAB-4 Series (CAB-A4, -B4, -C4, or -D4), the APS2-6R(E) mounts to a CHS-4 or CHS-4L mounting chassis. If more than one APS2-6R(E) is necessary to meet the power requirements, connect additional APS2-6R(E) power supplies together as described in the Installation Instruction Manual for the APS2-6R(E).

Underwriters Laboratories requires that all Signaling Appliances be approved for use with the selected control system due to voltage operating range criteria. Use only those appliances listed for use with the associated control system. Refer to Device Compatibility Document, Part No. 50054.

### Specifications

#### Electrical Specifications

- AC primary input power (TB1): APS2-6R: 120 VAC, 50/60 Hz, 2.9 A., APS2-6RE : 220-240 VAC, 50/60 Hz, 1.5 A.
- DC secondary input power (TB3): TB3-1 (+), TB3-2 (-).
- 24 VDC output power (TB2): Total 6.0 A (4.0 A continuous).  
Circuit 1 (TB2-1, TB2-2): 3.0 A @ 24 VDC power-limited.  
Circuit 2 (TB2-3, TB2-4): 3.0 A @ 24 VDC power-limited.
- 24 VDC output power (J9): 6.0 A (4.0 A continuous), Non-Power Limited.
- Relay Contacts (TB4): AC Fail supervision over the SLC.
- Fuse: (F2 battery supervision): 32 VAC, 10.0 A, Fast-Acting Automotive Minifuse.
- Trouble supervision bus: J3 output: Form-A contact (open collector). J4 input: Form-A contact (open collector).  
**Note:** J3 and J4 can be interchanged.
- Loss of AC indication: Immediate indication (default); 1-2 hour delay (cut JP2); 2-3 hour delay (cut JP2 and JP3).



## Specifications (Continued)

### Mechanical Specifications

- ▶ The APS2-6R(E) measures approximately 8.63 in. (219 mm)
- ▶ x 6.63 in. (168 mm) x 2.38 in. (60 mm) and weighs approximately 2 lb (0.91 kg).

### Cabinet for Mounting

CAB-4 Series: Use CHS-4 and CHS-4L chassis for the AUTOPULSE IQ-636X-2 control panel.

### Listings and Approvals\*

UL Listed . . . . .S635

FM . . . . .Approved

\*Listings and Approvals are under NOTIFIER.

### Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
436863	APS2-6R 24-Volt Filtered Power Supply 120 VAC	2	(0.9)
436864	APS2-6RE 24-Volt Filtered Power Supply 220-240 VAC	2	(0.9)
417699	EOLR-1 12/24 VDC End-of-Line Relay	1	(0.5)
437070	EOLR-1A 12/24 VDC End-of-Line Relay (ULC)	1	(0.5)
419586	CHS-4 Four-Module Chassis	9	(4.1)
437051	CHS-4 Four-Module Chassis (ULC)	9	(4.1)
418576	CHS-4L Four-Module Chassis (Low Profile)	1	(0.5)
437052	CHS-4L Four-Module Chassis (Low Profile) (ULC)	1	(0.5)



## UDACT – Universal Digital Alarm Communicator Transmitter (IQ-318/IQ-636X-2)

### Features

- Dual phone lines
- Dual telephone line voltage detect
- Surface Mount Technology
- Compact in size 6 3/4 x 4 1/4 inch (172 x 108 mm)
- Built-in programmer
- Built-in 4 character red 7-segment LED display
- Manual Test Report function
- Manual Transmission Clear function
- Mounts in a separate enclosure (ABS-8RB)
- Communicates vital system status
- Annunciation of UDACT Troubles including: loss of phone lines, communication failure with either Central Station, total communication failure
- Troubleshoot Mode converts keypad to DTMF touchpad
- Individual LEDs for: Power, EIA-485 Loss, Manual Test, Kissoff, Comm Fail, Primary Line Seize, Secondary Line Seize, and Modem Communications
- Open Collector relay driver for Total Communications Failure or UDACT trouble
- Real-time clock
- Extensive transient protection
- Simple EIA-485 Interface to host unit

### Description

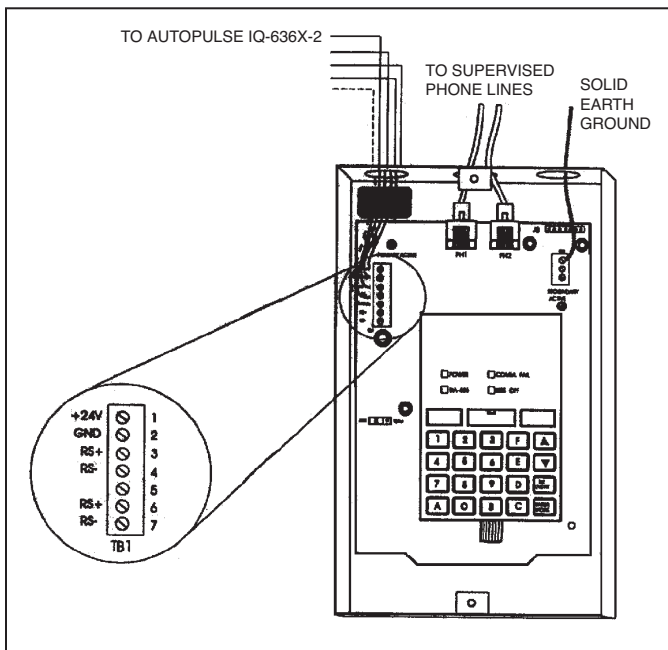
The Universal Digital Alarm Communicator Transmitter (UDACT) is designed for use on the AUTOPULSE IQ-318 and AUTOPULSE IQ-636X-2 control units. It is also designed for use on the Intelligent Network Annunciator (INA), software release 2.8 or higher. When used in conjunction with the INA, the UDACT can report the status of all control units on **NOTI-FIRE-NET™**. The UDACT transmits system status to UL listed Central Station Receivers via the public switched telephone network.

The UDACT is compact in size and may be mounted externally in a separate cabinet. EIA-485 annunciator communications bus and regulated 24 volt connections are required.

The UDACT is capable of transmitting the status of software zones (Alarm and Trouble), System Trouble, Panel Off-Normal, Supervisory, Bell Trouble, Low Battery, and AC Fail. When used with the AUTOPULSE IQ-318 and IQ-636X-2 the UDACT is capable of reporting 567 points. Reporting may be in the form of software zones (99 plus 16 special), panel circuits 1-4, panel output modules 1-64, and 192 points per SLC loop (the first 96 detector and 96 module addresses).

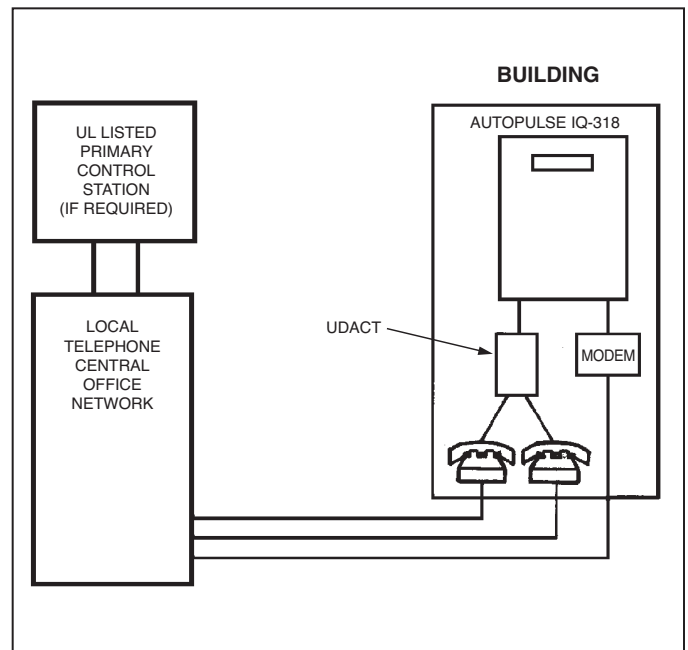
The Universal Digital Alarm Communicator Transmitter (UDACT) provides the means to create a powerful, low cost, local area network solution for any application involving multiple facilities spread over a small geographic area, such as hospitals, college campuses, shopping malls, prisons, airports, grouped government facilities, power plants, large commercial facilities, and much more.

UDACT IN ABS-8R (SHOWN WITH COVER REMOVED)



002374

LOCAL AREA NETWORK



002373

The UDACT when used in the Contact ID format transmits detailed system status via the standard public switched telephone network to a digital receiver. The telephone network becomes the "network gateway" from the FACP to the digital receiver and to an optional UniNet monitor.

Contact ID is a transmission format enabling transmission of alarm and trouble conditions on a bi-point basis. Three groups of information are transmitted to the central station: a four-digit account code, a group number (00-99), and the device or zone number (000-999). Each of these three information groups is programmable. Because of the virtually unlimited number of combinations, the number of systems, points and/or zones transmitted is boundless.

