Simplex®

Multi-Application Peripherals

*UL, ULC Listed**

IDNet and MAPNET II Communicating Devices
4-20 mA Analog Monitor Zone Adapter Module (AMZ)

Features

Monitors compatible 4-20 mA output sensors:

- Interface linear analog sensor data to Simplex® fire detection panel models 4007ES, 4010ES, and 4100ES using IDNet communications, and 4100ES and 4100U using either IDNet or MAPNET II communications
- Refer to special note below for additional important information

Fire detection panel monitoring and annunciation:

- Up to three threshold levels, each with custom action message
- Display and archive actual sensor analog levels
- Allows sensor calibration date recording
- Requires a single address (two IDNet unit loads)
- Up to 100 custom AMZ point types are available per panel or per connected Network

AMZ module features:

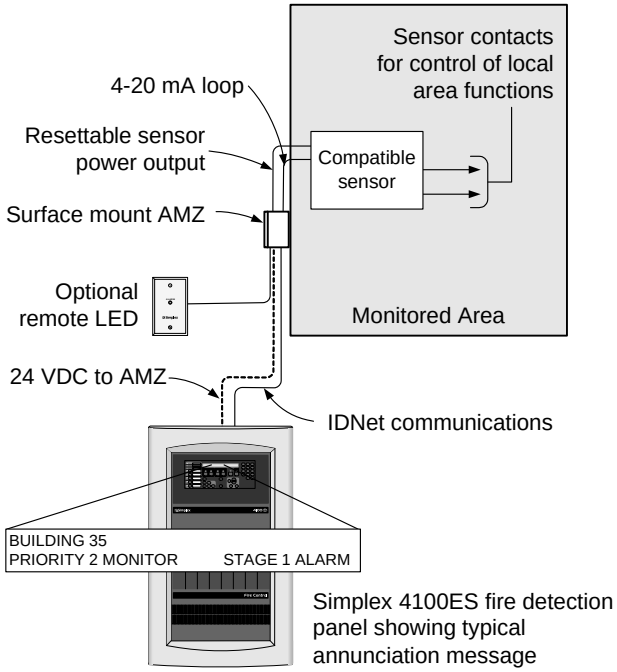
- Automatic and manual AMZ self-test
- On-board manual test switch provides WALKTEST system test feature
- Resettable sensor power output
- Supervised sensor trouble input
- Local LED alarm annunciator output
- Mounts in 4" (102 mm) square electrical box with extension

Introduction

Analog Monitor ZAMs (AMZs) provide an accurate, multi-featured interface for connecting analog sensors to compatible Simplex addressable fire detection panels. The panel monitors the sensor and annunciates whenever a selected threshold level or trouble condition is observed. Typical applications include: air quality for demand control ventilation, air and liquid temperature, humidity, and air velocity (see listings reference on page 2).

NOTE: Compatible sensors are typically supplied by non-SimplexGrinnell/Tyco manufacturers and/or distributors. SIMPLEXGRINNELL/TYCO DISCLAIMS ALL EXPRESS WARRANTIES NOR IS IT RESPONSIBLE FOR ANY SERVICE, TESTING AND/ OR INSPECTION OF THE COMPATIBLE SENSORS. SIMPLEXGRINNELL/TYCO DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE REGARDING THE COMPATIBLE SENSORS.

* Refer to listings compatibility chart on page 2. CSFM listing is not applicable for this product. This product was not FM approved as of revision date. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.



AMZ System Interface Example**

Important Application Considerations

1. The purpose of the AMZ is to communicate the status of a compatible 4-20 mA sensor to the Simplex fire detection panel for proper fire alarm system response including annunciation and event logging.
2. **Responses required to be initiated by the sensor for fire and life safety actions are to be initiated by sensor output contacts** (refer to diagram on page 4)**.**
3. SimplexGrinnell/Tyco does not assume responsibility for the application, selection, inspection, warranty, calibration, or testing of the analog sensor.
4. AMZs and the connected panel are to be located outside of the monitored area and installed in accordance with applicable local code requirements.
5. The AMZ accommodates 2-wire, 3-wire, or 4-wire connections to a compatible sensor.

** Depicted sensor location is for illustration only. Refer to specific sensor requirements for proper location.

AMZ Detection Panel Features

Analog Data Access. Real time analog sensor values can be accessed using the front panel interface. Data is formatted in the specific units being measured.

Flexible Sensor Programming. AMZ point types can be designated as Priority 2, Supervisory, Trouble, Latched Supervisory, or Utility, each with custom label. (For Fire and Life Safety monitoring, connect to sensor output contacts, refer to diagram on page 4.)

