

## Intelligent Monitor and Control Modules

### Features

- Mount in 4" square junction box
- Full analog supervision
- Interface with 4-wire conventional detector loops (9191 Interface Module)
- Low standby current
- Latching output drive circuit controlled by the panel command
- Rugged industrial construction
- Listed to UL 864 and EN-54
- 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
- UL, ULC, CSFM listed, MEA and FM approved



From top left to right,  
9160 Isolator Module, 9159  
Control Module, 9157 Monitor  
Module and 9158 Mini-Monitor  
Module

### Description

Faraday'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. Loops 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 9160) 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.

#### Model 9158 Mini-Monitor Module

The 9158 Mini-Monitor Module is designed to fit inside devices or inside junction boxes behind devices. It provides an interface to contact devices, such as security contacts, waterflow switches, pull stations, etc. It is capable of Styles A and B supervised wiring to the load device. Conventional 4-wire smoke sensors can be monitored through their dry alarm contacts and dry 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.

#### Model 9157 Monitor Module

The 9157 Monitor Module is designed to interface to contact devices, such as tamper switches, waterflow switches, pull stations, etc. It is capable of Styles A, B, and D supervised wiring to the load device. Conventional 4-wire smoke sensors can be monitored through their alarm 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.

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**Model 9159 Control Module**

The 9159 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 9159 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 module signalling lines can operate with styles .5 through 6, dependent upon panel function.

**Model 9160 Isolator Module**

The 9160 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

isolators 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 are recommended for each sensor group.

**Model 9191 Interface Module (not shown)**

The 9191 Interface Module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. All two-wire detectors being monitored must be UL compatible with the module. External power is required.

The 9191 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.

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**Specifications - Models 9157, 9158, 9159, and 9160****Operating Voltage**

15–32 VDC

**Standby Current**

9157, 9158, 9159: 300  $\mu$ A (includes 100 $\mu$ A normal supervision current, no communication)

9160: 450  $\mu$ A

**Alarm Current**

9157, 9159: 5.1 mA max. current with visible LEDs latch on

**Supervision Current**

9157, 9158, 9159: 50  $\mu$ A open (max.); 100  $\mu$ A normal (typical); 150  $\mu$ A short (min.)

**Relay Contact Rating for 9159**

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**

32° to 140° F (0° to 60° C)

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

**Shipping Weight**

9157, 9159, 9160: 5 oz. (150 g)

9158: 1.2 oz. (34 g)

**Dimensions**

9157, 9159, 9160: 4" (W)  $\times$  4-1/2" (H)  $\times$  1-1/4" (D)

9158: 2-5/8" (W)  $\times$  1-1/4" (H)  $\times$  1/2" (D)

## Specifications - Model 9191

### Communication Line – Terminals 1 and 2

Operating Voltage: 15 – 32 VDC  
 Standby Current: 200  $\mu$ A (maximum @ 24 VDC, no communication)  
 1.3 mA (maximum, Style D enabled);  
 5.1 mA (maximum, 24V, LED latched on)

### Communication Line

Loop Impedance: 40  $\Omega$  maximum

### Temperature Range

32° to 140° F (0° to 60° C)

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

### Humidity

10% to 93% noncondensing

### Shipping Weight

0.5 lbs. (232 g)

### Dimensions

4" (W) x 4-1/2" (H) x 1-1/4" (D) (Mounts to 4" square by 2-1/8" deep electrical boxes.)

## Ordering Information

Part No.	Description
9157 .....	(M500MB) Monitor Module with LED
9158 .....	(M501M) Monitor Module, Class B/Style B
9191 .....	(M502M) Conventional Detector Monitor Module
9159 .....	(M500CH) Control Module, Signal/Relay
9160 .....	(M500X) Isolator Module

## Accessories

9192 ..... (CB500) Power Limited Wiring Control Module Barrier

**Note:** These devices are supplied for Faraday by System Sensor®



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