**Technical Information**

Standby current: . . . . . 40 mA  
 Current while communicating: . . . . . 75 mA  
 Maximum current while communicating  
 and with open collector output activated: . . . . . 100 mA  
 Voltage: . . . . . Regulated 24 volts  
 Range: . . . . . 21.2 to 28.2 volts

Required software:

- IQ-301 EPROM = 73609 (or higher)
- IQ-396X EPROM = #AFP4R 2.0 (or higher)
- IQ-318 = All
- IQ-636X = All
- IQ-636X-2 = All

**Listings and Approvals\***

UL . . . . . S635  
 ULC . . . . . CS100 Vol. VII  
 Factory Mutual (FM) . . . . . Approved  
 California State Fire Marshal (CSFM) . . . . . 7300-0028:174  
 MEA . . . . . 328-94-E  
 Industry Canada . . . . . 2132 6030 A  
 FCC . . . . . IWGUSA-20723-AL-E

\* Listings and Approvals are under NOTIFIER

**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
419411	UDACT Universal Digital Alarm COM/XMTR	2	(0.9)
436996	ABS-8RB Surface Back Box	1	(0.5)

**COMPATIBILITY CHART**

Format # (Addresses 16 & 42)	Ademco 685 (1)	Silent Knight 9000	ITI CS-400 (3)	FBI CP220FB	Osborne Hoffman Models 1 & 2	Radionics 8000/ 5800 (5)	Senco 3000R (7)	Surguard MLR-2 (9)
0 4+1 Ademco Express	✓			✓				✓
1 4+2 Ademco Express	✓			✓	✓(8)			✓
2 3+1/Standard/1800/2300	✓	✓ (2)	✓	✓ (4)	✓	✓ (5,6)	✓	✓
3 (Not Used)								
4 3+1/Standard/1900/1400	✓	✓ (2)		✓ (4)	✓		✓	✓
5 (Not Used)								
6 4+1/Standard/1800/2300	✓	✓(2)	✓	✓ (4)	✓	✓ (5)	✓	✓
7 (Not Used)								
8 4+1/Standard/1900/1400	✓	✓ (2)		✓ (4)	✓		✓	✓
9 (Not Used)								
A 4+2/Standard/1800/2300	✓	✓ (2)	✓	✓ (4)	✓	✓ (5)	✓	✓
B (Not Used)								
C 4+2/Standard/1900/1400	✓	✓ (2)		✓ (4)	✓		✓	✓
D (Not Used)								
E Ademco Contact ID	✓			✓	✓			✓
F (Not Used)								

- (1) With 685-8 Line Card with Rev 4.4d software
- (2) With 9002 Line Card Rev 9035 software or 9032 Line Card with 9326A software
- (3) Rev 4.0 software.
- (4) FBI CP220FB Rec-11 Lin Card with Rev 2.6 software and a memory card with Rev 3.8 software

- (5) Model 6500 with Rev 600 software
- (6) Model 6000 with Rev 204 software
- (7) With Rev B control card at Rev 1.4 software and Rev C line card at Rev 1.5 software
- (8) Model 2 only
- (9) Version 1.62 software

# Detection and Control Components



## CHG-120 Battery Charger and Meters (IQ-318/IQ-636X-2)

### Features

- Charges sealed lead-acid batteries
- Automatic float-type battery charger
- Rated for batteries of 25 to 120 ampere-hours
- Obtains full float voltage within 48 hours
- For use on any 24-volt FACP which can handle the specified batteries and can disable the local charger
- AC Fail delay (central station applications) per latest NFPA requirements
- Form-C Trouble contact
- Dual outputs, for easy load distribution
- Diagnostic LEDs:
  - Primary AC On
  - Charger Trouble
  - Ground Fault
  - Hi Charge
  - Lo Charge
  - Battery Voltage Level (3 LEDs)
  - Low Battery
- Optional BB-55 battery cabinet
- Field-selectable input voltage, 120 VAC or 230 VAC
- Charges:
  - 25 AH batteries within 9 hours
  - 55/60 AH batteries within 20 hours
  - 120 AH batteries within 38 hours

### Applications

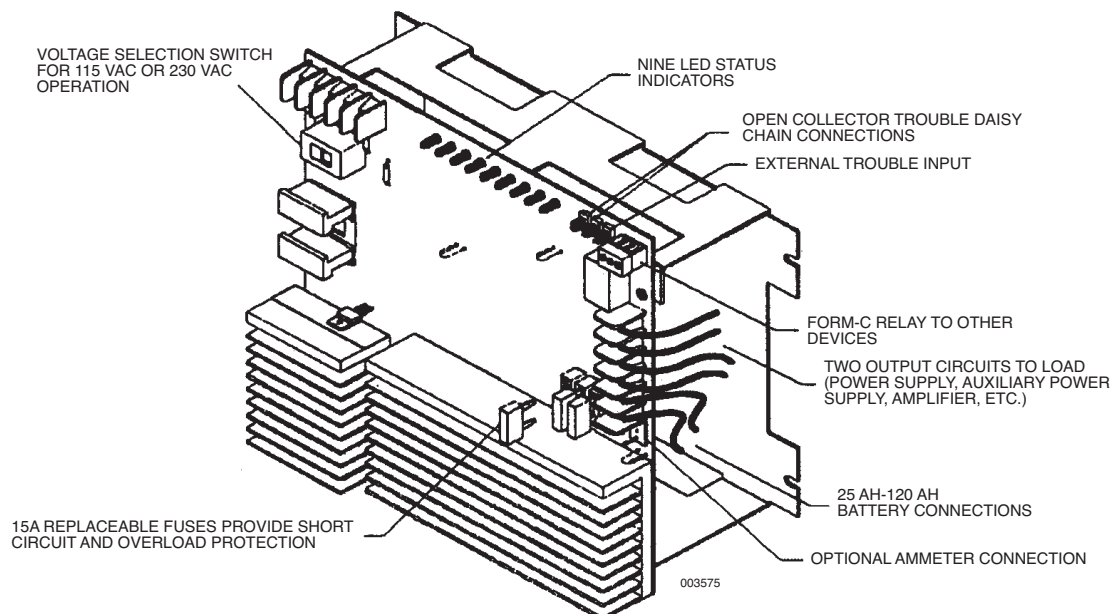
Use the CHG-120 battery charger with the AUTOPULSE IQ-318 or IQ-636X-2 control units when batteries required for standby are rated equal to or greater than 25 ampere-hours. Up to two batteries may be charged when either the 25AH or 60AH are installed.

### Description

The CHG-120 battery charger is a state-of-the-art battery charging system designed for use with the AUTOPULSE IQ-318 or IQ-636X-2. It is designed to charge lead-acid batteries between 25 and 120 ampere-hours (AH).

The CHG-120 consists of a PC board and mounting chassis. Charging current is provided automatically when the battery voltage falls below the charger's output voltage.

### CHG-120 BATTERY CHARGER



**Technical Information**

Primary AC power in (TB1):..... 115 VAC, 60 Hz, 2 A  
 230 VAC, 50 Hz, 1 A

Form-C relay (TB3): ..... 5 A at 30 VDC

Float charge voltage: ..... 27.6 VDC

Maximum charging current:..... 4.5 A

Fuses F1-F3: ..... 15 A

Battery sizes: ..... 25 AH to 120 AH

Charging time (for 2 fully discharged batteries)

    25 AH ..... 9 Hours

    55 AH/60 AH..... 20 Hours

    120 AH ..... 38 Hours

High: ..... 4 5/8 in. (118 mm)

Wide: ..... 3 in. (76 mm)

Deep: ..... 1 3/4 in. (44 mm)

**Mounting Options**

The CHG-120 has a variety of mounting options. It can be mounted in either a CAB-3 or CAB-4 or remotely in the BB-55 Battery Back Box. Install the CHG-120 within 20 ft (6.01 m) of the main AUTOPULSE control unit.

**Mounting in CAB-3 or CAB-4 Series Backbox:**

The CHG-120 can be mounted in the main power supply position, on the lower left of the CAB-3 or CAB-4 cabinet.

Using self-tapping screws, the CHG-120 can be mounted in the lower right position (normally, where the batteries are mounted) of the CAB-3 or CAB-4.

**Remote mounting in the BB-55:**

The CHG-120 mounts in the left position of the cabinet.

**Note:** Only one 60AH, 12V battery or two 25AH, 12 V batteries will mount with the charger board in the BB-55.

**BB-55 Battery Box Battery Configurations:**

**Without CHG-120 mounted internally:**

- Up to two 25AH, 12V batteries
- Up to two 60AH, 12V batteries

**With CHG-120 mounted internally:**

- Up to two 25AH, 12V batteries
- Up to one 60AH, 12V battery

**Listings and Approvals\***

UL ..... S674

ULC..... CS118/CS733 VOL. IX

Factory Mutual (FM). .... Approved

California State Fire Marshal (CSFM) ..... 7315-0028:189

MEA (NYC) ..... 195-97-E

\*Listings and Approvals are under NOTIFIER.

**Ordering Information**

Part No.	Description	Shipping Weight	
		lb	(kg)
426207	CHG-120 Battery Charger	5.0	(2.3)





## Annunciator Back Boxes (IQ-318/IQ-636X-2)

### Description

The Annunciator back boxes are used for mounting the LCD-80, AEM, ACS, or AFM annunciator modules.

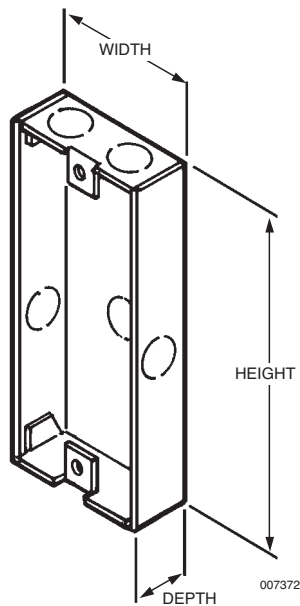
**ABS-1B** – The Annunciator Surface Box-1 provides for the remote mounting of a single ACM or AFM annunciator in a surface-mount enclosure. Knockouts are provided for use with 1/2 in. conduit. The annunciator mounts directly to the ABS-1B without a dress plate.

