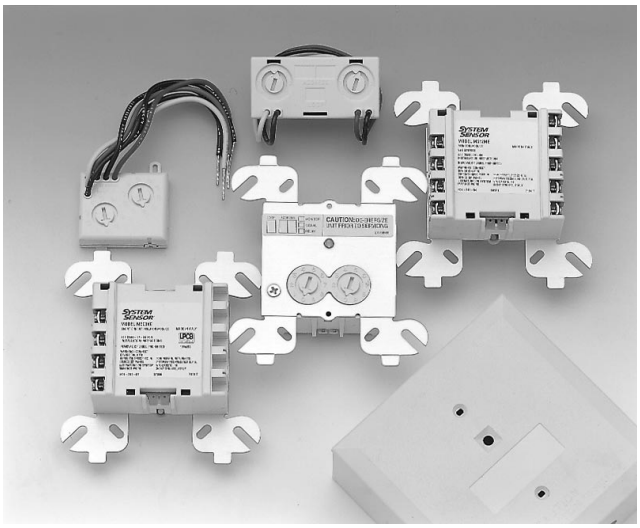
SECUTRON
Fire Alarm Systems

MODUL-R™ MRI-M500 SERIES

ADDRESSABLE MODULES



GENERAL DESCRIPTION

Secutron's Intelligent System offers features and performance that surpass conventional systems. The intelligent communication and command capabilities are used not only for the intelligent sensors but also for monitor, control, and isolator modules which can supervise and activate sounders, strobes, door closers, pull stations, waterflow switches, etc. Zones of non-intelligent 4-wire smoke detectors, which do not require their own individual address, can also be monitored by using an intelligent monitor module.

Each module (except the MRI-M500X) can be programmed from 01 to 99 with convenient direct decade address dials. A built-in address bit (not settable) is used by the system to differentiate a module address from a sensor address.

FEATURES

- **Mount in 4" square junction box or MRI-SMB500 (surface mounting box) (not MRI-M501M or MRI-M503ME)**
- **Full analog supervision**
- **Low standby current**
- **Latching output drive circuit controlled by the panel command**
- **Rugged industrial construction**
- **UL/ULC/EN-54 Listed**
- **SEMS screws for easy wiring**
- **Direct dial decade address entry**
- **Stable communications techniques with noise immunity**
- **Visible LED controlled by panel to be off, blinking, or latched on**

MRI-M500M

The MRI-M500M Monitor Module is designed to interface to contact devices, such as alarm contacts, waterflow switches, pull stations, etc. It is capable of Styles A, B, and D supervised wiring to the load device. Security signals may be monitored where allowed by code. Conventional 4-wire smoke sensors can be monitored through their alarm contacts, wired as an initiating zone to the module.

In addition to transmitting the supervised state of the monitored device (Normal, Short, or Open), the full analog supervision measurement is sent back to the panel. This allows impedance changes in the supervised loop to the monitored device to be detected.

Technical Data

Operating Voltage	15 to 32 VDC
Standby Current	300 µA (includes 100 µA normal supervision current, no communication)
Alarm Current	5.1 mA max. current with visible LEDs latch on
Supervision Current	50 µA open (max.) 100 µA normal (typical) 150 µA short (min.)
Humidity	10% to 93% relative humidity
Temperature Range	0° to 60° C (32° to 140° F)

Note: Do not install in locations where the normal ambient temperature range extends beyond 0° to 50° C (32° to 120° F) for extended periods.

Shipping Weight	150 g (5 oz.)
Dimensions	4" W x 4 1/2" H x 1 1/4" D

MRI-M501M MINI-MONITOR MODULE

The MRI-M501M Mini-Monitor Module is designed to fit inside devices or inside junction boxes behind devices. It provides an interface to contact devices, such as alarm contacts, waterflow switches, pull stations, etc. Security devices may be monitored where allowed by code. It is capable of Styles A and B supervised wiring to the load device. Conventional 4-wire smoke sensors can be monitored through their alarm contacts and trouble contacts, wired as an initiating loop to the module.

In addition to transmitting the supervised state of the monitored device (Normal, Short, or Open), the full analog supervision measurement is sent back to the panel. This allows impedance changes in the supervised loop to the monitored device to be detected.

