

SIEMENS

Installation Instructions

Models TRI-S, TRI-D, TRI-R Addressable Interface Modules

The Model TRI Series Addressable modules from Siemens Industry, Inc., shown in Figure 1, interface direct shorting devices to the MXL System's ALD loop circuit.

Note: The TRI-S/-D/-R Series is not compatible with the XL3 System or the XLD-1 loop circuit.

The TRI modules are available in three models. The TRI-S and TRI-R can monitor a normally open or closed dry contact. The TRI-S model can only monitor and report the status of the contact, while the TRI-R incorporates an addressable Form C relay. The TRI-D is a dual input module that supervises and monitors two sets of dry contacts. It requires two address settings.

The TRI has a multi-color LED that flashes green when operating normally, amber if the unit is in trouble condition, and red to indicate a change of state. The TRI-D flashes twice, once for each address. The TRI-R red LED indicates a change of state in the relay. The use of the relay is programmable.

PROGRAMMING INSTRUCTIONS

1. Refer to Figure 2 to locate the openings on the TRI cover that allow access to the programming holes which are on the TRI printed circuit board.
2. To connect the TRI to the DPU Device Programming Unit or the FPI-32 Programmer /Tester, insert the plug from the cable provided with the programmer into the opening on the front of the TRI. Be sure to insert the locating tab on the plug into the slot for the locating tab on the TRI as shown in Figure 2.

CAUTION: TO PREVENT DAMAGE TO THE programmer, DO NOT connect a TRI to the programmer until at least one wire is removed from terminals 1 or 2 of the TRI.

Note: Connection from the DPU or FPI-32 to the TRI is keyed. Refer to Figures 5-8 for the proper connections to the control panel.

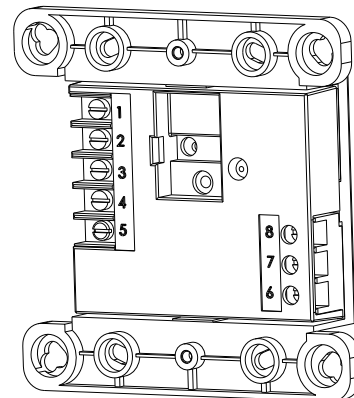


Figure 1
TRI Module

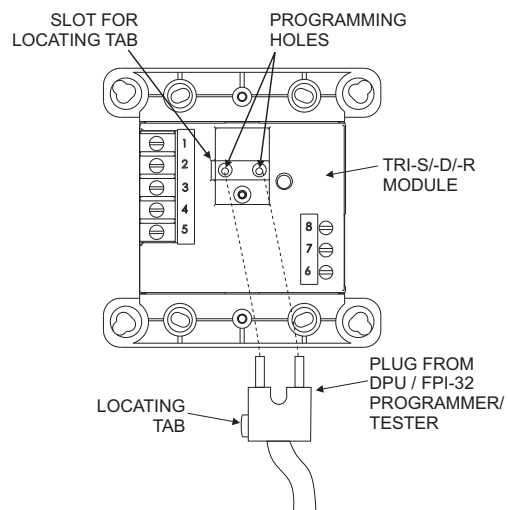
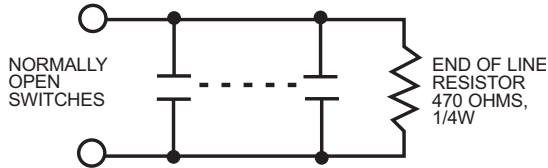


Figure 2
**Inserting the Programmer/Tester Cable
in the TRI Module**

3. (Refer to Figure 3.) Follow the instructions in the DPU User's Manual (P/N 315-033260) or the FPI-32 Programmer/Tester Manual (P/N 315-090077) to program the TRI to the following:
 - a. Desired address
 - b. Desired application for fire or proprietary burglary (security)
 - c. Normally open or normally closed switch



NOTES:

1. There can be any number of normally open switches.
2. The end of line resistor must be located at the last switch.
3. **Do not** wire a normally closed switch across the end of line resistor.

Application	FPI-32 / DPU	
	Switch	Device Use
Fire Alarm	Normally Open	Alarm
Fire Trouble	Normally Open	Trouble
Fire Supervisory	Normally Open	Trouble

Figure 3
Wiring Normally Open Switches

4. Record the device address on the label located on the TRI front panel. The TRI can now be installed and wired to the system.

ELECTRICAL RATINGS

Active 5VDC Module Current	0mA
Active 24VDC Module Current	6mA
Standby 24VDC Module Current	6mA

WIRING

(Refer to Figures 4-8)

Refer to the appropriate wiring diagram below and wire the addressable interface module accordingly.

Note: Recommended wire size:
18 AWG minimum, 14 AWG maximum

Wire larger than 14 AWG can damage the connector.

