M502MA Two-wire Conventional Detector Interface Module

Specifications
Temperature: 32° to 120° F (0° to 49° C)
Humidity: 10% to 93% Noncondensing
Weight: .5 lbs (232 g)
Dimensions: 4 1/2" H, 4 1/4" W, 1 1/4" D (Mounts to 4" square by 2 1/8" deep electrical boxes.)
Test Features: Magnetically activated reed switch.
Accessories: SMB500 Surface Mount Box for 500 series modules

Communication Line – Terminals 1 & 2
Voltage: 15 – 32 VDC
Current: 200 µA Max @ 24 VDC, no communication
1.3 mA Max (Style D enabled)
5.1 mA Max 24V (LED latched on)
Loop Impedance: 40 Ω Max

External Power Supply Requirements – Terminals 3 & 4
Voltage: 17.6 – 28.2 VDC (filtered, regulated, and power-limited)
Ripple: 100mV RMS Max
Current: 92 mA per module
(Power must be interrupted to reset detectors. The interface module must have a minimum of 15 VDC at terminals 3 and 4 to function properly. Ground fault detection must be accomplished by the control panel.)

Initiating Device Circuit (IDC) – Terminals 6, 7, 8, & 9
Voltage: 12.5 to 30.3 VDC (Ripple: 100mV RMS Max)
Current: 92 mA Max
IDC Loop Impedance: 25 Ω Max
Standby Current: 10 mA Max @ maximum IDC voltage
Detector Current in Standby: Up to 2.4 mA
Alarm Current: 20 mA minimum
Style: Style B (class B) / Style D (class A)
EOL Resistance: 3.9K ohm nominal
(Detector loop current is sufficient to ensure operation of one alarmed detector per zone.)

Before Installing
This information is included as a quick reference installation guide. Refer to the appropriate installation manual for detailed system information. If the modules will be installed in an existing operational system, inform the operator and local authority that the system will be temporarily out of service. Disconnect power to the control panel before installing the modules.

NOTICE: This manual should be left with the owner/user of this equipment.

General Description
The M502MA Interface Module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. All two-wire detectors being monitored must be ULC compatible with the module.

The module 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 00–99. 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 (see Figure 1).
**Compatibility Requirements**
To insure proper operation, this module shall be connected to compatible intelligent ULC listed control panels only. Conventional two-wire smoke detectors must be ULC compatible with the interface module.

**Package Contents**
The interface module includes the following items:
- (1) Two-wire interface module
- (1) 3.9K ohm end-of-line resistor (A2143-10)
- (1) Off-white cover plate
- (1) Screw pack for cover plate

**Mounting**
The M502MA Interface Module mounts directly to 4 inch square electrical boxes as shown in Figure 2. The box must have a minimum depth of 2-1/8 inches.

**Wiring**

NOTE: All wiring must conform to applicable local codes, ordinances and regulations. When using control modules in nonpower limited applications, the System Sensor CB500 Module Barrier must be used to meet ULC and/or NBC requirements for the separation of power-limited and nonpower-limited terminals and wiring. The barrier must be inserted in a 4"x4"x2\(\frac{1}{8}\)" junction box, and the control module must be placed into the barrier and attached to the junction box (Figure 2A). The power-limited wiring must be placed into the isolated quadrant of the module barrier (Figure 2B).

1. Install module wiring in accordance with the job drawings and appropriate wiring diagrams (Figures 3 – 5).
2. Set the address on the module per job drawings.
3. Secure module to electrical box (supplied by installer), as shown in Figure 2A.

**Testing**
The M502MA Interface Module can be tested with a test magnet available from System Sensor (M02-04-01- see Figure 1). The magnet test checks the module’s electronics and connections to the control panel. Interfaced two-wire detectors must be tested independently. Test two-wire detectors per manufacturer’s installation instructions.
M502MA Interface Module Wiring Diagrams

Figure 3. Interface two-wire conventional detectors, NFPA Style B:

Figure 4. Interface two-wire conventional detectors, NFPA Style D:
Three-Year Limited Warranty

System Sensor warrants its enclosed module to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for this smoke detector. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company’s obligation of this Warranty shall be limited to the repair or replacement of any part of the smoke detector which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor’s toll free number 1-800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: System Sensor, Repair Department, RA #__________, 6581 Kitimat Rd., Unit #6, Mississauga, Ontario, L5N 3T5.

Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company’s negligence or fault. Some legislations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights under common law.