**ABS-2B** – The Annunciator Surface Box-2 provides for the surface mounting of one ACM-16AT/AEM-16AT combination or one ACM-32A/AEM-32A combination. Knockouts are provided for use with 1/2 in. conduit. The annunciators mount directly to the ABS-2B without a dress plate.

### ABS-1B AND ABS-2B SURFACE BACK BOXES

ABS-1B: 8 1/2 IN. (H) x 4 1/2 IN. (W) x 1 3/8 IN. (D)  
(216 mm (H) x 114 mm (W) x 35 mm (D))

ABS-2B: 8 1/2 IN. (H) x 8 15/16 IN. (W) x 1 3/8 IN. (D)  
(216 mm (H) x 227 mm (W) x 35 mm (D))

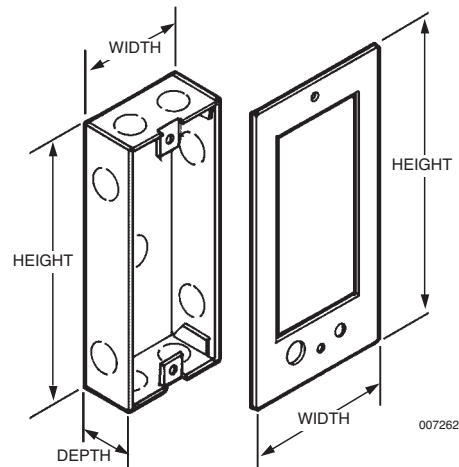


**ABF-1B** – The Annunciator Flush Box-1 provides for the remote mounting of a LCD-80 or a single ACM or AFM annunciator in a flush-mount enclosure. Knockouts are provided for use with 1/2 in. conduit. The ABF-1B includes a painted gray metal trim plate, mounting hardware, and an adhesive-backed Annunciator Label for the dress plate.

### ▶ ABF-1B FLUSH BACK BOX

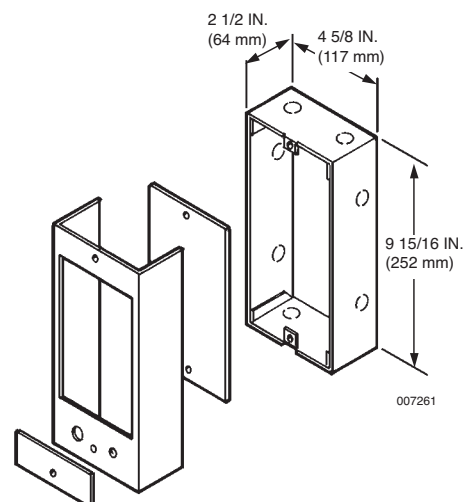
▶ 9 15/16 IN. (H) x 4 5/8 IN. (W) x 2 1/2 IN. (D)  
(252 mm (H) x 117 mm (W) x 64 mm (D))

TRIMPLATE: 11 IN. (H) x 6 1/4 IN. (W)  
(279 mm (H) x 159 mm (W))



**ABS-1TB** – The ABS-1TB is an attractive surface mount back box for mounting a LCD-80 or one ACM or AFM annunciator.

### ABS-1TB SURFACE BACK BOX



## Technical Information

### Box Type    Annunciator Compatibility

---

ABS-1B	ACM-16AT, ACM-32A, AFM-16AT, AFM-32A
ABS-2B	ACM-16AT/AEM-16AT, ACM-32A/AEM-32A
ABF-1B*	LCD-80, ACM-16AT, ACM-32A, AFM-16AT, AFM-32A
ABS-1TB	LCD-80, AFM-16AT, AFM-32A, ACM Type with AKS-1B (key switch)

\*Includes painted black metal trim plate

## Approvals

UL ..... S635

## Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
417657	ABF-1B, Annunciator Back Box, Flush, Single	1	(0.45)
417493	ABS-1TB, Annunciator Back Box, Surface Single, Deep	1	(0.45)
417660	AKS-1B, Annunciator Key Switch	1	(0.45)

# Detection and Control Components



## FDU-80G 80-Character Liquid Crystal Display Fire Annunciator (IQ-318/IQ-636X-2)

### General

The FDU-80G is a compact, 80 character, backlit LCD Fire Annunciator for use with the AUTOPULSE IQ-318 and IQ-636X-2 Fire Alarm Control Panels (FACPs). The FDU-80G mimics the display of the control panel and displays complete system point status information. Up to 32 FDU-80Gs may be connected onto the EIA-485 Terminal Mode port of each control panel. The FDU-80G requires no programming, which saves times during system commissioning.

The FDU-80G can be used on the same data loop as the LCD-80/LCD-80TM annunciators revision 1.6 software or higher.

### Features

- 80-character Liquid Crystal Display
- Mimics all display information from the host panel
- Control switches for System Acknowledge, Signal Silence, Drill and Reset with enable key
- System status LEDs for Power, Alarm, Trouble, Supervisory, and Alarm Silenced
- No programming necessary – FDU-80G connects to the terminal mode port
- Displays device type identifiers, individual point alarm, trouble or supervisory, zone and custom alpha labels
- Time and date display field
- Aesthetically pleasing design
- May be powered by 24 VDC from the host FACP or by remote power supplies (requires 24 VDC)
- Up to 32 FDU-80G annunciators per FACP
- Plug-in terminal blocks for ease of installation and service
- Can be remotely located up to 6,000 ft (1828.8 m) from host control panel
- Local piezo sounder with alarm and trouble resound
- ▶ Semi-flush mounts to 2.188 in. (56 mm) minimum deep, three-gang electrical box or three-gangable electrical switchbox
- Surface mounts to SBB-3 surface backbox



007714

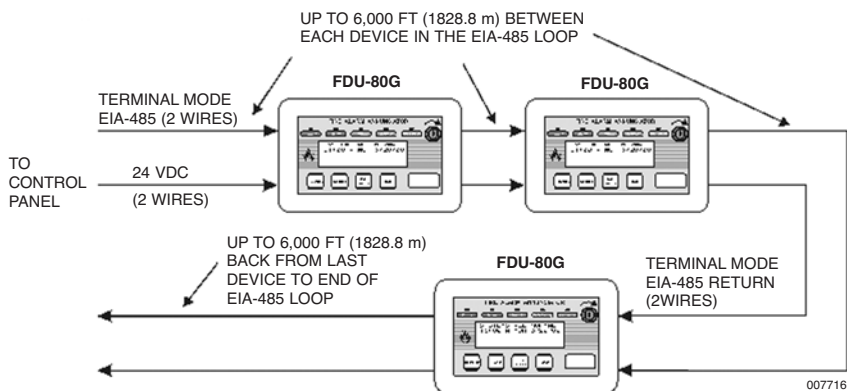
### Operation

The FDU-80G annunciator provides the FACP with point annunciation with full display text on an 80-character LCD display. The FDU-80G also provides an array of LEDs to indicate system status, and also includes control switches for remote control of critical system functions.

The FDU-80G provides the FACP with up to 32 remote serially connected annunciators. All field-wiring terminations on the FDU-80G use removable, compression-type terminal blocks for ease of wiring and circuit testing.

Communication between the FACP and the annunciators is accomplished over an EIA-485 serial interface, which greatly reduces wire and installation cost over traditional systems. Six wires total are required: four for the EIA-485 communications (two in and two return); and two for the 24 VDC regulated power. Dip switches control local functions such as: piezo disable, control switches/key switch disable, transmit/receive mode.

## FDU-80G Terminal Mode Wiring Example



### Notes:

- ▶ 1. EIA-485: Maximum of 6,000 ft (1828.8 m) cable length from FACP to FDU-80G annunciators and back to FACP (6,000 ft (1828.8 m) total). Circuit is power limited.
- 2. Up to 32 FDU-80G annunciators may be used on the EIA-485 circuit. When multiple FDU-80Gs are used, certain panels will require additional power supplies (refer to panel documentation).
- 3. Between each FDU-80G annunciator are four wires: a twisted-shielded pair for data communications and a pair for 24 VDC power. The return circuit only requires two wires for data communication supervision, wired from the last FDU-80G annunciator on the loop.
- 4. The FDU-80G annunciator can be semi-flush mounted in a three-gang electrical box with a minimum depth of 2.188 in. (5.6 cm).

### Listings and Approvals\*

UL ..... S635  
 FM ..... Approved  
 California State Fire Marshal ..... 7120-0028:209

\*Listings and Approvals are under NOTIFIER.

### Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
435530	FDU-80G Annunciator	5.0	(2.3)
▶ 436141	SBB-3, Back Box, Surface	2.0	(0.9)

# Detection and Control Components



## LCD2-80 Liquid Crystal Display Terminal Mode Annunciator (IQ-318, IQ-636X-2)

### General

The LCD2-80 is a backlit LCD annunciator for the Addressable AUTOPULSE fire suppression control panels that support the 80-character display format. The LCD2-80 may be connected onto the four-wire EIA-485 terminal port.

The LCD2-80 mimics the display of the IQ-318 and IQ-636X-2 control panels, the NCA-2 annunciator, and legacy panels (IQ-301, IQ-396X, and IQ-636X) that supported the LCD-80/LCD-80TM. Up to 32 LCD2-80 units can annunciate and provide remote reset, acknowledge, drill and silence of the control panel from remote locations.

**Note:** The LCD2-80 can be used with legacy panels that supported the LCD-80 terminal mode operation. Please refer to the LCD2-80 manual for more information.

