AUTOCALL

*UL, ULC, CSFM Listed;FM Approved; MEA (NYC) Acceptance**

Description

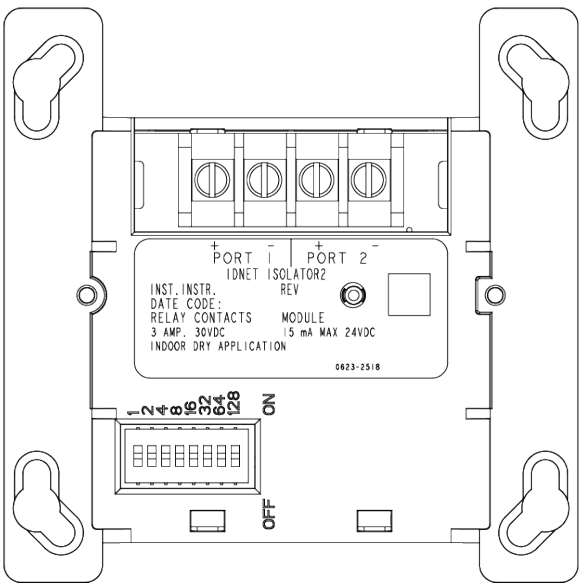
A4090-9122 IDNet Isolator2

You can use Isolator2 devices to provide IDNet communications isolation. This feature improves installation convenience and increases system integrity. When the isolator detects an output short circuit, isolation automatically activates. You can also manually select isolation for each isolator from the FACU to help troubleshoot wiring problems.

Operation

Isolator2 devices power-up in isolation mode. If the output wiring is acceptable, the isolator automatically connects to the rest of the circuit. If the output wiring is shorted, the isolator remains isolated. Refer to *IDNet Isolator2 Usage Guidelines (579-1313AC)* for more details.

Figure 1: A4090-9122 IDNet Isolator2



Status tracking

The isolator reports back to the FACU when it is in isolation mode. The isolator identifies device addresses that do not communicate and reports them to the FACU.

Earth faults

During installation, earth faults often occur and finding these faults normally requires extensive wiring disconnection. With the IDNet Isolator2, you can isolate wiring to help identify and repair earth faults.

Features

- A dual port, bi-directional communications short-circuit isolator.
- Compatible with Autocall 4007ES, 4010ES, or 4100ES series fire alarm control unit (FACU) IDNet signaling line circuits (SLCs) with IDNet 2 or IDNet 2+2 output loops. See Multi-floor example with Class B Isolator2 wiring and Multi-floor example with Class A Isolator2 wiring.
- The isolator automatically separates input from output when an output communications short circuit occurs. You can use either port as an input or output.
- You can activate isolation from the FACU for system diagnostics.
- You can mount the isolator in standard 4 in. (102 mm) square electrical box. You can use an optional adapter plate to mount the isolator in a 4 11/16 in. (119 mm) square electrical box.
- An LED flashes to indicate communications.
- TrueAlarm IDNet Isolator2 sensor bases are also available, refer to *AC4098-0026* for details.
- UL-listed to Standard 864.
- Meets the CAN/ULC-S524 requirement for a maximum recovery time of 10 seconds from a shorted line condition.

Earth fault isolation

You can use the built-in FACU diagnostics to locate earth fault conditions.

For Class B or Class A wiring

The A4090-9122 IDNet Isolator2 receives either input or output communications. This means isolators with Class A wiring can isolate short circuits and simultaneously communicate with devices outside of the isolated wiring section.

Product selection

Table 1: Product selection

SKU	Description	
A4090-9122	IDNet Isolator2	
A4090-9813	Adapter plate to fit 4 11/16 in. (119 mm) square electrical box	
4090-9814	Trim cover with LED viewing window	Included with the Isolator2. Order a replacement separately.