Technical Data

Operating Voltage	15 to 32 VDC
Standby Current	300 µA (includes 100 µA normal supervision current, no communication)
Supervision Current	50 µA open (max.) 100 µA normal (typical) 150 µA short (min.)
Humidity	10% to 93% relative humidity
Temperature Range	0° to 60° C (32° to 140° F)

Note: Do not install in locations where the normal ambient temperature range extends beyond 0° to 50° C (32° to 120° F) for extended periods.

Shipping Weight	34 g (1.2 oz.)
Dimensions	2 5/8" W x 1 1/4" H x 1/2" D

MRI-M502M INTERFACE MODULE

The MRI-M502M Interface Module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. All two-wire detectors being monitored must be UL/ULC compatible with the module. A maximum of 20 smoke detectors can be monitored.

The MRI-M502M is addressed through the communication line of intelligent systems. When the module is interrogated, it transmits the status of one zone of two-wire detectors to an intelligent control panel. Status conditions are reported as normal, open, or alarm. The interface module supervises the zone of detectors and the connection of an external power supply. Two rotary decade switches allow setting module addresses from 01 to 99. A status LED indicator is provided and is controlled by code command from the control panel. The module provides a magnetically activated test switch for testing the module's electronics and connections to the control panel.

Technical Data

Communication Line – Terminals 1 and 2

Operating Voltage	15 to 32 VDC
Standby Current	200 µA (maximum @ 24 VDC, no communication) 1.3 mA (maximum, Style D enabled) 5.1 mA (maximum, 24V, LED latched on)
Loop Impedance	40 Ω maximum
Temperature Range	0° to 60° C (32° to 140° F)

Note: Do not install in locations where the normal ambient temperature range extends beyond 0° to 50° C (32° to 120° F) for extended periods.

Humidity	10% to 93% noncondensing
Shipping Weight	232 g (0.5 lbs.)
Dimensions	4" W x 4 1/2" H x 1 1/4" D Mounts to 4" square by 2 1/8" deep electrical boxes.

MRI-M500C Control Module

The MRI-M500C Control Module provides supervised monitoring of wiring to load devices that require an external power supply to operate, such as horns, strobes, bells, etc. It is capable of Styles A, B, and D supervision in the normal condition. Upon code command from the panel, the MRI-M500C will disconnect the supervision and connect the external power supply in the proper polarity across the load device. The disconnection of the supervision provides a positive indication to the panel that the control relay actually turned on. The external power supply is always relay isolated from the communication loop so that a trouble condition on the external power supply will never interfere with the rest of the system.

Full analog measurement of the supervised wiring is transmitted back to the panel and can be used to detect impedance changes or other special test functions.

The MRI-M500C Control Module also provides Form C relay operation. Form C relay operation requires the breaking of the supervision monitoring tabs on the side of the module.

Technical Data

Operating Voltage	15 to 32 VDC
Standby Current	300 µA (includes 100 µA normal supervision current, no communication)
Alarm Current	5.1 mA maximum current with visible LEDs latch on
Supervision Current	50 µA open (max.) 100 µA normal (typical) 150 µA short (min.)
Relay Contact Rating	
Resistive	2 amp @ 30 VDC
Inductive	0.3 amp @ 110 VDC (.35 P.F.); 0.3 amp @ 125 VAC (.35 P.F.); 0.6 amp, 30 VDC (.35 P.F.)
Humidity	10% to 93% relative humidity
Temperature Range	0° to 60° C (32° to 140° F)

Note: Do not install in locations where the normal ambient temperature range extends beyond 0° to 50° C (32° to 120° F) for extended periods.

Shipping Weight	150 g (5 oz.)
Dimensions	4" W x 4 1/2" H x 1 1/4" D

MRI-M500X ISOLATOR MODULE

The MRI-M500X Isolator Module is an automatic switch that opens when the line voltage drops below 4 volts. Isolator Modules should be spaced between groups of sensors in a loop to protect the rest of the loop. If a short occurs between any two isolators, then both iso-

lators immediately switch to an open circuit state and isolate the groups of sensors between them. The remaining units on the loop continue to fully operate. No more than 25 sensors (2 MRI-3251s) are recommended for each sensor group.