### Features

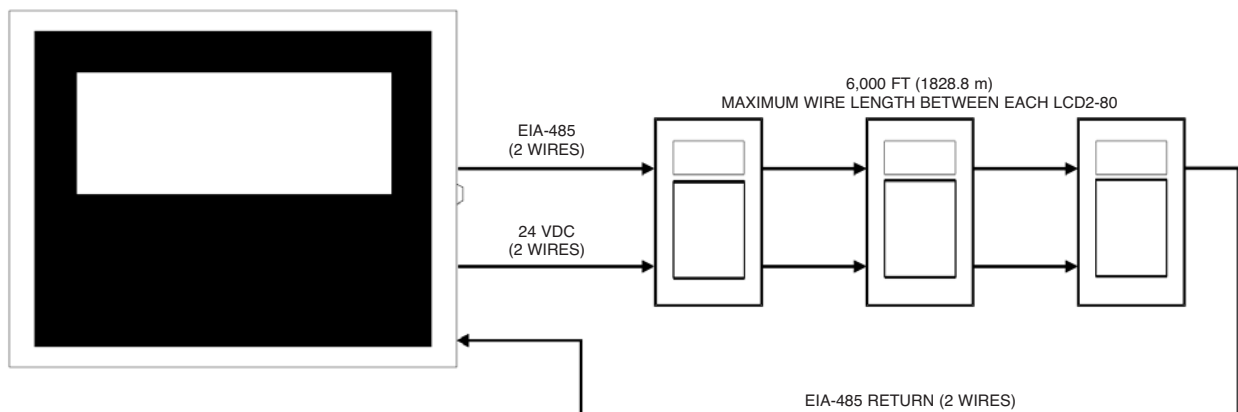
- 80-character backlit Liquid Crystal Display (20 characters x 4 lines)
- Display mimics panel or NCA annunciator
  - Event message
  - 20 characters for point label
  - 12 characters for extended label
  - Time, date, and point address
- Control switches for System Acknowledge, Signal Silence Drill, and System Reset
- Mounts up to 6,000 ft (1828.8 m) segments between units
- Local piezo sounder with alarm/trouble resound
- Displays all analog, addressable points
- Displays device type identifiers
- Displays device and zone custom alpha labels
- Mounts to any CHS-4 chassis slot
- Slide-in label can be customized



008850

- Flush/surface/panel mount option
- No programming necessary; LCD2-80 displays time, date, and custom messages received from the compatible panel or network annunciator
- LCD2-80 is 8.25 in. (210 mm) high, 4.375 in. (111 mm) wide, and 1.75 in. (44 mm) deep
- Up to 32 LCD2-80 annunciators may be used on one EIA-485 circuit

**Note:** The LCD2-80 must have sufficient regulated 24-volt power.



IQ-318, IQ-636X-2 or NCA-2 Connecting to LCD2-80

008851



## 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 ..... S635  
ULC Listed ..... S635  
FM ..... Approved  
FDNY ..... COA# 6067, 6065  
CSFM ..... 7165-0028:0243, 7165-0028-0224

## Ordering Information

LCD2-80: Liquid Crystal Display Terminal Mode Annunciator. May be connected onto the four-wire EIA-485 terminal port.

ADP-4B: Annunciator dress plate, black. Allows panel mounting of up to four LCD2-80 modules in a CAB-4 Series cabinet.

ABF-1B: Annunciator flush box, 9.938 in. (252 mm) high, 4.625 in. (117 mm) wide, and 2.5 in. (64 mm) deep. Order AKS-1B key switch.

ABS-1TB: Deep surface back box (mounts one LCD2-80).

AKS-1B: Key Switch (black) to enable/disable controls when mounted in ABF-1B or ABS-1TB.

Part No.	Description	Shipping Weight	
		lb	(kg)
438773	LCD2-80 Terminal Mode Annunciator	2	(0.9)
433520	ADP-4B Annunciator Dress Plate	1	(0.5)
417657	ABF-1B Annunciator Back Box, Flush, Single	1	(0.5)
417493	ABS-1TB Annunciator Back Box, Surface, Deep	1	(0.5)
417660	AKS-1B Annunciator Key Switch	1	(0.5)

# Detection and Control Components



## NCA-2 AUTOPULSE Series Network Control Annunciator (IQ-318/IQ-636X-2)

### General

The NOTIFIER NCA-2 is a second-generation Network Control Annunciator compatible for use with AUTOPULSE IQ-318 and IQ-636X-2 fire alarm control panels, as well as first-generation NCA Network Control Annunciators. The NCA-2 provides system control and display capabilities.

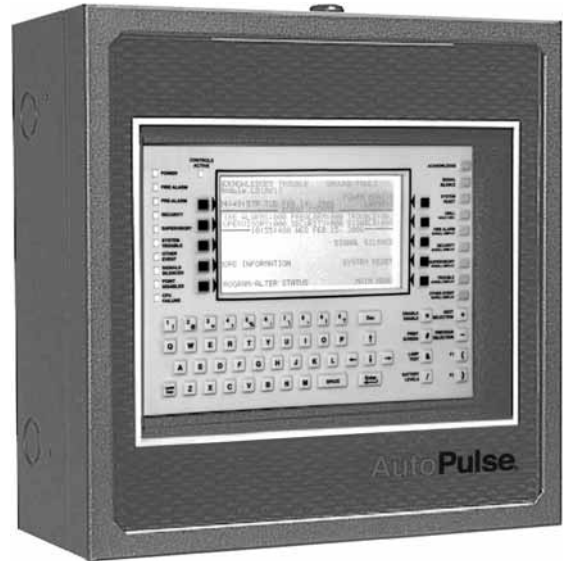
The NCA-2 display consists of a 640-character backlit LCD display, and a control interface consisting of “soft” keys used to navigate screen menus, “hard” keys with fixed control functions, and a QWERTY keypad.

### Hardware Features

- Listed to UL Standard 864, 9th edition
- Full supervision of all inputs and network integrity
- Enhanced-format 640-character LCD display with back-lighting
- ACS bus for LED or graphic annunciators (EIA-485)
- Optically isolated printer interface (EIA-232)
- 11 LED status indicators: Power, Controls Active, Fire Alarm, Pre-Alarm, Security, Alert, Supervisory, Trouble, Signal, Silence, CPU Failure, Point Disabled, Other Event
- Alphanumeric QWERTY rubber keypad
- Four status relays: Alarm, Trouble, Supervisory, Security (Form-C)
- Nonvolatile real-time clock can be synchronized with network by master node
- Optional Security Keyswitch enable Keypad functions
- Optional Security Tamper switch
- Supports up to 32 remote ACS annunciators and modules
- Requires 24 VDC and a network connection

### Function Features

- Individual Enable/Disable or Group Enable/Disable local for networked AUTOPULSE series panels
- Lamp Test (local to NCA-2)
- History Buffer (1000 Alarm events; 4000 System events)
- Print NCA-2 programming and history reports
- Report status of panels and their respective field devices to a central station via a single UDACT
- One Master level, nine User level passwords: The Master can assign each User access levels (programming, alter status)
- Interactive Summary Event Count display, event handling package
- Online programming and alter-status programs
- Intuitive user guidance program including interactive soft keys



007715

- Enhanced Read Status/Alter Status displays
- New history filters for report displaying and printing: All Events, Only Alarms, Only Troubles, Only Supervisory, Only, Security, Time Interval, Point Range
- Advanced/Basic Walk-Test program
- Timer control for Auto Silence, AC Fail Delay
- Meets Canadian ULC display requirements
- Environmental adjustment controls to maximize LCD legibility
- Meets NFPA requirements for Firefighter Smoke Control Station (FSCS) and HVAC

### NCA-2 Indicators and Controls

#### LED Indicators:

- **Power** (green) illuminates when 24 VDC power is applied; LED goes out if power is removed and NCA-2 is using a battery.
- **Controls Active** (green) illuminates to indicate that the NCA-2 control functions are active.
- **Fire Alarm** (red) illuminates when at least one fire alarm event exists; flashes when any of these events remain unacknowledged.
- **Pre-Alarm** (red) illuminates when at least one pre-alarm event exists; flashes when any of these events remain unacknowledged.
- **Security** (blue) illuminates when at least one security event exists; flashes when any of these events remain unacknowledged

## NCA-2 Indicators and Controls (Continued)

### LED Indicators: (Continued)

- **Supervisory** (yellow) illuminates when at least one supervisory event exists (i.e., sprinkler valve off normal, low pressure, fire pump running, guard's tour, etc.); flashes when any of these events remain unacknowledged.
- **System Trouble** (yellow) illuminates when at least one trouble event exists; flashes when any of these events remain unacknowledged.
- **Other Event** (yellow) illuminates for any category of event not listed above; flashes when any of these events remain unacknowledged.
- **Signals Silenced** (yellow) illuminates if the NCA-2 Silence key has been pressed or if any other node sent a Network Silence command; flashes if only some points on a node are silenced.
- **Point Disabled** (yellow) illuminates when at least one disable exists on the network or in the system.
- **CPU Failure** (yellow) activated by the watchdog timer hardware, indicates an abnormal hardware or software condition. Contact technical support.

### Fixed Function Keys

- Acknowledge
- Signal Silence
- System Reset
- Drill
- Fire Alarm Scroll/Display
- Security Scroll/Display
- Supervisory Scroll/Display
- Trouble Scroll/Display
- Other Event Scroll/Display

The five keys labeled Scroll/Display allow the user to scroll through messages for the particular event type. For example, pressing the Fire Alarm Scroll/Display key will scroll through all fire alarm events, as details of each are shown in the display area of the NCA-2.