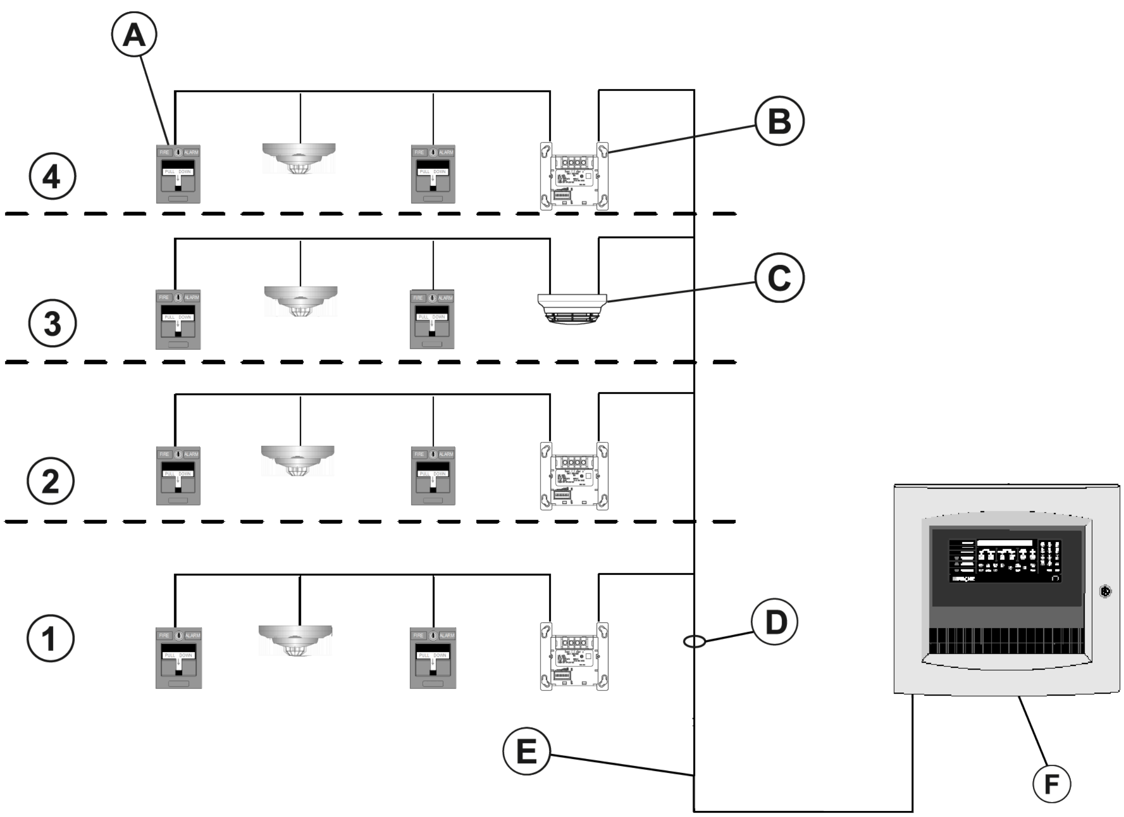
*This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7300 0026:252 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Autocall product supplier for the latest status.

Multi-floor example with Class B Isolator2 wiring

In Figure 2, Class B IDNet communications for each floor start at an isolator. A sensor in the A4098-9766 or A4098-9767 Isolator2 base is shown for reference as an alternate isolating device. If a short circuit occurs in any floor wiring beyond the isolator, you can individually separate each floor. This means the short circuit does not disable the entire IDNet communications wiring.

In the event of an earth fault, you can individually isolate each floor using the built-in control panel diagnostics. With individual floor control, you can isolate the earth fault to a particular floor to narrow the search area.

Figure 2: Isolator2 Class B wiring example in a four-floor building



Callout	Description	Callout	Description
A	Compatible IDNet devices	F	IDNet2-based FACU, 4010ES FACU shown for reference
B	IDNet Isolator2	1	First floor
C	IDNet Isolator2 base	2	Second floor
D	IDNet communications, two-wire, see wiring notes	3	Third floor
E	Class B riser	4	Fourth floor

Note:

