

Features

Signal IAMs provide additional selective signaling for Autocall 4007ES, 4010ES, 4100ES Series fire alarm control panels:

- Signal output notification appliance circuit (NAC) wiring is supervised and connected to the signal input under IDNet communications control
- NAC output is rated 0.5 A for Special Application or Regulated 24 VDC Appliances, or for audio operation (12.5 W @ 25 VRMS, 35 W @ 70.7 VRMS); and can be wired Class B or Class A; see [Specifications](#) on page 2
- Signal coding of horn/strobe control, strobe synchronization, or other coding is provided by the signal input; *coding at the Signal IAM via IDNet addressable communications is not supported*

Supervision features:

- Relay contacts isolate signal inputs from outputs during supervision and do not monitor signal presence; *signal inputs sources will need to be monitored separately*
- During supervision, signal outputs are isolated from signal inputs by open contacts allowing consideration for use with SCIF applications (Sensitive Compartmented Information Facilities)

Operation details:

- Signal IAM operation is powered and supervised by the IDNet addressable communications loop – separate 24 VDC is not required for the IAM – separate signal power is required for the on-board NAC
- Signal IAM communications use a single physical address; however, each Signal IAM reduces the IDNet loop capacity by **two addresses** to accommodate the extra power required for output NAC supervision

Compact construction:

- Mounts in standard 4" square electrical box
- Visible LED flashes to indicate communications
- Optional covers are available to allow LED to be viewed after installation
- Screw terminals for wiring connections

UL Listed to Standard 864

Description

Additional NAC Operation.

For applications requiring additional individual NAC supervision and control, the A4090-9007 Signal IAM provides a 0.5 A remote NAC under host panel addressable point control. IDNet communications monitor the Signal IAM status and then connects the output NAC to the separate signal input for local alarm notification.

Note: The Signal IAM provides additional NACs to the host control panel, it does not provide additional power.

Audio Control.

The Signal IAM also allows the control panel to use IDNet communications to control audio circuits from a compatible Autocall audio control panel. Only one signal source is used per Signal IAM, separate Signal IAMs would be required for control of DC powered appliances such as strobes.

Note: Firefighter phone circuits are not supported.

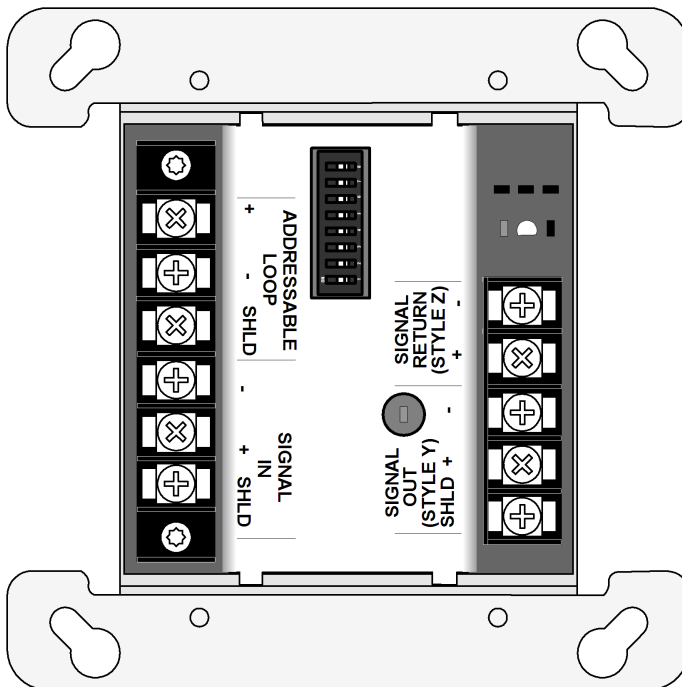


Fig 1: A4090-9007 Signal IAM

Application Reference

Selective Signaling. Use Signal IAMs to provide additional local area notification zones per applicable version of NFPA 72 (*the National Fire Alarm and Signaling Code*), local codes and system requirements.

General Signaling. Use Signal IAMs to connect to higher current appliances (rated output is 0.5 A).

