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

Multi-Point Peripherals

4090-9118 Relay IAM (Individual Addressable Module) with T-Sense Input

Features

Dual point operation provides a supervised multi-state input and a relay output in a single package using only one address:

- Typical applications are for damper motor control with dual damper position feedback monitoring (open and closed)
- For use with Simplex[®] 4007ES, 4010ES, 4100ES, or 4100U Fire Alarm Control Panels providing IDNet communications (4100U requires software revision 11 or higher)

Input/Output details:

- Input operation is "T-Sense" and provides supervised monitoring of normally open, dry contacts
- Status conditions are Normal, Open Circuit (trouble condition), Current Limited (position input 1), and Short (position input 2)
- Total wiring distance to supervised contacts is up to 500 ft (152 m); for indoor wiring applications
- Low power latching relay design allows IDNet communications to supply both data and module power
- Relay is set to OFF on initial power up and upon loss of IDNet communications
- Form C relay output is rated 2 A @ 30 VDC, and 0.5 A @ 120 VAC (resistive ratings)

Compact, sealed construction:

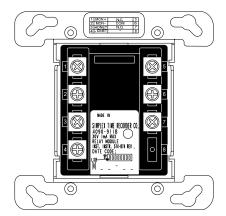
- Enclosed design minimizes dust infiltration
- Mounts in standard 4" square electrical box
- Visible LED flashes to indicate communications
- Screw terminals for wiring connections
- Optional covers are available to allow LED to be viewed after installation

UL Listed to Standard 864

Description

Single Address Dual Point Module. The 4090-9118 Relay IAM with T-Sense allows a compatible Simplex fire alarm control panel IDNet communication channel to monitor two input contact closures with one point and control an output relay with the other point, both from a compact module requiring a single address. Module power is supplied from the IDNet communications channel eliminating the need for separate power wiring.

Multi-Point Device Description. The input circuit and relay operation are controlled independently and may be disabled separately. Point association is determined at the host panel. At the host panel display, the device address is designated as a single hardware location (such as 1-1). The individual points are considered "sub-points" and are layered underneath (such as 1-1-1 and 1-1-2).



4090-9118 Relay IAM with T-Sense Input (shown approximately 1/2 size)

T-Sensing Operation

Supervised Input. The 4090-9118 Relay IAM with T-Sense has a supervised input that monitors for continuity to an end-of-line resistor and can differentiate between a short circuit contact closure and a current limited contact closure.

Four State Operation. Normal is when all contacts are open and there is continuity to the end-of-line resistor; Open is when continuity does not exist to the end-of-line resistor, causing a Trouble condition; Short, indicates that a contact has closed that is directly connected to the input circuit; and Current Limited indicates that a contact has closed beyond a series connected current limiting resistor. This operation allows differentiation between two different contact types due to their wiring location, and reporting as a single IDNet addressable point to the fire alarm control panel.

Typical Applications

Efficient Package. For smoke control applications, this module provides an efficient package for fan damper control with position feedback. The monitor point can be connected to two separate status indicator switches allowing the host panel to track the fan damper status with respect to the requested fan control operation.

General Applications. The monitor and control points can be applied for a variety of associated or independent operations. Flexible programming abilities at the host panel can provide the association logic required for a wide variety of fire or utility operations.

^{*} 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 7300-0026:311 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. 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.

Product Selection Model Description 4090-9118 Relay IAM with T-Sense **Optional Adapter and Trim Plates** Model Description 4090-9813 Adapter plate to fit 4 ¹¹/₁₆" (119 mm) square electrical box 4090-9801 For semi-flush mounted box Trim Plate, galvanized steel, with LED viewing window; includes mounting screws 4090-9802 For surface mounted box End-of-Line Resistor Harnesses (ordered separately as required) Reference No. Description Model 4081-9003 733-896 4.7 kΩ, 1/2 W Use for current limited monitoring, refer to diagram below 4081-9005 733-984 1.8 kΩ, 1/2 W

T-Sense Input Operating Modes

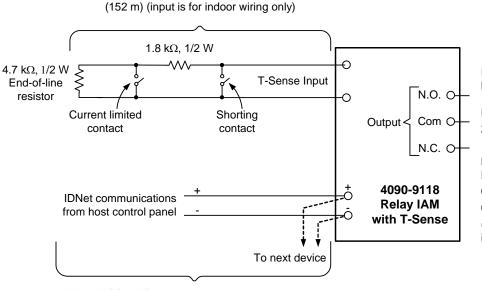
Current Limited

Common Circuit Status Modes

Circuit Status	Device Status	Panel Display
Normal	Switches open	Normal
Open circuit	Wiring discontinuity	Trouble
Damper Position Monitoring Status	Modes	
Circuit Status	Device Status	Typical Panel Display
Short	Switch A closed	Damper Closed
Current Limited	Switch B closed	Damper Open
Waterflow and Tamper Switch Mon	itoring Status Modes	
Circuit Status	Device Status	Panel Display
Short	Waterflow switch closed	Fire Alarm