**Note:** The Other Event Scroll/Display key also scrolls between Pre-Alarm and Disabled events.

- **Acknowledge:** Press this key to acknowledge off all active events.
- **Signal Silence:** Press this key to turn off all control modules, notification appliance circuits, and panel output circuits that have been programmed as Silenceable.
- **System Reset:** Press this key to clear all latched alarms and other events and turn off event LEDs.
- **Drill Hold 2 Sec:** Press this key, holding it down for two seconds, to activate all silenceable output circuits.

## Special Function Keys

- **Print Screen:** Press this key to print what is currently on the LCD screen.
- **Lamp Test:** Press this key to test the LED indicators on the left of the keypad and to check firmware revision numbers.
- **Next Selection/Previous Selection:** These keys are used when setting parameters in NCA-2 data fields; for example, choosing a device type as a filter for requesting a Node History.
- **Battery Level:** Press this key to display voltage and charging current level for system batteries.

## Specifications

Temperature and humidity ranges: This system meets NFPA requirements for operation at 32 °F-120 °F (0 °C-49 °C) and at a relative humidity (noncondensing) of 85% at 86 °F (30 °C) per NFPA, and 93% ± 2% at 89.6 °F ± 1.1 °F (32 °C ± 2 °C) per ULC. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 60 °F-80 °F (15 °C-27 °C).

## Electrical Requirements

The NCA-2 may be powered from a Main Power Supply AMPS-24(E) mounted in the NCA-2 cabinet (see specifications below); or from any UL Listed non-resettable 24 VDC source from an AUTOPULSE control panel.

The battery on the NCA-2 motherboard is for RTC and SRAM; holds the history memory through power failure. Replacements are available.

**Power source:** 1) AMPS-24 (120 VAC, 50/60 Hz, 4.5 A maximum) or AMPS-24E (240 VAC, 50/60 Hz, 2.25 A maximum) power supply; 2) the AUTOPULSE IQ-636X-2 on-board power supply; or 3) a supervised +24 VDC power supply that is UL/ULC Listed for fire protective service

**Total output 24 VDC power:** 4.5 V in alarm.

## Listings and Approvals\*

These listings and approvals apply to the NCA-2. 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 .....	S635
ULC .....	S635
CSFM .....	7165-0028:243, 7170-0028:244
MEA .....	128-07-E

\*Listings and Approvals are under NOTIFIER.

## Ordering Information

Part No.	Description	Shipping Weight lb	(kg)
434956	NCA-2 (Network Control Annunciator)	5.0	(2.3)



## SLR-24H Photoelectric/Heat Smoke Detector (IQ-318/IQ-636X-2 (with FZM))

### Features

- Self-restoring integral 135 °F (57 °C) heat sensor, 50 ft (15 m) rating
- Low profile, 2.4 in. (60 mm) high – with base
- 2 or 4 wire base compatibility, relay bases available
- Highly stable operation, RF/Transient protection
- Low standby current, 45µA at 24 VDC
- Two built-in power/sensitivity supervision/alarm LEDs
- Non-directional smoke chamber
- Vandal resistant security locking feature
- Built-in magnetic go/no go detector test feature
- Removable smoke labyrinth for cleaning or replacement
- Automatic Sensitivity window verification function meets outlined requirements in NFPA 72, Chapter 7, Inspection, Testing and Maintenance
- Backwards compatible with SLK and SIH detectors

### Applications

The SLR-24H Photoelectric/Heat Smoke Detectors are intended for use in commercial, industrial, and institutional buildings. The detectors are placed primarily in clean, indoor environments where early warning fire detection is required. It is best suited for smoldering or flaming fires.

The 135 °F (57 °C) heat sensor can initiate an alarm independently. The heat detector is UL listed for 50 ft (15 m) spacing when used for evacuation alarm, if used for suppression release the spacing should be reduced.

The detectors are used in combination with an AUTOPULSE Control System and a fire suppression system for automatic detection, alarm, equipment control, and fire suppression system release capabilities.

### Description

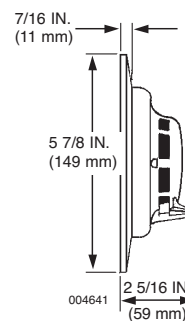
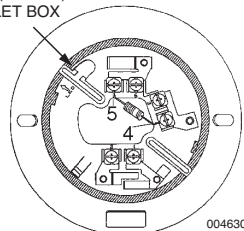
The SLR-24H photoelectric/heat smoke detector utilizes two bicolor LEDs for indication of status. In a normal standby condition the LEDs flash Green every 3 seconds. When the detector senses that its sensitivity has drifted outside the UL listed sensitivity window, the LEDs will flash Red every 3 seconds. When the detector senses smoke and goes into alarm, the status LEDs will latch on Red.

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

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

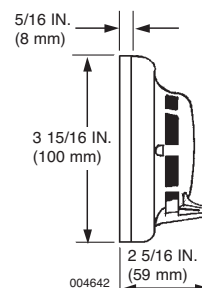
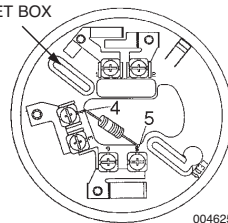
### DIMENSIONS – NS6-224 BASE

- ▶ TO 4 IN. (102 mm) SQUARE OR
- ▶ 4 IN. (102 mm) OCTAGON



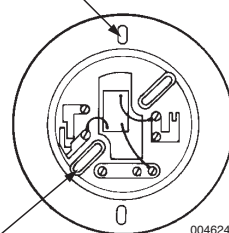
### DIMENSIONS – NS4-224 BASE

- ▶ TO 3 IN. (76 mm)

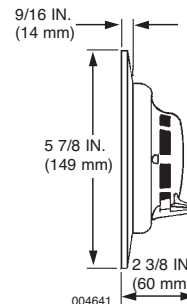


### DIMENSIONS – HSB-21 BASE

- ▶ TO 4 IN. (102 mm) SQUARE OUTLET BOX

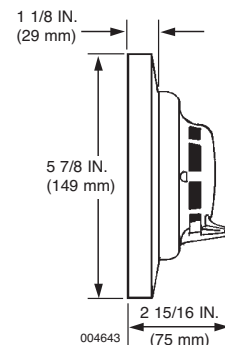
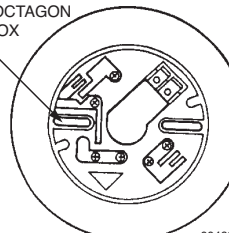


- ▶ TO 3 IN. (76 mm) OR 4 IN. (102 mm)



### DIMENSIONS – HSC-224RA BASE

- ▶ TO 4 IN. (102 mm) SQUARE OR 4 IN. (102 mm) OCTAGON



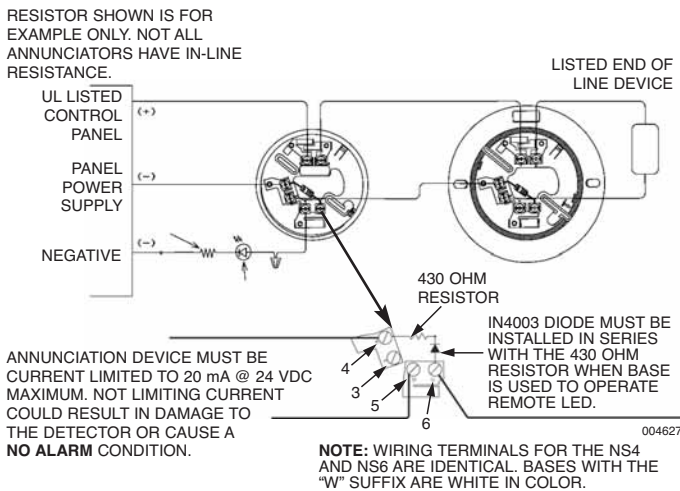
## Technical Information

### Detector Base/Control Unit Compatibility

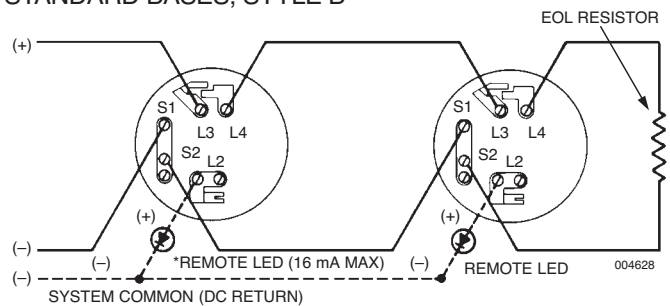
Detector Base (Part No.)	AUTOPULSE IQ-318, IQ-636X-2 FZM-1
NS6-224 (427598)	Yes
HSB-21 (417457)	No
NS4-224 (427599)	Yes
HSC-224RA (416849)	No

Heat Detector: . . . . 135 °F (57 °C) self-restoring, fixed temp.  
 Light Source: . . . . . GaAl as infrared emitting diode  
 Rated Voltage: . . . . . 17.6 to 33.0 VDC  
 Working Voltage: . . . . . 15 to 33.0 VDC  
 Maximum Allowable Voltage: . . . . . 42 VDC  
 Supervisory Current: . . . . . 45  $\mu$ A maximum @ 24 VDC  
 Surge Current: . . . . . 160  $\mu$ A maximum @ 24 VDC  
 Alarm Current: . . . . . 150 mA maximum @ 24 VDC  
 Ambient Temperature: . . . . +32 °F to +120 °F (0 °C to 49 °C)  
 Color: . . . . . Bone White  
 Sensitivity Test Feature: . . . . Automatic sensitivity window verification test  
 Air Velocity: . . . . . Maximum 300 FPM

### WIRING DIAGRAM – TWO WIRE OPERATION NS4 AND NS6 SERIES BASE



### WIRING DIAGRAM – HSB-21 AND HSC-224RA\* STANDARD BASES, STYLE B



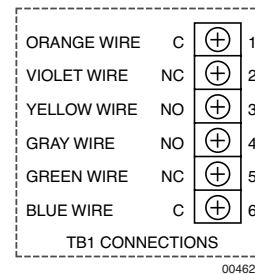
## Mounting Guidelines

The detector bases are designed for surface mounting. The detector head can be inserted or removed from the base without disrupting the wiring connections.