For retrofit of Class B NAC wiring, where only two wires are available, in/out connections can be made at the Signal IAM maintaining appliance wiring supervision per applicable version of NFPA 72 and local codes.

Note: Signal IAM operation is programmed at the fire alarm control panel per system requirements.

Wiring Requirements

Wire Signal IAMs with both IDNet communications and signal/NAC input to the latest requirements of UL 864, and to NFPA 72 per local code.

IDNet Addressable Devices, Model A4090-9007 Signal IAM (Individual Addressable Module)

Specifications

Table 1: Electrical

Specification	Rating
Communications	IDNet communications, one address
Channel Loading	Consumes two unit loads (each Signal IAM reduces the IDNet loop capacity by two addresses); refer to the IDNet source for the total available address capacity
NAC Input Choices	Nominal 24 VDC from control panel NAC or NAC extender 25 VRMS or 70.7 VRMS from compatible listed audio source
NAC Output Ratings	Special Application or Regulated 24 VDC Appliances = 0.5 A Audio rating for speakers = 0.5 A @ 25 VRMS (12.5 W) or 70.7 VRMS (35 W)
Appliance Compatibility Details	Compatible with Autocall strobe synchronization; not compatible with SmartSync 2-wire horn/strobe control or with TrueAlert addressable control; for horn/strobe appliance applications, use 4-wire appliances, for horn control, select horn operation as free-run
Wire Connections	Screw terminals for in/out wiring, 18 to 12 AWG wire (0.82 mm ² to 3.31 mm ²)
End-of-Line Resistor	For Class B NAC; 10 kΩ, 1/2 W; A4081-9008

Table 2: Wiring Distance Information Reference

Specification	Rating
IDNet Communications, General Reference	2500 ft (762 m) maximum distance from panel 10,000 ft (3048 m) maximum total wiring distance (including T-Taps on Class B wiring) Note: IDNet communications specifications may vary depending on the host fire alarm control panel, refer to specific panel product documentation for details
NAC Wiring Distance Considerations	Wiring connections from the NAC Riser, through the Signal IAMs, and to the notification appliances are branch circuits on the NAC Riser and must be calculated accordingly. Wiring distances are limited by wire size and the allowable voltage drop from the fire alarm control panel to the Signal IAM, and then to the farthest notification appliance per branch connection. (The Signal IAM voltage drop is considered negligible for wiring distance calculations.)

Table 3: Mechanical

Specification	Rating
Dimensions	4" x 4-1/8" x 1-1/4" D (102 mm x 105 mm x 32 mm)
Temperature Range	32° to 120° F (0° to 49° C) indoor operation only

Table 3: Mechanical

Specification	Rating
Humidity Range	Up to 93% RH at 100° F (38° C)

Table 4: Additional Information

Product	Document
Installation Instructions	579-670AC
4100ES Basic	AC4100-0031
4100ES Audio	AC4100-0034
4007ES Hybrid	AC4007-0001
A4090-9116 IDNet Isolator	AC4090-0005
A4098-9793 Isolator Base	AC4098-0025
4010ES Control Panel	AC4010-0004
4010ES Control Panel (International)	AC4010-0006

Product Selection

Table 5: Product Selection

SKU	Description
A4090-9007	Signal IAM; programming types are hardware type SIGNAL for 4008; device type SIGIAM for other compatible fire alarm control panels
A4090-9801	For semi-flush mounted box
A4090-9802	For surface mounted box
A4090-9116	IDNet Communications Isolator; may be required for loop connections to Signal IAM; refer to data sheet AC4090-0005 for details
A4081-9008	End-of-line resistor for Signal IAM NAC output when wired Class B; 10 kΩ, 1/2 W; (ref. 733-894)
A2081-9044	Overvoltage Protector; for up to 200 mA DC or IDNet communications; required where wiring exits and enters a building; refer to data sheet AC2081-0016 for details