Tamper switch closed

Wiring Reference



Maximum distance to contacts is 500 ft

For Fire Alarm applications, locate loads within 3 ft (1 m) of contacts

Supervisory

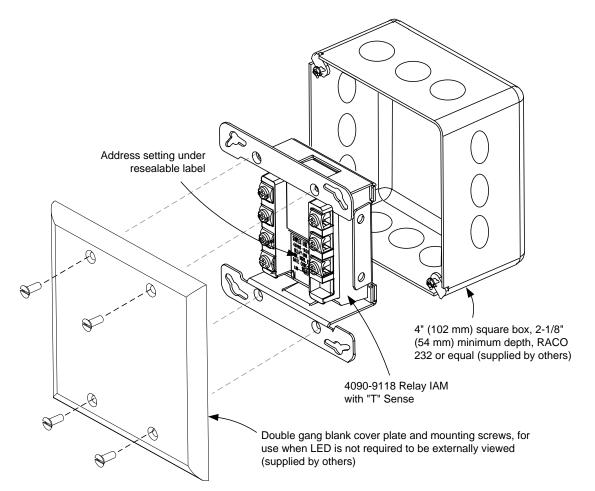
Power Limited Contact Ratings: 2 A @ 30 VDC, resistive loads 1 A @ 30 VDC, inductive loads Non-Power Limited Contact Ratings:

0.5 A @ 120 VAC, resistive loads 0.25 A @ 120 VAC, inductive loads (refer to specifications for additional information)

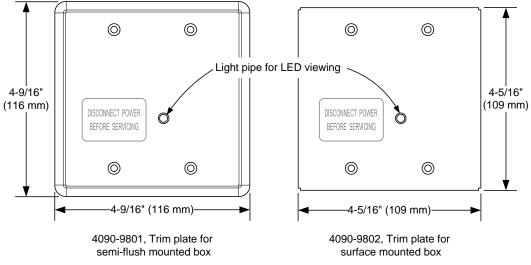
IDNet Wiring Distances:

- 1. Up to 2500 ft (762 m) from host control panel.
- 2. Up to 10,000 ft (3048 m) total wiring distance, including "T" taps.

NOTE: Refer to Installation Instructions 574-874 for detailed installation information.



Mounting Reference, Double Gang Blank Cover Plate





Electrical

Communications		IDNet communications, one address			
Power		Consumes one unit load, power supplied from a compatible IDNet communications channel			
		Point Type	TRIAM		
Point Allocation I/O Po Reference	oint Usage per Panel	2; 1 for relay, 1 for input			
		Public Points Usage	up to 3; 1 for relay, 1 for input, 1 for trouble; for points mapped to the Fire Alarm Network		
Input Requirements			Normally open dry contacts		
			Up to 500 ft (152 m) total distance from Relay IAM		
		For indoor wiring applications only			
Input Supervision Resistors		Two required, refer to Installation Instructions 574-874 for additional information and wiring detail			
Wire Connections		Screw terminals for input and output wiring, 18 to 14 AWG wire $(0.82 \text{ mm}^2 \text{ to } 2.08 \text{ mm}^2)$			
Relay Contact Ratings* Form C (SPDT) (not rated for incandescent switching)	De la L'actual	2 A @ 30 VDC, resistive			
	ngs	Power-Limited	1 A @ 30 VDC, inductive	from listed fire alarm supply	
	- :)	Nonpower-Limited	0.5 A @ 120 VAC, resistive		
	ning)		0.25 A @ 120 VAC, inductive		
	ay requi			ctive loads can typically be diode suppressed; er to Installation Instructions 574-874 for	
IDNet Wiring Distance Reference			Up to 2500 ft (762 m) from the fire alarm control panel		
		rence	Up to 10,000 ft (3048 m) total Class B wiring distance including T-Taps		
		Compatible with 2081-9044 Overvoltage Protectors			
Mechanical					
Dimensions			4-1/8" H x 4-1/8" W x 1-3/8" D (105 mm x 105 mm x 35 mm)		
Package			Black thermoplastic housing on metal mounting plate		
Temperature			32° to 120° F (0° to 49° C) indoor operation only		
Humidity Range			10 to 90% RH at 90° F (32° C)		
Installation Instructions			574-874		

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