Monitored Communications. By default, the AMZ provides an "output abnormal" trouble if the monitored sensor produces an output below 4.0 mA or above 20.0 mA.

Three Programmable Threshold Levels. Each AMZ can have up to three separate threshold levels, each with a custom action message.

Custom AMZ Point Types. Up to 100 custom AMZ point types can be programmed into a single fire alarm detection panel. (For Network applications, the Network total custom AMZ point type limit is also 100 maximum.) Custom point types would be required for the same sensor type but with different threshold values, or for different sensors with unique characteristics.

Calibration Date Recording. Each sensor's calibration date can be manually entered for secured record keeping.

Data Exporting. Sensor activity pertaining to the three analog alarm threshold levels can be exported for archiving via a Simplex Network using a TrueSite Workstation or TrueSite Incident Commander.

Compatible Sensor Operation

Compatible sensors provide a linear output current varying between 4.0 mA and 20.0 mA that represents the present analog measurement as predetermined by the specific sensor. The AMZ monitors the 4-20 mA loop connection and digitally communicates the sensor measurement to the panel. With this information, the panel can determine whether a status annunciation is required and can display the sensor analog level directly in the appropriate units of measurement.

The 4-to-20 mA loop is an established analog format that is highly reliable and inherently supervised for loop integrity. For additional monitoring, sensors with "dry" trouble contacts can be directly connected to the AMZ's supervised trouble input circuit.

AMZ Product Selection Chart

Model	Mounting Type	Description	Connections
4190-9050	Surface mount	Remote AMZ package with cover; mounts in 4" (102 mm) square box with extension, see diagram on page 4	Color Coded Wire Leads, 18 AWG (0.82 mm^2)
4190-9051	Semi-flush		

Options

Model	Description	Mounting	Connections
2098-9808	Remote LED indicator	Single gang stainless steel plate	18 AWG Leads

AMZ Product Listings Compatibility Chart

AMZ Model	UL Listing	ULC Listing
4190-9050 4190-9051	Listed for use with: Mine Safety Appliances Co. (MSA) model Chillgard RT Refrigerant Gas Monitor	Listed for use with compatible 4-20 mA sensors

AMZ Specifications

Voltage and Current Specifications

Operating Voltage	18-32 VDC, 24 VDC nominal
Sensor Output	Switched input voltage
Sensor Current (3 or 4-wire devices)	400 mA maximum
Basic AMZ Current	30 mA
Sensor Loop Current	4 mA minimum, operation below 4.0 mA is a trouble condition
	20 mA maximum, operation above 20.0 mA is a trouble condition
Trouble Circuit Output Current	5 mA for monitoring of dry trouble contacts, voltage supplied by the AMZ
2098-9808 LED Annunciator	3 mA

General Specifications

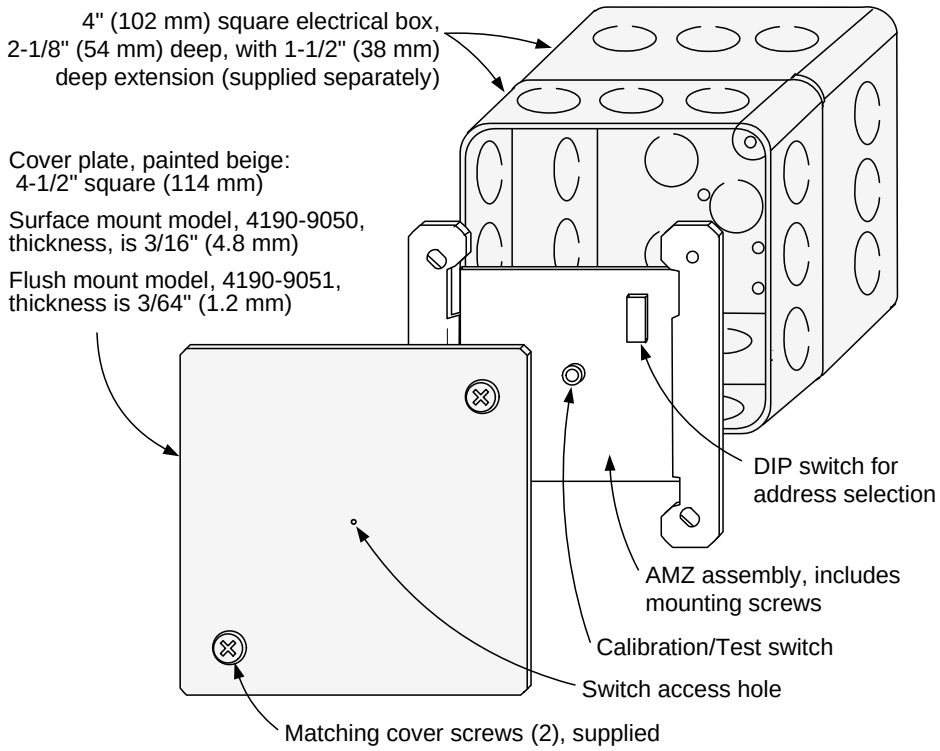
Supervised Trouble Input		Dry contact, 29 VDC maximum
Wiring, Sensor Loop and Power		18 AWG twisted pair, or per sensor requirements
Communications	IDNet Communications	One IDNet address per AMZ
		Requires **two** IDNet unit loads
	MAPNET II	One MAPNET II address per AMZ
	IDNet or MAPNET II	Up to 100 custom AMZ point types per panel
		Up to 100 custom AMZ point types total per Network
Maximum distance, AMZ to sensor		3270 ft (1 km)
Temperature Range		Non-hazardous indoor locations, 32° F to 120° F (0° C to 49° C)
Humidity Range		10 to 90 % RH
Installation Instructions		574-704