The following bases are compatible with the SLR-24H Photoelectric/Heat Smoke Detector:

Base	Type of Mounting Box
HSB-21	4 in. (102 mm) Octagon, 4 in. (102 mm) Square
NS4-224	3 in. (76 mm) Octagon
NS6-224	4 in. (102 mm) Octagon, 4 in. (102 mm) Square
HSC-224RA	4 in. (102 mm) Octagon, 4 in. (102 mm) Square

### HSC-224RA RELAY CONTACT TERMINAL STRIP



## Listings and Approvals\*

UL . . . . . S1383  
 ULC . . . . . CS463  
 California State Fire Marshal (CSFM) . . . . 7272-0410:107  
 Factory Mutual (FM) . . . . . 1O5A1.AY  
 MEA . . . . . 284-91-E

\* Listings and Approvals are under HOCHIKI AMERICA CORPORATION

## Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
427597	SLR-24H Photoelectric/ Heat Smoke Detector	1	(0.4)
427598	NS6-224 Base	0.5	(0.2)
427599	NS4-224 Base	0.5	(0.2)
417457	HSB-21 Base	0.5	(0.2)
416849	HSC-224RA Relay Base	0.5	(0.2)
415730	Test Magnet	0.5	(0.2)
405491	Punk Stick (Pack of 10)	0.5	(0.2)





## SLR-24 Photoelectric Smoke Detector (IQ-318/IQ-636X-2 (with FZM))

### Features

- Low profile, 1.8 in. (46 mm) high – with base
- 2 or 4 wire base compatibility, relay bases available
- Highly stable operation, RF/Transient protection
- Low standby current, 45 $\mu$ A at 24 VDC
- Two built-in power/sensitivity supervision/alarm LEDs
- Non-directional smoke chamber
- Vandal resistant security locking feature
- Built-in magnetic go/no go detector test feature
- Removable smoke labyrinth for cleaning or replacement
- Automatic Sensitivity window verification function meets outlined requirements in NFPA 72, Chapter 7, Inspection, Testing and Maintenance
- Backwards compatible with SLK and SIH detectors

### Applications

The SLR-24 Photoelectric Smoke Detectors are intended for use in commercial, industrial, and institutional buildings. The detectors are placed primarily in clean, indoor environments where early warning fire detection is required.

The detectors are used in combination with an AUTOPULSE Control System and an fire suppression system for automatic detection, alarm, equipment control, and fire suppression system release capabilities.

### Description

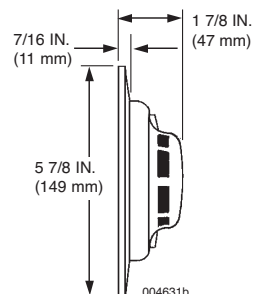
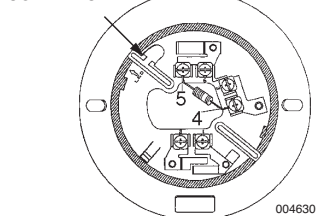
The SLR-24 photoelectric smoke detector utilizes two bicolor LEDs for indication of status. In a normal standby condition the LEDs flash Green every 3 seconds. When the detector senses that its sensitivity has drifted outside the UL listed sensitivity window the LEDs will flash Red every 3 seconds. When the detector senses smoke and goes into alarm the status LEDs will latch on Red.

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

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

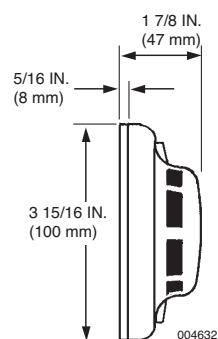
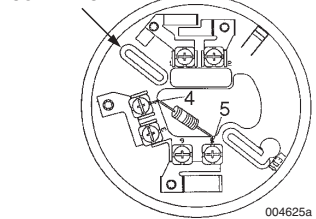
### DIMENSIONS – NS6-224 BASE

- ▶ TO 4 IN. (102 mm) SQUARE OR
- ▶ 4 IN. (102 mm) OCTAGON



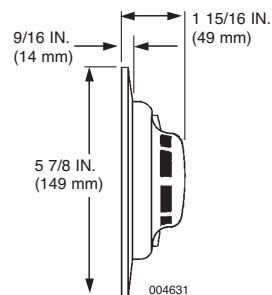
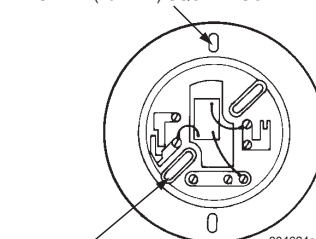
### DIMENSIONS – NS4-224 BASE

- ▶ TO 3 IN. (76 mm)



### DIMENSIONS – HSB-21 BASE

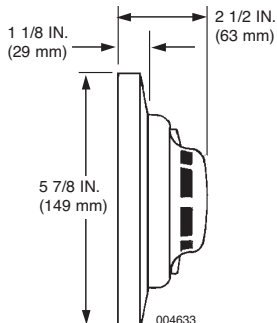
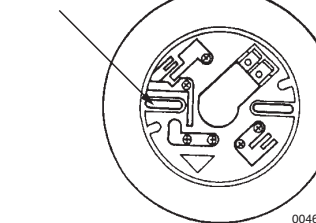
- ▶ TO 4 IN. (102 mm) SQUARE OUTLET BOX



- ▶ TO 3 IN. (76 mm) OR 4 IN. (102 mm)

### DIMENSIONS – HSC-224RA BASE

- ▶ TO 4 IN. (102 mm) SQUARE OR
- ▶ 4 IN. (102 mm) OCTAGON



## Technical Information

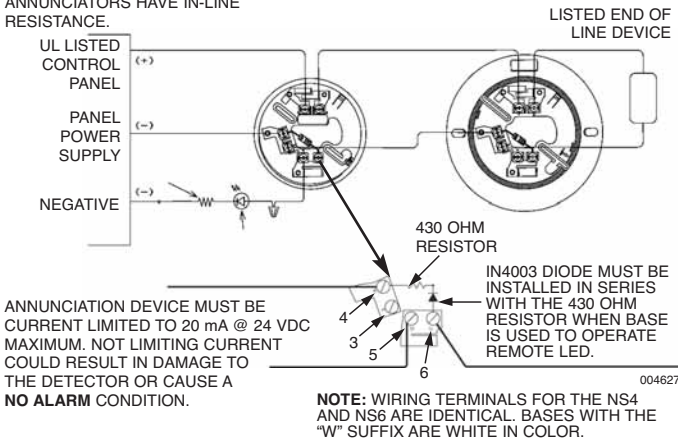
### Detector Base/Control Unit Compatibility

Detector Base (Part No.)	AUTOPULSE IQ-318, IQ-636X-2 FZM-1
NS6-224 (427598)	Yes
HSB-21 (417457)	No
NS4-224 (427599)	Yes
HSC-224RA (416849)	No

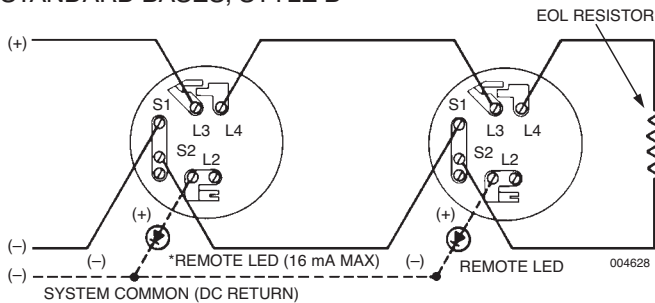
Rated Voltage: ..... 17.7 to 33.0 VDC  
 Working Voltage: ..... 15 to 33.0 VDC  
 Surge Current: ..... 160µA @ 24 VDC  
 Normal Current: ..... 45µA @ 24 VDC  
 Alarm Current: ..... 150 mA maximum @ 24 VDC  
 Ambient Temperature: .... +32 °F to +120 °F (0 °C to 49 °C)  
 Humidity: ..... 95% R.H. maximum  
 Color: ..... Bone White  
 Sensitivity Test Feature: ..... Automatic sensitivity window verification test

### WIRING DIAGRAM – TWO WIRE OPERATION NS4 AND NS6 SERIES BASE

RESISTOR SHOWN IS FOR EXAMPLE ONLY. NOT ALL ANNUNCIATORS HAVE IN-LINE RESISTANCE.



### WIRING DIAGRAM – HSB-21 AND HSC-224RA\* STANDARD BASES, STYLE B



\* Do not wire HSC-224RA to remote LED as shown. Annunciation for the relay base (HSC-224RA) must be wired to the relay contacts using external power.

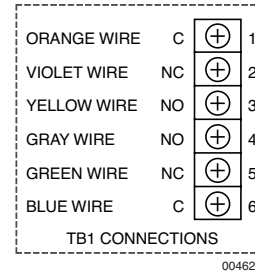
## Mounting Guidelines

The detector bases are designed for surface mounting. The detector head can be inserted or removed from the base without disrupting the wiring connections.