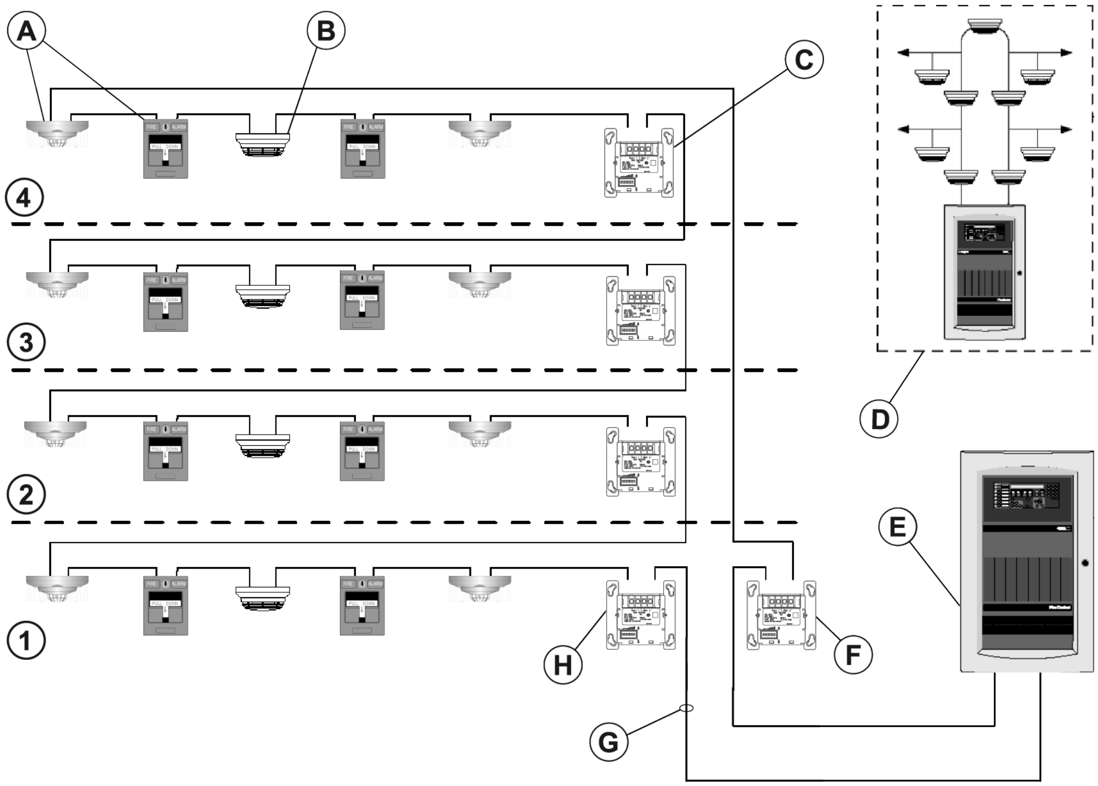
1. Operation of the IDNet Isolator2 requires connection to a compatible 4007ES, 4010ES, or 4100ES IDNet2 communications channel.
2. Figure 2 is a one-line drawing and only shows IDNet communications wiring.
3. Some IDNet devices require additional wiring for power. Refer to specific devices for details.
4. Compliance to local codes is installation dependent. To ensure that wiring faults adjacent to the FACU have no delay effect on field devices, close-nipple Isolator2 devices to the FACU. For example: A4090-9122, A4098-9766, or A4098-9767.
5. A maximum of 50 Isolator2 devices, such as A4090-9122, A4098-9766, or A4098-9767, for each IDNet2 channel.
6. A maximum of 50 units load adjacent to Isolator2 devices, such as A4090-9122, A4098-9766, or A4098-9767.

Multi-floor example with Class A Isolator2 wiring

Figure 3 is a modification of Figure 2. In Figure 3, wiring for each floor uses Class A connections. A sensor mounted in a A4098-9766, A4098-9767 Isolator2 base features for additional reference. With more isolators, either the A4090-9122 Isolator2 or the Isolator2 base, there is a reduction in the number of devices in isolation if a short circuit occurs.

You can use communications from an IDNet 2 or IDNet 2+2 output to provide individual short-circuit isolation and individual output control to help locate wiring faults.

Figure 3: Isolator Class A wiring example in a four-floor building



Callout	Description	Callout	Description
A	Compatible IDNet devices	G	IDNet2 communications, two-wire, Class A circuit
B	IDNet Isolator2 base with TrueAlarm sensor	H	First device
C	A4090-9122 IDNet Isolator2	1	First floor
D	Alternate wiring example shows Class A riser with Isolator2 bases using Class B taps	2	Second floor
E	IDNet2-based FACU, 4100ES FACU shown for reference	3	Third floor
F	Last device	4	Fourth floor

Note:

1. Operation of the IDNet Isolator2 requires connection to a compatible 4007ES, 4010ES, or 4100ES IDNet2 communications channel.
2. You can wire Class A IDNet communications to provide loop short-circuit isolation. To do so, locate the Isolator2 devices as the first and last devices in the loop, close to the FACU. See Figure 3.
3. Figure 3 is a one-line drawing and only shows IDNet communications wiring.
4. Some IDNet devices require additional wiring for power. Refer to specific devices for details.
5. Compliance to local codes is installation dependent. To ensure that wiring faults adjacent to the FACU have no delay effect on field devices, close-nipple Isolator2 devices to the FACU. For example: A4090-9122, A4098-9766 or A4098-9767.
6. A maximum of 50 Isolator2 devices, such as A4090-9122, A4098-9766, or A4098-9767, for each IDNet2 channel.
7. A maximum of 50 units load adjacent to Isolator2 devices, such as A4090-9122, A4098-9766, or A4098-9767.

Mounting information

Figure 4 shows the mounting of the A4090-9122 IDNet Isolator2, using the 4090-9814 trim plate.