POWER LIMITED WIRING FOR TRI-R ADDRESSABLE INTERFACE MODULE

In compliance with NEC Article 760, all power limited fire protective signaling conductors must be separated a minimum of 1/4 inch from all of the following items located within an outlet box:

- electric light
- power
- Class 1 or non-power limited fire protective signaling conductors

To meet the above the requirements, the following guidelines **must be observed** when installing this interface module.

NOTE: If power limited wiring is not used within this outlet box, then the following guidelines do not apply. In that case, be sure to follow standard wiring practices.

TRI-R CONTROL MODULE BARRIER

The TRI-R Control Module Barrier must be used when the TRI-R relay contacts are connected to non-power limited lines. Break apart the barrier to the correct size and shape shown in Figure 4 for either the 4-inch square or double gang box. Install the barrier diagonally into the backbox to create two separate compartments within the backbox to separate the wires, as shown in Figure 4.

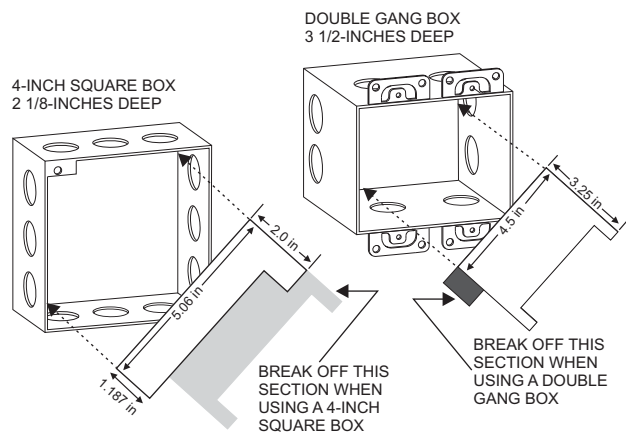


Figure 4
Installing the TRI-R Control Module Barrier

WIRING ENTERING OUTLET BOX

Power Limited Wiring

All power limited wiring must enter the outlet box separately from the electric light, power, Class 1, or non-powered limited fire protection signaling conductors. For the TRI-R, wiring to terminal block positions 1, 2, 3, 4, and 5 must enter the outlet box separately from terminals 6, 7, and 8.

IMPORTANT:

Minimize the length of wire entering the outlet box.

WIRING AT THE TERMINAL BLOCKS

Power Limited Wiring (Refer to Figure 5)

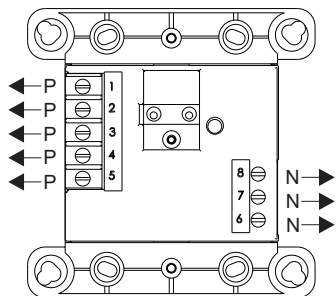
Wiring to positions 1, 2, 3, 4, and 5 is power limited.

Non-Power Limited Wiring

Wiring to positions 6, 7, and 8 is considered non-power limited.

Note: Remove all slack from these wires by pulling excess wiring back through the holes.

WIRES CONNECTED TO TERMINALS 1 THROUGH 5 TO ENTER/EXIT ELECTRICAL BOX OPPOSITE SIDE FROM WIRES CONNECTED TO TERMINALS 6 THROUGH 8.



P = POWER LIMITED
N = NON-POWER LIMITED

Figure 5

TRI-R Power Limited Wiring



EOL of line device must be a 470 ohm, 1/4W resistor. When replacing an existing TRI on a device loop, you must also replace the EOL resistor if it is not 470 ohms, 1/4W.

NOTES:

- All supervised switches must be held closed and/or open for at least a quarter of a second to guarantee detection.
- Use ULI listed EOL Model EL-30/31 mounting plate with 470 ohm, 1/4W resistor, P/N 140-820164. Order Model EL-30/31 separately.