The following bases are compatible with the SLR-24 Photoelectric Detector:

Base	Type of Mounting Box
HSB-21	4 in. (102 mm) Octagon, 4 in. (102 mm) Square
NS4-224	3 in. (76 mm) Octagon
NS6-224	4 in. (102 mm) Octagon, 4 in. (102 mm) Square
HSC-224RA	4 in. (102 mm) Octagon, 4 in. (102 mm) Square

### HSC-224RA RELAY CONTACT TERMINAL STRIP



### Listings and Approvals\*

UL ..... S1383  
 ULC ..... CS463  
 California State Fire Marshal (CSFM) ..... 7272-0410:107  
 Factory Mutual (FM) ..... 1O5A1.AY  
 MEA ..... 284-91-E

\* Listings and Approvals are under HOCHIKI AMERICA CORPORATION

### Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
427596	SLR-24 Photoelectric Detector	1	(0.4)
427598	NS6-224 Base	0.5	(0.2)
427599	NS4-224 Base	0.5	(0.2)
417457	HSB-21 Base	0.5	(0.2)
416849	HSC-224RA Relay Base	0.5	(0.2)
415730	Test Magnet	0.5	(0.2)
405491	Punk Stick (Pack of 10)	0.5	(0.2)



## CAB-4 Cabinets (IQ-636X-2)

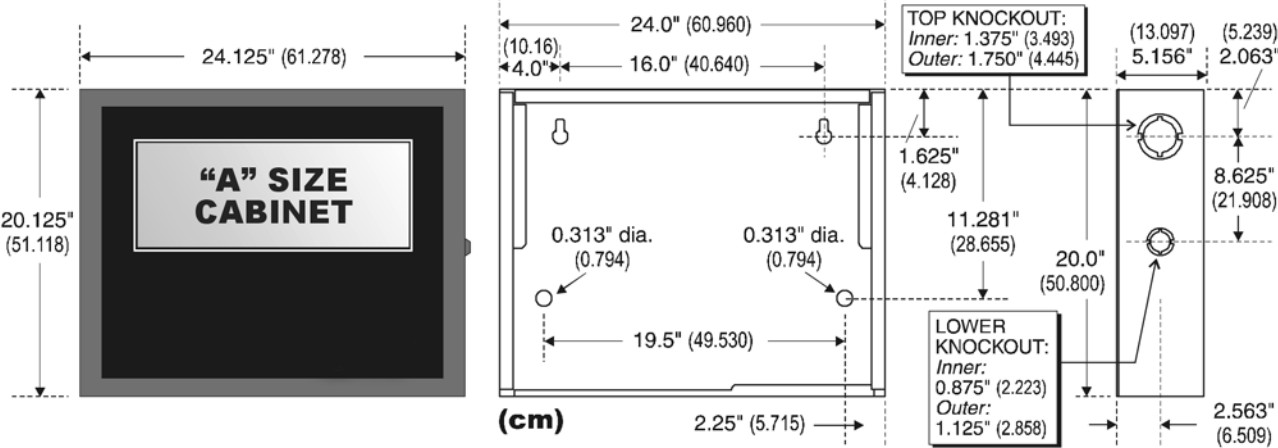
### General

- ▶ All cabinets for the AUTOPULSE IQ-636X-2 fire alarm control panel are fabricated from 16-gauge steel. The cabinet assembly consists of two basic parts: a backbox and a locking door. Cabinets are red with LEXAN® windows.
- The key-locked door is provided with a pin-type hinge, two keys and the necessary hardware to mount the door to the backbox.
- The backbox has been engineered to provide ease-of-entry for the installer. Knockouts are positioned at numerous points to aid the installer in bringing a conduit into the enclosure.
- Right- or left-hand hinges, selectable in the field. Door opens 180°.
- Cabinets are arranged in four sizes, A (one tier) through D (four tiers).
- ▶ A trim ring option is available for semi-flush mounting.

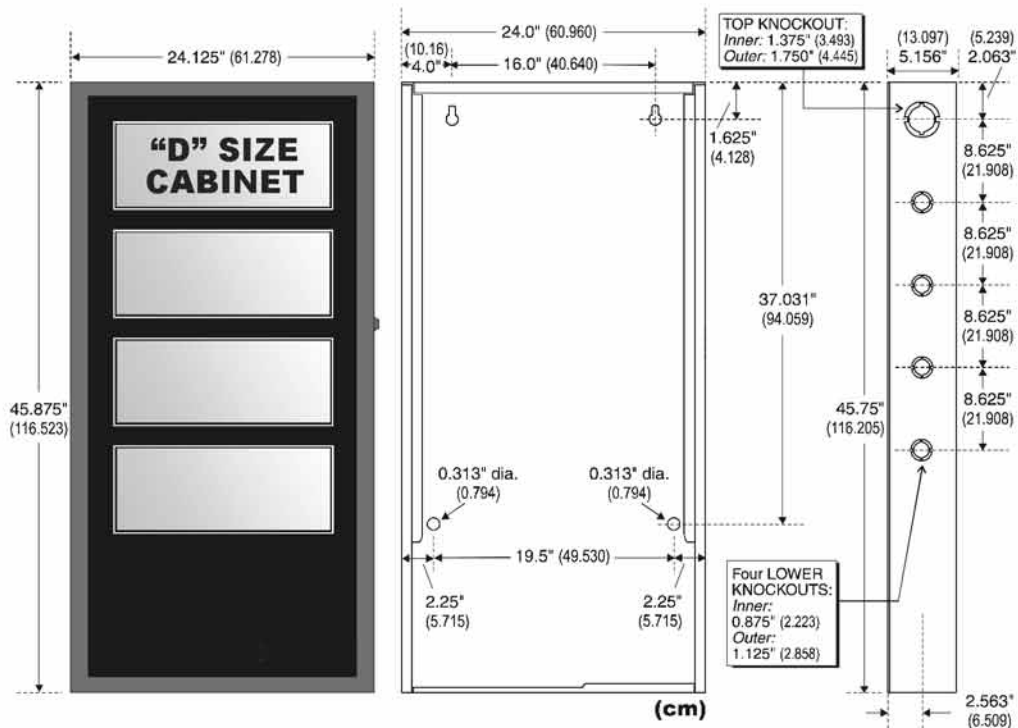
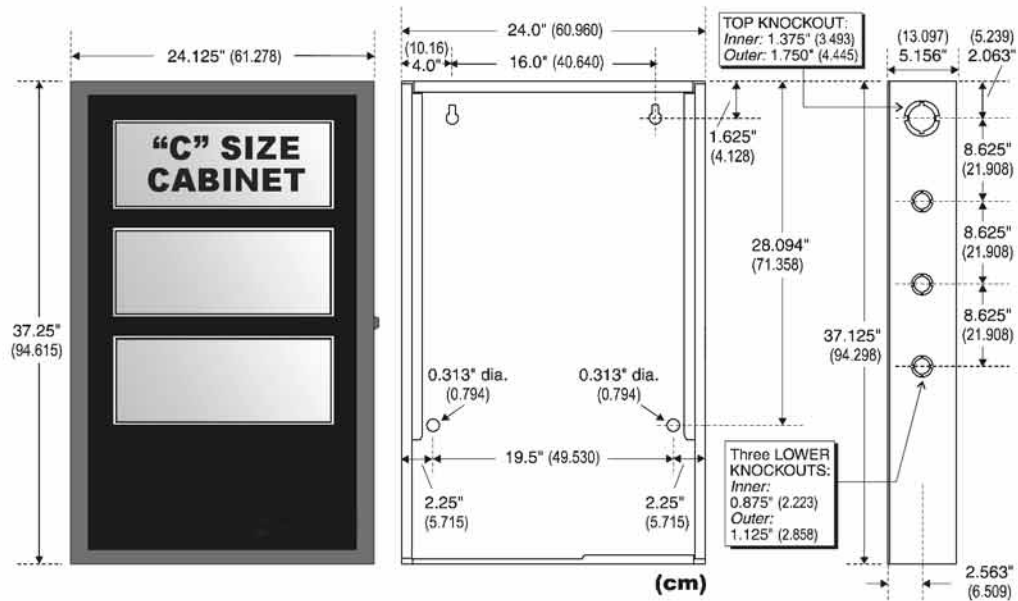
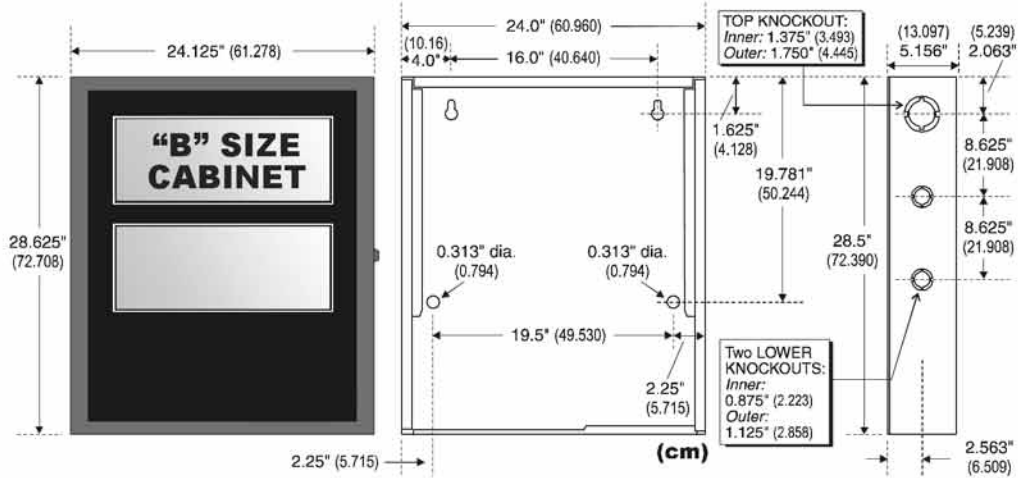
### Agency Listings and Approvals

UL Listed . . . . .	S635
U.S. Coast Guard . . . . .	161.002/42/1
ULC Listed . . . . .	S635/CS118
FM . . . . .	Approved
California State Fire Marshal . . . . .	7165-0028:214 7170-0028:216
MEA (NYC) . . . . .	17-96-E Vol. VI; 128-07-E Vol. 5

DIMENSIONAL DRAWINGS OF 'B,' 'C,' AND 'D' SIZED CABINETS ARE PROVIDED ON PAGE 2



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## Ordering Information

A complete cabinet assembly consists of: a door, a backbox, an optional battery plate, and an optional semi-flush trim ring. For each cabinet required, order one "DR" door and one "SBB" backbox. The BP-4 battery plate is required for each cabinet assembly that mounts batteries and/or a power supply in the lower position of the cabinet. The optional trim ring is an attractive "picture frame"-style black metal ring.