Figure 4: Isolator2 mounting reference

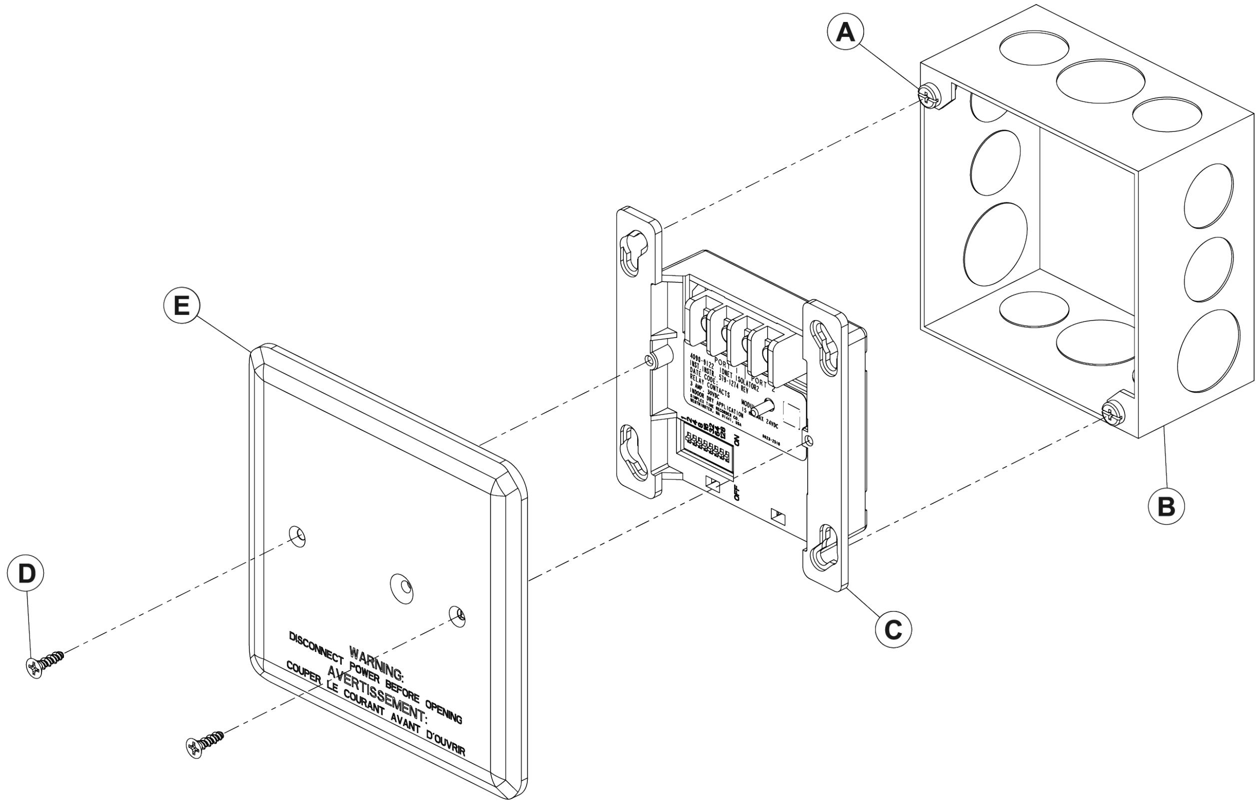


Table 2: Callouts

Callout	Description
A	#8/32 panhead screw, not supplied
B	UL Listed 4 in. (102 mm) square, 2 in. (51mm) deep back box, not supplied
C	A4090-9122 IDNet Isolator2
D	#6 thread forming screw
E	Trim plate

Specifications

Table 3: Electrical

Specification	Rating
Communications	IDNet communications, one address for each device
Compatibility	4007ES, 4010ES, and 4100ES, providing IDNet 2 or IDNet 2+2 communications output. Not compatible with A100-3103 Unit Mounted Quad Isolator.
Power	Consumes one unit load, power is supplied from IDNet SLC
Wire Connections	Screw terminals for input and output wiring, 18 AWG to 14 AWG (0.82 mm^2 to 2.08 mm^2) wire

Table 4: Wiring Distances

Specification	Rating
IDNet Wiring Reference	Up to 2500 ft (762 m) from FACU
	Up to 10,000 ft (3048 m) total wiring distance, including T-Taps
	Compatible with A2081-9044 overvoltage protectors

Table 5: Mechanical

Specification	Rating
Dimensions	H x W x D: 4 1/8 in. x 4 1/8 in. x 1 1/16 in. (105 mm x 105 mm x 27 mm)
Package	White thermoplastic housing
Temperature	32°F to 120° F (0°C to 49°C) indoor operation only
Humidity Range	10% to 90% RH at 90°F (32°C)
Installation Instructions	579-1274
IDNet Isolator2 Usage Guidelines	579-1313AC