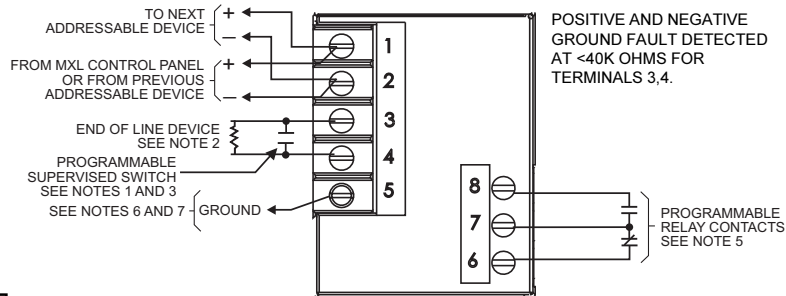


Figure 6
Model TRI-R Wiring

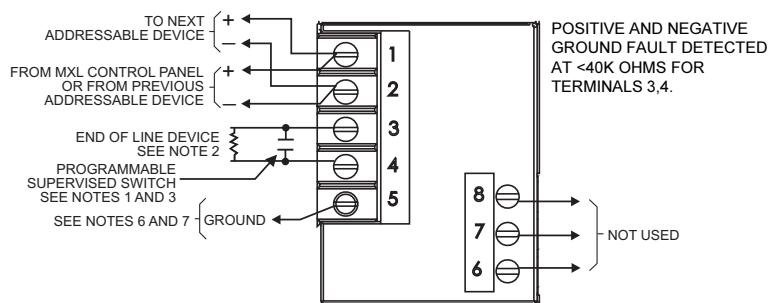


Figure 7
Model TRI-S Wiring

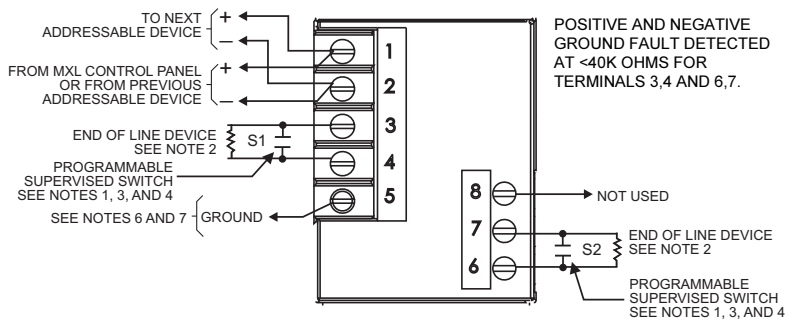


Figure 8
Model TRI-D Wiring

- The supervised switches have the following ratings:

Voltage maximum:	27 VDC
Current maximum:	6mA during polling
Contact resistance maximum:	10 ohms
Maximum cable length:	200 feet (18 AWG) max or 2.8 ohms max
$C_{\text{Line to line}}$:	0.02uF
$C_{\text{Line to shield}}$:	0.04uF
Max line size:	14 AWG
Min line size:	18 AWG

NOTES (Cont.):

4. Supervised switch S1 is on the first programmed address, and Supervised switch S2 is on the second programmed address.
5. Relay contacts are rated: 4A, 125 VAC resistive
4A, 30 VDC resistive
Inductive: 3.5A, 120 VAC (0.6P.F.)
3.0A, 30 VDC (0.6 P.F.)
2.0A, 120 VAC (0.4 P.F.)
2.0A, 120 VAC (0.35 P.F.)
2.0A, 30 VDC (0.35 P.F.)

The relay is shown in supervisory condition.

CAUTION
Ground shield wire **ONLY** at the specified location on the Control Panel.

6. **If a Good Local Earth Ground is Available:**
 - a. Terminal 5 must be connected to earth ground.
 - b. Use wire nuts to pass the shield wire through the

Addressable Interface Models TRI-S, TRI-D, and TRI-R mount directly into a (user supplied) double gang or 4 inch square electrical box. Fasten the module to the square box with the switchplate using the 2 screws provided.

NOTE: Be sure to program the TRI before fastening the switchplate to the unit.

electrical box with **NO** connection to the device terminal block or to local ground.

- c. Use shielded wire to connect the switch wiring to the TRI.
- d. Tie the switch wiring shield to the ALD wiring shield. **Do not connect** shield to terminal 5 or the local earth ground.
7. **If a Good Local Earth Ground is NOT Available:**
Connect shield to terminal 5.
8. **If ALD wiring is not shielded,** the switch wiring must be in metal raceway.
9. In supervisory:
TRI-S/-R draws 1.8mA
TRI-D draws 2.3mA

IMPORTANT
Terminal 5 of the TRI-S/-D/-R must be connected to a known good earth ground for proper operation. If the electrical box the TRI is installed in is grounded, connect Terminal 5 to same.

MOUNTING

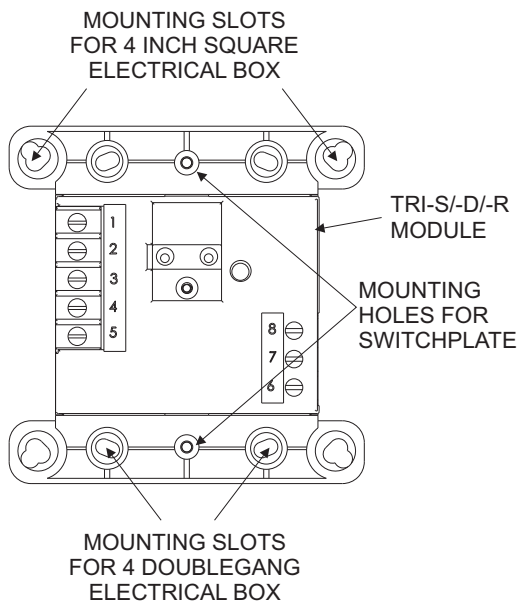


Figure 9
Mounting the TRI-S/-R/-D