One-Line Wiring Reference

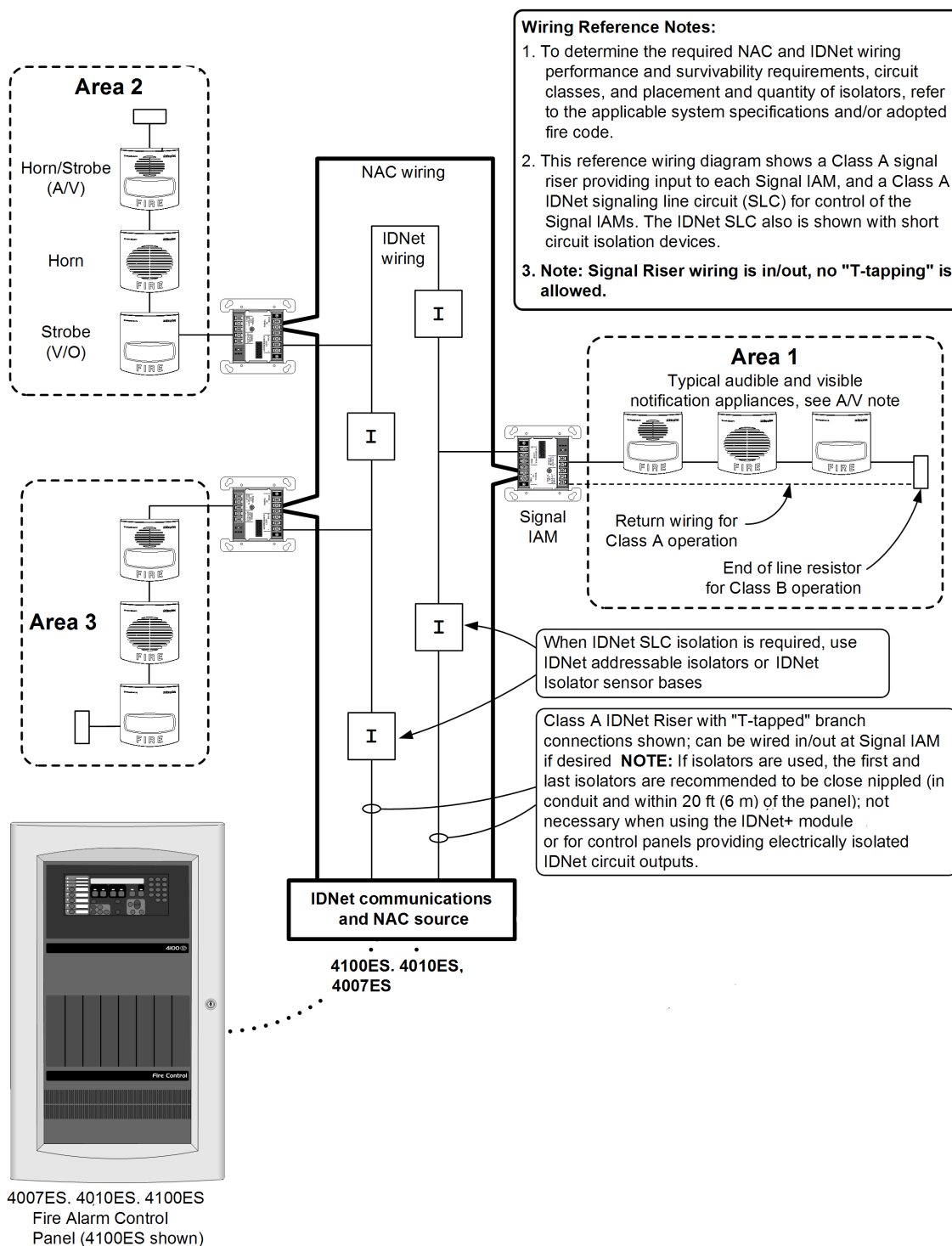
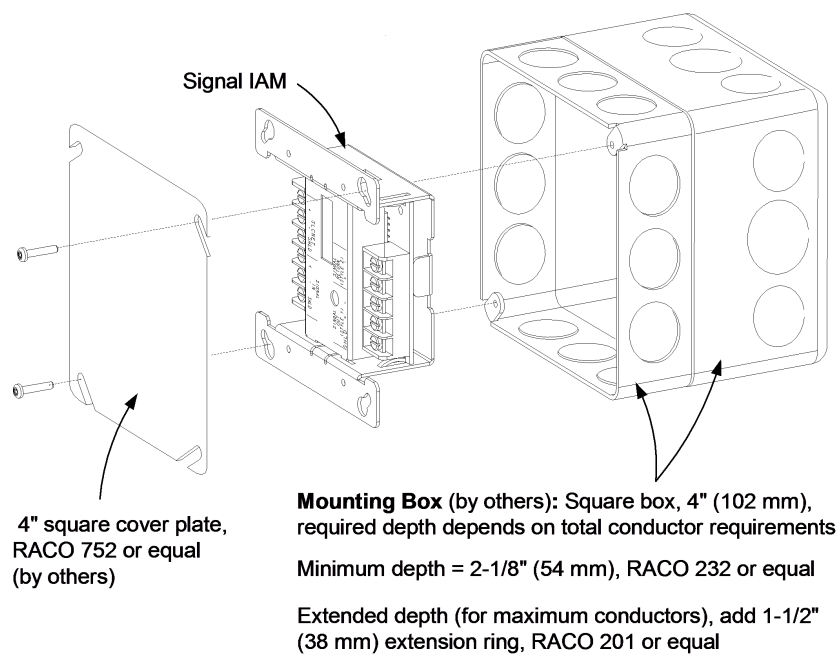