AMZ Current Requirements

Function	Current
Basic Operation	30 mA
Sensor Loop (20 mA maximum)	+_____ mA
Sensor Power (400 mA maximum)	+_____ mA
Sub Total* =	_____ mA
Options	
2098-9808 LED (3 mA in alarm)	+_____ mA
Trouble (5 mA with trouble contact closed)	+_____ mA
Total* =	_____ mA

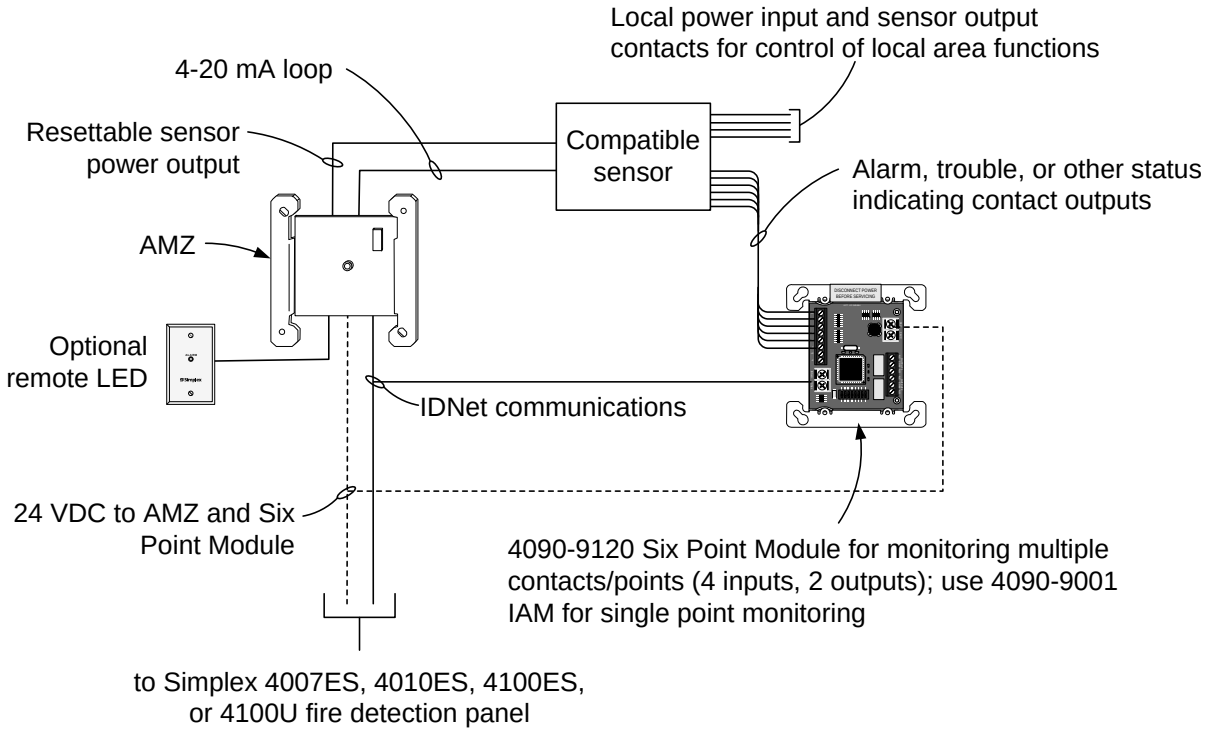
(***NOTE:** Do not exceed 450 mA max.)

AMZ Remote Location Mounting Information



NOTE: For additional information, refer to Installation Instructions 574-704.

Additional Application Reference



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