

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® 4100U Fire Alarm Control Panels operating with software revision 11 or higher and providing IDNet™ communications**

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
- Both data and power are provided by the IDNet communications link over a single wire pair
- Form C relay output is rated 2 A @ 30 VDC, and 1/2 A @ 120 VAC (resistive ratings)

Compact, sealed construction:

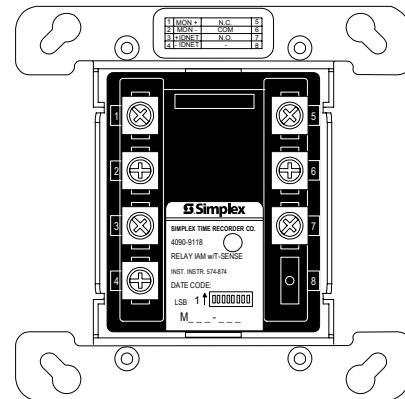
- Enclosed design minimizes dust infiltration
- Mounts in standard 4” square electrical box
- Visible LED flashes to indicate communications
- Screw terminals for wiring connections
- Optional covers are available to allow LED to be viewed after installation

UL Listed to Standard 864

Description

Single Address Dual Point Module. The 4090-9118 Relay IAM with T-Sense allows a Simplex 4100U 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 4100U host panel. At the 4100U host 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 a 4100U 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 was not approved by MEA (NYC) or CSFM as of document revision date. Additional listings may be applicable, contact your local Simplex® product supplier for the latest status.

** IDNet addressable communications designs are protected by U.S. Patent No. 4,796,025.

Product Selection

Model	Description	
4090-9118	Relay IAM with T-Sense	
4090-9801	Optional trim plate with LED viewing window, includes mounting screws; painted beige	For semi-flush mounted box
4090-9802		For surface mounted box

T-Sense Input Operating Modes

Common Circuit Status Modes

Circuit Status	Device Status	Panel Display
Normal	Switches open	Normal
Open circuit	Wiring discontinuity	Trouble

Damper Position Monitoring Status Modes

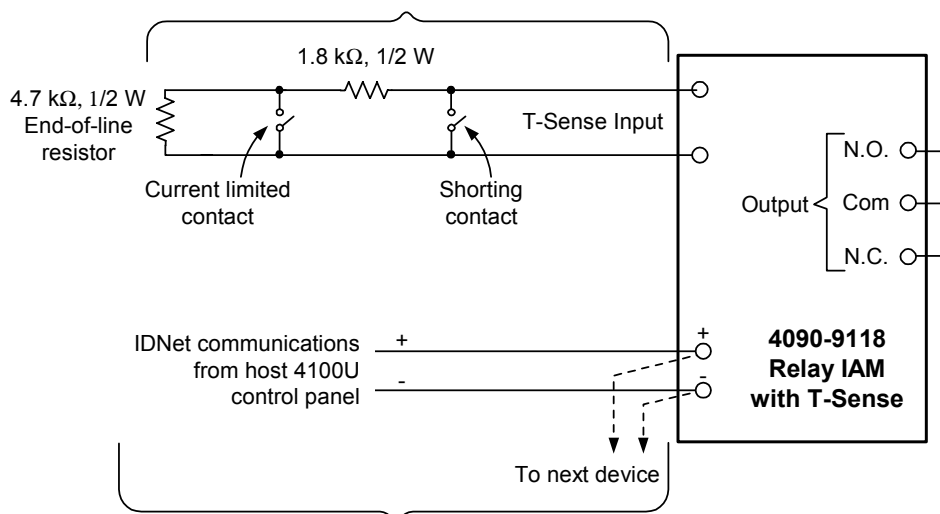
Circuit Status	Device Status	Typical Panel Display
Short	Switch A closed	Damper Closed
Current Limited	Switch B closed	Damper Open

Waterflow and Tamper Switch Monitoring Status Modes

Circuit Status	Device Status	Panel Display
Short	Waterflow switch closed	Fire Alarm
Current Limited	Tamper switch closed	Supervisory

Wiring Reference

Maximum distance to contacts is 500 ft (152 m) (input is for indoor wiring only)



For Fire Alarm applications, locate loads within 3 ft (2 m) of contacts

Power Limited Contact Ratings:

2 A @ 30 VDC, resistive loads
1 A @ 30 VDC, inductive loads

Non-Power Limited Contact Ratings:

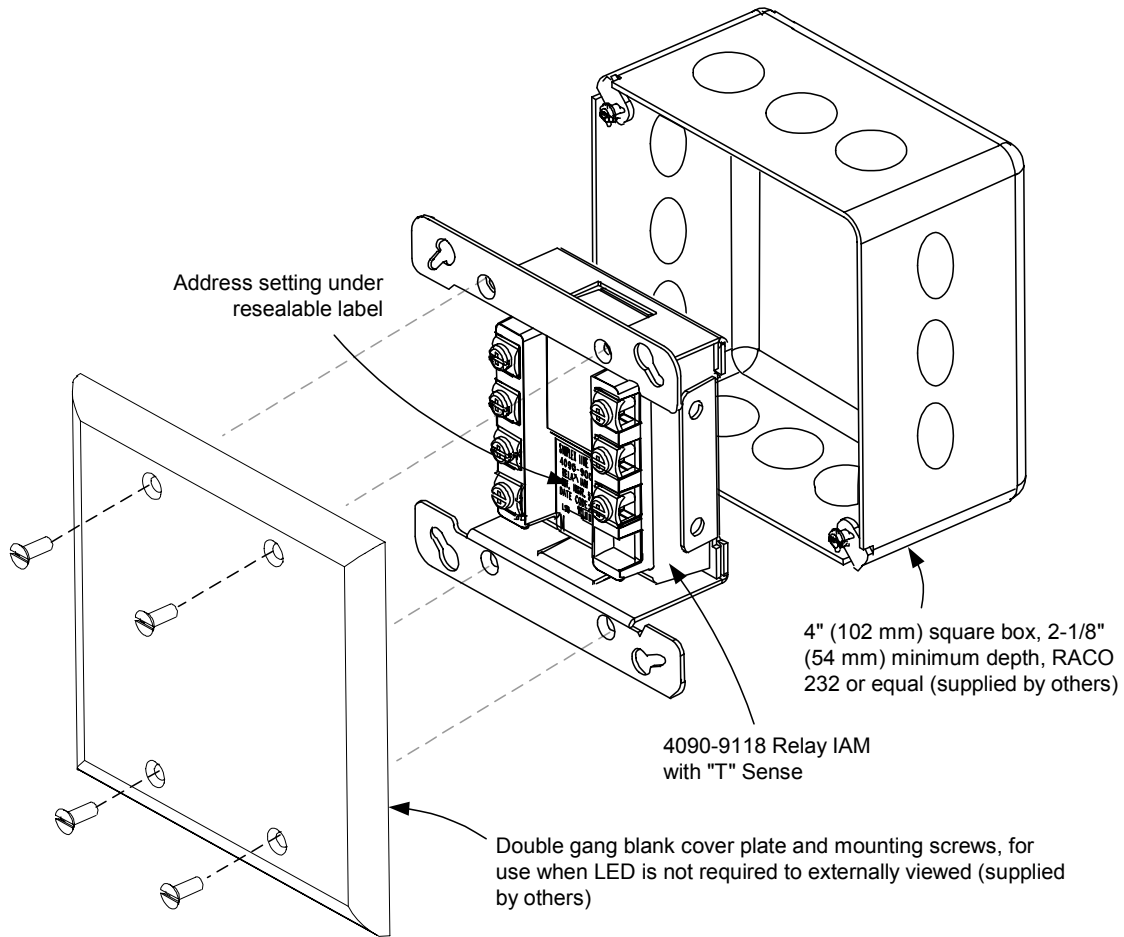
1/2 A @ 120 VAC, resistive loads
1/4 A @ 120 VAC, inductive loads

IDNet Wiring Distances:

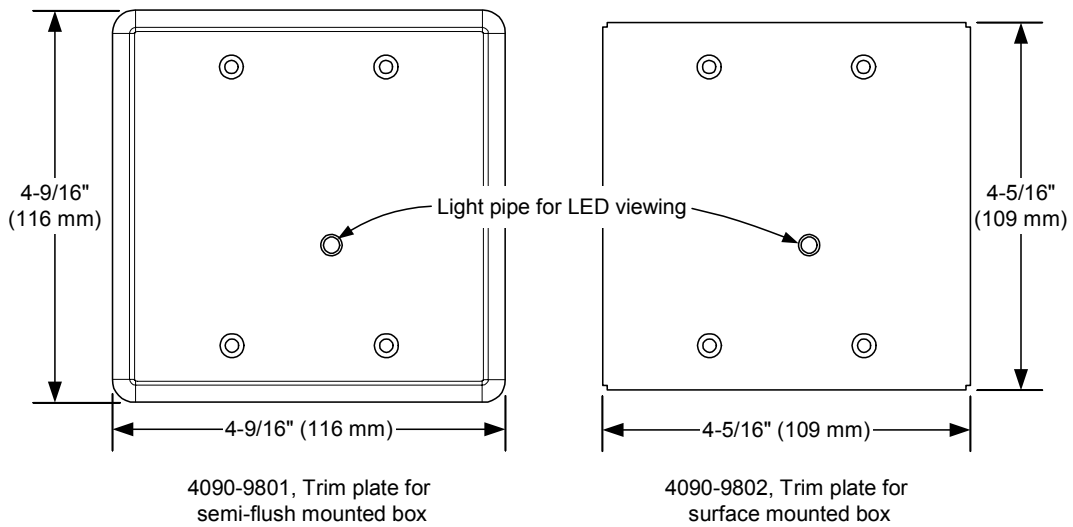
- Up to 2500 ft (762 m) from host control panel.
- Up to 10,000 ft (3048 m) total wiring distance, including "T" taps.

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

Mounting Information



Mounting Reference, Double Gang Blank Cover Plate



4090-9801, Trim plate for semi-flush mounted box

4090-9802, Trim plate for surface mounted box

Optional Trim Plates for Visible LED

Specifications

Electrical	
Communications	4100U IDNet, one address
Power	Consumes one unit load, power supplied from 4100U IDNet communications
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 mm ² to 3.31 mm ²)
Relay Contact Ratings, Form C (SPDT)	Power-Limited 2 A resistive, 1 A inductive @ 30 VDC
	Nonpower-Limited 1/2 A resistive, 1/4A inductive @ 120 VAC
IDNet Wiring Distance Reference	Up to 2500 ft (762 m) from the fire alarm control panel
	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)

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S4090-0007 4/02

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