Technical Data

Operating Voltage	15 to 32 VDC
Standby Current	450 µA
Humidity	10% to 93% relative humidity
Temperature Range	0° to 60° C (32° to 140° F)

Note: Do not install in locations where the normal ambient temperature range extends beyond 0° to 50° C (32° to 120° F) for extended periods.

Shipping Weight	150 g (5 oz.)
Dimensions	4" W x 4 1/2" H x 1 1/4" D

MRI-M503ME MICRO MODULE

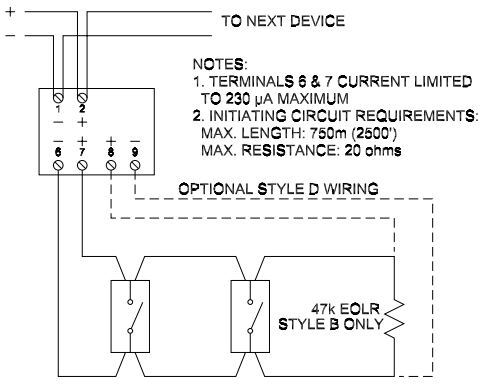
The MRI-M503ME stand-alone micro modules provides a two-wire initiating circuit for normally open contact fire alarm and supervisory devices. An LED indicator output drive is provided to allow visual monitoring of the module's operating condition. The MRI-M503ME is small and light enough to fit inside a single gang junction box behind the device being monitored, without the need to be rigidly mounted. **Note:** The MRI-M503ME is only EN-54 listed.

Technical Data

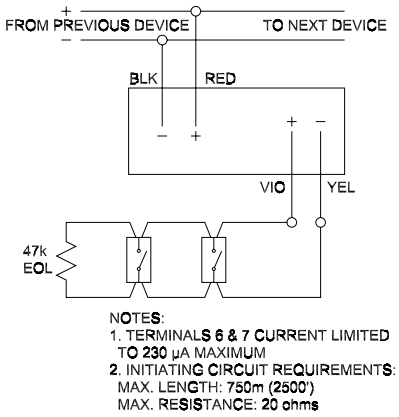
Supply Range	15 to 32 VDC
Standby Current	300 µA @ 24 VDC (maximum, no communication)
Supervisory Current	50 µA open (max.) 100 µA normal (typical) 150 µA short (min.)
Humidity	10% to 93% relative humidity, noncondensing
Temperature Range	–10° to 60° C (14° to 140° F)

Note: Do not install in locations where the normal ambient temperature range extends beyond 0° to 50° C (32° to 120° F) for extended periods.

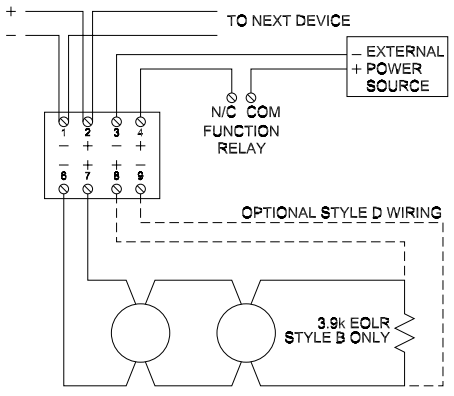
Weight	33 g (0.07 lbs.)
Dimensions:	1 7/8" W x 1 9/16" H x 1/2" D (excluding screw fixings and cables)