### One Tier, "A" Size:

Part No. 435598 DR-A4R: Door assembly, LEXAN window, one tier, RED. (ULC Part No. 437039)

Part No. 433526 SBB-A4R: Backbox assembly, one tier, RED. (ULC Part No. 437043)

Part No. 433534 TR-A4: Accessory semi-flush-mount trim ring, one tier (opening 24.062 in. (611 mm) W x 20.062 in. (510 mm) H), BLACK. **Note:** Black trim rings are used with red cabinets. (ULC Part No. 437047)

Part No. 432795 BP-4: Battery panel. Used to cover battery and power supply when lower position is used in backbox.

### Two Tiers, "B" Size:

Part No. 435599 DR-B4R: Door assembly, LEXAN window, two tiers, RED. (ULC Part No. 437040)

Part No. 433527 SBB-B4R: Backbox assembly, two tiers, RED. (ULC Part No. 437044)

Part No. 433535 TR-B4: Accessory semi-flush-mount trim ring, two tiers (opening 24.062 in. (611 mm) W x 28.562 in. (725 mm) H), BLACK. **Note:** Black trim rings are used with red cabinets. (ULC Part No. 437048)

Part No. 432795 BP-4: Battery panel. Used to cover battery and power supply when lower position is used in backbox.

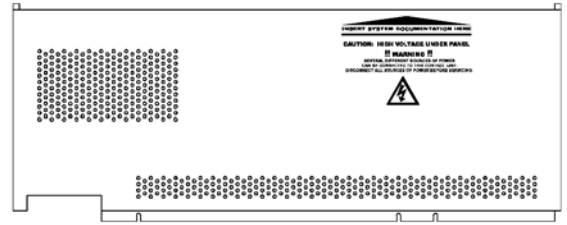
### Three Tiers, "C" Size:

Part No. 435600 DR-C4R: Door assembly, LEXAN window, three tiers, RED. (ULC Part No. 437041)

Part No. 433529 SBB-C4R: Backbox assembly, three tiers, RED. (ULC Part No. 437045)

Part No. 433589 TR-C4: Accessory semi-flush-mount trim ring, three tiers (opening 24.062 in. (611 mm) W x 37.187 in. (945 mm) H), BLACK. **Note:** Black trim rings are used with red cabinets. (ULC Part No. 437049)

Part No. 432795 BP-4: Battery panel. Used to cover battery and power supply when lower position is used in backbox.



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THE BP-4 BATTERY DRESS PANEL COVERS THE MAIN POWER SUPPLY AND THE BATTERIES IN THE CABINET.

ONLY ONE BP-4 IS REQUIRED PER CABINET.

### Four Tiers, "D" Size:

Part No. 435601 DR-D4R: Door assembly, LEXAN window, four tiers, RED. (ULC Part No. 437042)

Part No. 433532 SBB-D4R: Backbox assembly, four tiers, RED. (ULC Part No. 437046)

Part No. 433590 TR-D4: Accessory semi-flush-mount trim ring, four tiers (opening 24.062 in. (611 mm) W x 45.812 in. (1164 mm) H), BLACK. **Note:** Black trim rings are used with red cabinets. (ULC Part No. 437050)

Part No. 432795 BP-4: Battery panel. Used to cover battery and power supply when lower position is used in backbox.

### Accessories:

Part No. 433521 DP-1B: Blank dress panel, covers one CAB-4 tier, BLACK. (ULC Part No. 437058)

### Agency Listings and Approvals

See the first page of this data sheet for listing agencies and file numbers. These listings and approvals apply to the CAB-4 Series Cabinets. 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.

LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.





## LEM-320 Loop Expander Module (IQ-636X-2)

### General

The LEM-320 module is used to expand the AUTOPULSE IQ-636X-2 to a second signaling line circuit (SLC) loop.

### Features

- Up to 12,500 ft (3,810 m) on a Class B (Style 4) SLC loop (twisted unshielded)
- Built-in degraded mode increases survivability
- Very simple installation — plug-in style

### Specifications

- **Voltage:** 24 VDC nominal, 27.6 VDC maximum
- **Maximum loop length:** The maximum wiring distance of an SLC using 12 AWG (3.1 mm<sup>2</sup>) twisted-pair wire is 12,500 ft (3810 m) per channel. For a twisted unshielded pair, 12 AWG (3.1 mm<sup>2</sup>) to 18 AWG (0.78 mm<sup>2</sup>).  
Distance with 12 AWG: 12,500 ft (3,810 m)  
Distance with 14 AWG: 8,000 ft (2,438 m)  
Distance with 16 AWG: 4,875 ft (1,486 m)  
Distance with 18 AWG: 3,225 ft (983 m)  
50 ohms maximum per length of Style 6 and 7 loops  
50 ohms maximum per branch for Style 4 loop
- **Maximum current:** for LEM-320: 100 mA; for single SLC loop: 400 mA maximum\*  
**\*Note:** Maximum short circuit — circuit will shut down until short-circuit condition is corrected.
- **Maximum resistance:** 50 ohms (supervised and power-limited)
- **Temperature and humidity ranges:** This system meets NFPA requirements for operation at 32 °F to 120 °F (0 °C to 49 °C); and at a relative humidity (noncondensing) of 85% at 86 °F (30 °C) per NFPA, and 93% ± 2% at 89.6 °F ± 1.1 °F (32 °C ± 2 °C) per ULC. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 60 °F to 80 °F (15 °C to 27 °C).



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### Listings and Approvals

UL Listed . . . . .	S635
ULC Listed . . . . .	S635/CS118
California State Fire Marshal. . . . .	7170-0028.26
FM. . . . .	Approved
MEA (NYC) . . . . .	128-07-E Vol. 5
City of Denver	
Hong Kong	

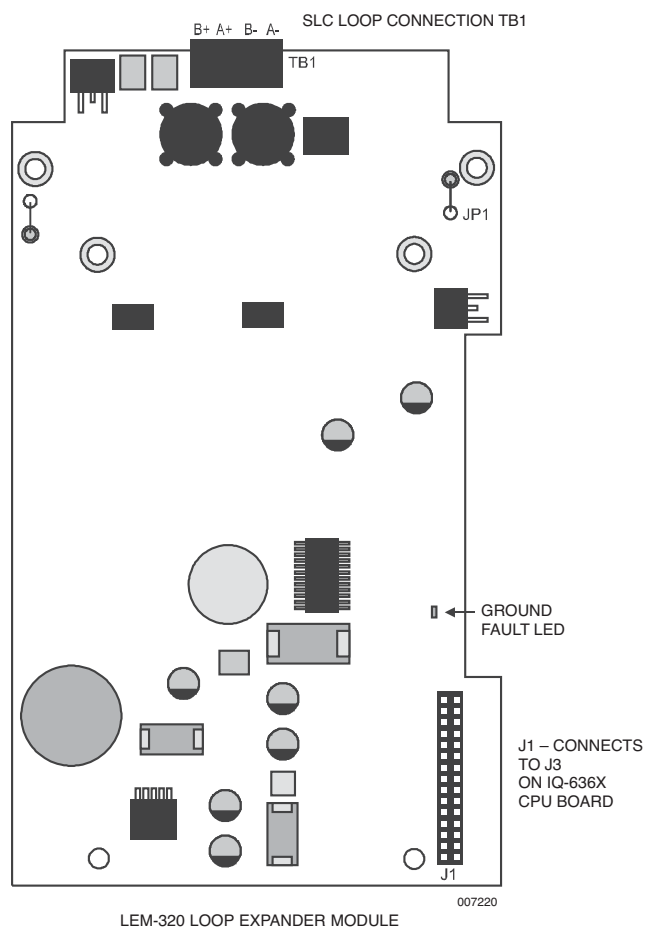
### Product Line Information

LEM-320 Loop Expander Module. Expands AUTOPULSE IQ-636X-2 to two loops.

## Installation

Mount LEM-320 module within the cabinet with the CPU; standard mounting locations are adjacent to the panel or in the row immediately below it. See panel installation manuals for instructions on installing modules and/or option boards in the chassis.

After the LEM-320 module is mounted in the cabinet, connect the SLC loop to TB1. Up to 159 detectors and 159 modules can be connected to the SLC loop. FlashScan® devices can operate in either FlashScan or CLIP mode, but CLIP devices in CLIP mode must be set to address 99 or lower.



## Ordering Information

Part No.	Description	Shipping Weight	
		lb	(kg)
433508	LEM-320 Loop Expander Module	1	(0.45)
437062	LEM-320 Loop Expander Module (ULC)	1	(0.45)

FlashScan is a registered trademark of Honeywell International.