500 Series Intelligent Modules

SYSTEM SENSOR®

Models Available*

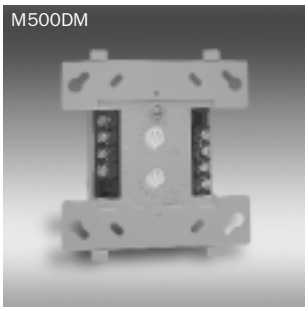
M500MB	Monitor Module
M500R	Relay Module
M500S	Supervised Control Module
M501M	Mini Monitor Module
M502M	Zone Interface Module
M500X	Isolator Module
M500DM	Dual Input Monitor Module
M500DR†	Dual Audio Riser Module
M500FP†	Firefighter Phone Module

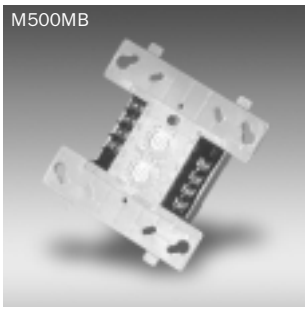
*Add 'A' suffix for Canadian products.

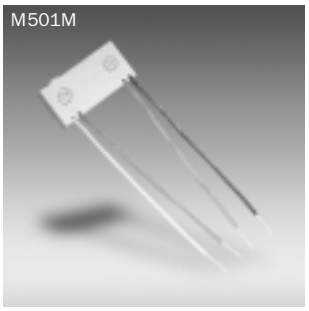
†Not ULC listed.

Accessories

CB500	Control Module Barrier
SMB500	Surface Mount Box







Product Overview

SEMS screws for easing wiring

Panel controlled status LED (except M501M)

Analog communications

Rotary address switches (except M500X)

Low standby current

Mounts in standard 4″ junction box

System Sensor's intelligent module products are designed to meet a wide range of applications. Monitor and control modules can be used to supervise and activate sounders, strobes, door closers, pull stations, waterflow switches, conventional smoke detectors, and more. Each module is rigorously designed and tested for electromagnetic compatibility and environmental reliability, in many cases exceeding industry standards. Modules are addressed with easy-to-use rotary code switches. Full size modules mount in standard 4″ x 4″ x 2⅛″ junction box. Wiring terminals are easily accessible for troubleshooting purposes.

M500MB Monitor Module, M501M Mini Monitor Module, and M500DM Dual Input Monitor Module

System Sensor's monitor modules provide an interface to contact devices, such as security contacts, waterflow switches, or pull stations. They are capable of Styles A and B supervised wiring to the load device (M500MB is capable of Style D). Conventional 4-wire smoke detectors can be monitored through their alarm and trouble contacts, wired as an initiating loop to the module.

In addition to transmitting the supervised state of the monitored device (normal, open, or short), 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.

The M500DM is capable of monitoring two separate Class B circuits simultaneously, making it ideal for waterflow tamper switch and flow switch monitoring.

The small size of the M501M allows it to fit inside devices or junction boxes behind devices.

M500X Isolator Module

The M500X Isolator Module is an automatic switch that opens when the line voltage drops below four volts. Isolator modules should be spaced between groups of sensors or modules in a loop to protect the rest of the loop. If a short occurs between any two isolators, then both isolators immediately switch to an open circuit state and isolate the devices between them. The remaining units on the loop continue to fully operate. No more than 25 devices are recommended for each group.

M502M Zone Interface Module

The M502M Zone Interface Module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. All two-wire detectors being monitored must be UL or ULC compatible with the module.

UL LISTED ULC FM APPROVED

Product Overview

The M502M is addressed through the communication line of an intelligent system. It transmits the status of one zone of two-wire detectors to the fire alarm control panel. Status conditions are reported as normal, open, or alarm. The interface module supervises the zone of detectors and the connection of the external power supply.

M500S Control Module

The M500S Control Module provides supervised monitoring of wiring to load devices that require an external power supply to operate, such as horns, strobes, or bells. It is capable of Styles Y and Z supervision. Upon command from the control panel, the M500S will disconnect the supervision and connect the external power supply 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 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.

M500R Relay Module

The M500R Relay Module contains two isolated sets of Form-C contacts, which operate as a DPDT switch. The module allows the control panel to switch these contacts on command. No supervision is provided for the notification appliance circuit.

M500DR Dual Audio Riser Module

The M500DR is a special applications control module that is designed to supervise a loop of speakers under normal conditions. When commanded by the control panel, the module then connects either of two audio amplifier circuits to the speakers. In this way, two separate audio messages can be broadcast over a single set of speakers with a single module.

M500FP Firefighter Phone Module

The M500FP is intended to monitor and control a loop of firefighter phones. It has the ability to differentiate between normal, off-hook, and trouble conditions. When taken off-hook, a phone will immediately receive a ringing tone, and the panel will receive an off-hook indication. The panel can then connect that off-hook phone to the main riser for the system.

General Specifications

Operating Voltage
15-32 VDC

Communication Line Loop Impedance
40 Ω max.

Temperature Range
32° to 120°F (0° to 49°C)

Relative Humidity
10% to 93%: noncondensing

Dimensions
M501M: 2.7″W x 1.7″H x 0.5″D
Others: 4.25″W x 4.65″H x 1.1″D

Shipping Weight
M501M: 1.2 oz (37g)
Others: 6.3 oz (196g)

Specifications: M502M

Standby Current
300 µA max @ 24 VDC (one communication every 5 sec. with LED enabled)

External Power Supply
18-28 VDC (100 mV ripple max.)

End-of-Line Resistance
3.9 kΩ (included)

External Supply Standby Current
11.5 mA @ 24 VDC (nominal)

External Supply Alarm Current
80 mA @ 24 VDC (nominal)

Specifications: M500X

Standby Current
450 µA max

Isolation Current
5 mA max

Fault Detection Delay
250 ms min.

Fault Detection Threshold
4 Volts

Line Restoration Threshold
7 Volts

Specifications: M500MB, M500S, M501M

Standby Current
400 µA max @ 24 VDC (one communication every 5 sec. with 47k EOL)

550 µA max @ 24 VDC (one communication every 5 sec. with EOL<1k)

5.5 mA (with LED latched on)

End-of-Line Resistance
47 kΩ (included)

Specifications: M500R

Standby Current
300 µA @ 24 VDC (one communication every 5 sec. with LED enabled)

LED Current
5.5 mA (with LED latched on)

Relay Contact Ratings
3.0 A @ 30 VDC resistive
0.9 A @ 110 VDC resistive
0.9 A @ 125 VAC resistive
0.5 A @ 125 VAC inductive (PF=.35)
0.7 A @ 75 VAC inductive (PF=.35)

Specifications: M500DM

Standby Current
750 µA max. @ 24 VDC (one communication every 5 sec. with 47k EOL)

Alarm Current
970 µA max. (one communication every 5 sec.)
6 mA (with LED latched on)

End-of-Line Resistance
47 kΩ (two included)

Specifications: M500FP

Standby Current
2.4 mA max. (one communication every 5 sec. with LED enabled)

Comm. Line Current
4.0 mA max. (no communication, LED off, 1200 Ω phone)

Acceptable Phone Resistance
1200 Ω (nominal)

End-of-Line Resistance
3.9 kΩ (included)

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