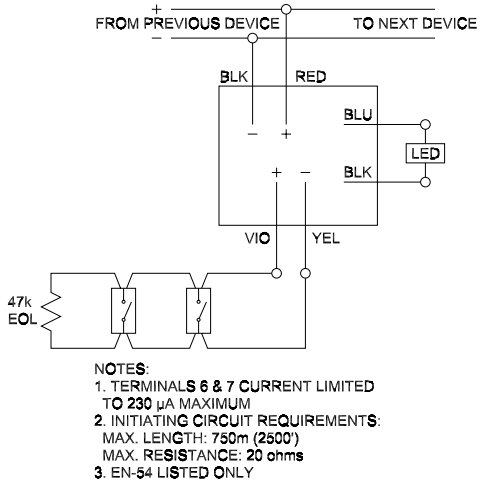
MRI-M500M Wiring



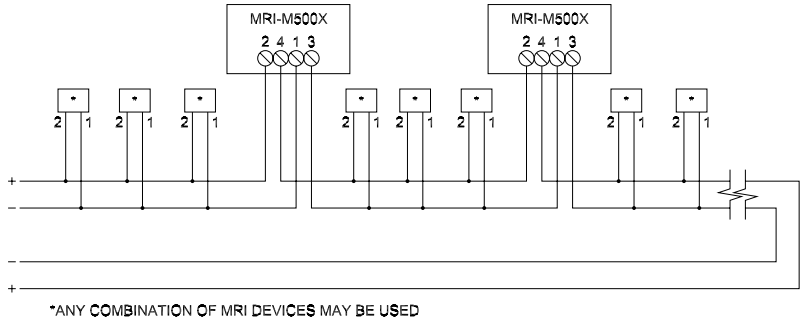
MRI-M501M Wiring



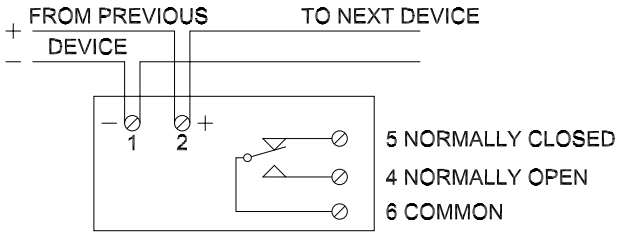
MRI-M502M Wiring

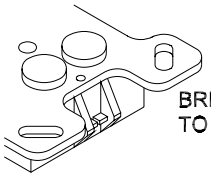


MRI-M503ME Wiring



MRI-M500X Wiring



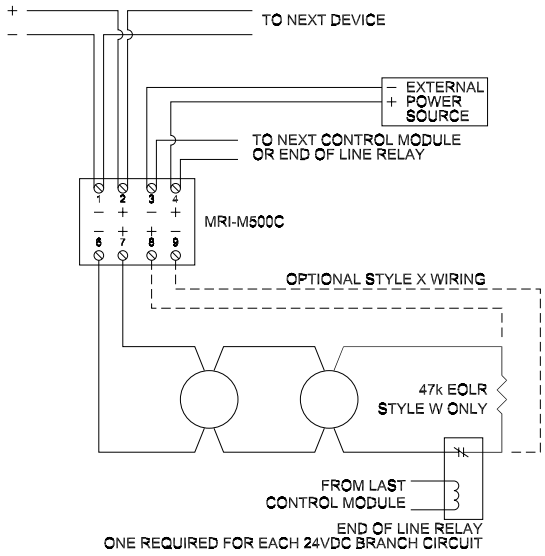


BREAK OFF TABS J1 & J2
TO ENABLE FORM C OPERATION

RELAY CONTACT RATINGS:
RESISTIVE: 2A, 30VDC
INDUCTIVE: 1A, 30VDC (0.6 PF)
0.3A, 110VDC (0.35 PF)
0.3A, 120VAC (0.35 PF)

NOTE: 1A, 30VDC RATING DOES NOT APPLY FOR PILOT DUTY OR MOTOR LOADS.

MRI-M500C Wiring for Form C Relay Use



MRI-M500C Wiring for Signal Circuits

MRI-MB500 MODULE BRACKET

A compact and labor-saving way to mount multiple modules in one location

MRI-CB500 CONTROL MODULE BARRIER

Separates power limited wiring from non-power limited wiring in control module applications

ORDERING INFORMATION

Part No.	Description
MRI-M500M	Monitor Module
MRI-M500C	Control Module
MRI-M500X	Isolator Module
MRI-M501M	Mini-Monitor Module
MRI-M502M	Interface Module
MRI-M503ME	Micro Module

Accessories

MRI-CB500	Control Module Barrier
MRI-MB500	Module Bracket
MRI-C58-134-03	Mounting Plate, 4 3/4" Square
MRI-SMB500	Surface Mount Box for MRI-M500 Series Modules, Plastic

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