Fig 2: One-Line Wiring Reference

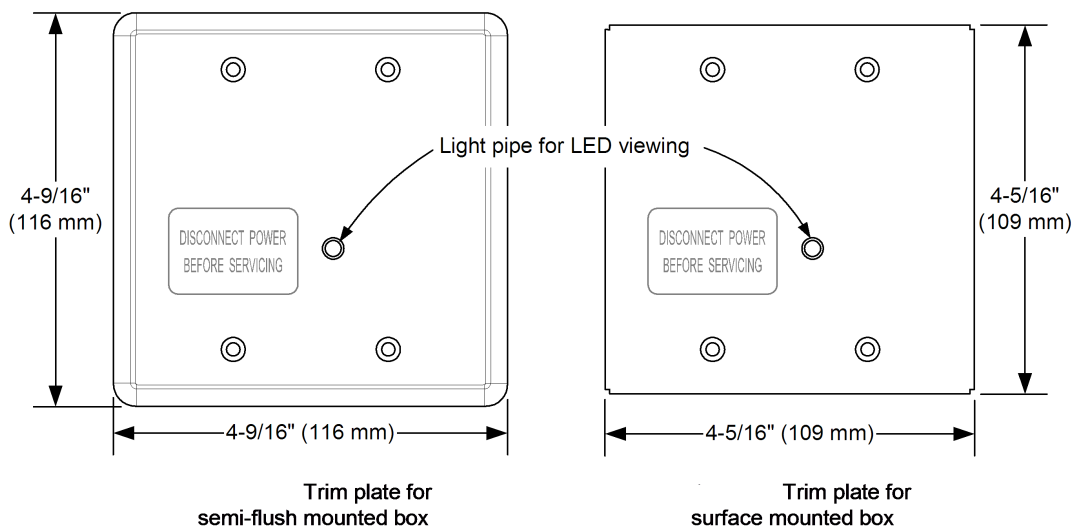
Figure 2 notes:

1. When IDNet SLC isolation is required, use A4090-9116 IDNet addressable isolators or A4098-9793 IDNet Isolator sensor bases
2. If isolators are used, the first and last isolators are recommended to be close nipped (in conduit and within 20 ft (6 m) of the panel)
3. 4007ES, 4010ES, 4100ES: These panels control 4009 IDNet NAC Extenders by IDNet communications; for 4100ES systems, audio signals are typically provided by their system audio NACs.

Mounting Information



Mounting Reference with 4" Square Blank Cover Plate



Optional Trim Plates for Visible LED