

# FMM-1, FMM-101, FZM-1, FCM-1, FRM-1 Series

## Monitor, Interface Control & Relay Modules



FMM-1 Monitor Module

### General

Three different monitor modules are available for Notifier's intelligent control panels for a variety of applications. Monitor modules supervise a circuit of dry-contact input devices, such as Sprinkler Valves or Manual Call Points, or monitor and power a circuit of two-wire smoke detectors (FZM-1).

**FMM-1 Monitor Module** is a standard-sized module (typically mounts to a 10.16 cm square box) that supervises a circuit of dry-contact input devices.

**FMM-101 Mini Monitor Module** is a miniature monitor module a mere 3.302 cm H x 6.985 cm W x 1.651 cm D that supervises a circuit of dry-contact input devices. Its compact design allows the FMM-101 to be mounted in a single-gang box behind the device it monitors.

**FZM-1 Interface Module** is a standard-sized module that monitors and supervises compatible two-wire, 24 volt, smoke detectors on a circuit.

**FCM-1 Addressable Control Module** provides Notifier intelligent fire alarm control panels a circuit for Notification Appliances (horns, strobes, speakers, etc.). Addressability allows the FCM-1 to be activated, either manually or through panel programming, on a select (zone or area of coverage) basis.

**FRM-1 Addressable Relay Module** provides the system with a dry-contact output for activating a variety of auxiliary devices, such as fans, dampers, control equipment, etc. Addressability allows the dry contact to be activated, either manually or through panel programming, on a select basis.

FlashScan<sup>®</sup> (U.S. Patent 5,539,389) is a communication protocol developed by NOTIFIER that greatly increases the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed

## Features

- Built-in type identification automatically identifies this device as a monitor module to the control panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan loops; 01 – 99 on CLIP loops.
- LED flashes green during normal operation (programmable option) and latches on steady red to indicate alarm

## FMM-1 Monitor Module

The FMM-1 Monitor Module is intended for use in intelligent, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a two-wire or four-wire fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The module has a panel-controlled LED indicator. The FMM-1 can be used to replace MMX-1 modules

### FMM-1 Applications

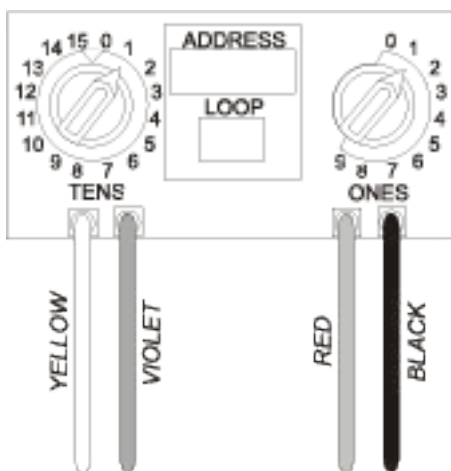
Use to monitor a zone of four-wire smoke detectors, manual normally open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit may be wired as an typical 2-wire initiating circuit configuration or 4-wire fault tolerant initiating circuit configuration. A 47K Ohm End-of-Line Resistor (provided) terminates the circuit. No resistor is required for supervision of the circuit.

### FMM-1 Operation

Each FMM-1 uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

### FMM-1 Specifications

NOMRAL OPERATING VOLTAGE	15- 32 VDC
MAXIMUM CURRENT DRAW	5.0 mA (LED on)
AVERAGE OPERATING CURRENT	375 A (LED flashing), 1 communication every 5 seconds, 47k EOL
MAXIMUM IDC WIRING RESISTANCE	1500 Ohms
MAXIMUM IDC VOLTAGE	11 Volts
EOL RESISTANCE	47k Ohms
TEMPERATURE RANGE	0 C to 49 C
HUMIDITY RANGE	10% to 93% non-condensing



## FMM-101 Mini Monitor Module

The FMM-101 Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The FMM-101 is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm and security devices. The FMM-101 can be used to replace MMX-101 modules in existing systems.



### FMM-101 Applications

Use to monitor a single device or a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit/device is wired as an 2-wire initiating device circuit configuration. A 47k Ohm End-of-Line Resistor (provided) terminates the circuit.

### FMM-101 Operation

Each FMM-101 uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC).

### FMM-101 Specifications

NOMRAL OPERATING VOLTAGE	15- 32 VDC
AVERAGE OPERATING CURRENT	350 A, 1 communication every 5 seconds, 47k EOL; 600 A Max. (Communicating, IDC Shorted)
MAXIMUM IDC WIRING RESISTANCE	1500 Ohms
MAXIMUM IDC VOLTAGE	11 Volts
EOL RESISTANCE	47k Ohms
TEMPERATURE RANGE	0 C to 49 C
HUMIDITY RANGE	10% to 93% non-condensing
DIMENSIONS	3.302 cm high x 6.985 cm wide x 1.651 cm deep.

## FZM-1 Interface Module

The FZM-1 Interface Module is intended for use in intelligent, addressable systems, where the individual address of each module is selected using built-in rotary switches. This module allows intelligent panels to interface and monitor two wire conventional smoke detectors. It transmits the status (normal, open, or alarm) of one full zone of conventional detectors back to the control panel. All two-wire detectors being monitored must be compatible with the module.

### FZM-1 Applications

Use the FZM-1 to monitor a zone of two-wire smoke detectors. The monitored circuit may be wired as an typical 2-wire initiating circuit configuration or 4-wire fault tolerant initiating circuit configuration. A 3.9 k Ohm End-of-Line Resistor (provided) terminates the end of the S circuit (maximum IDC loop resistance is 25 Ohms). Install End-of-Line Resistor across terminals 8 and 9 for application.

### FZM-1 Operation

Each FZM-1 uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

### FZM-1 Specifications

NOMRAL OPERATING VOLTAGE	15- 32 VDC
MAXIMUM CURRENT DRAW	5.1 mA (LED on)
MAXIMUM IFC WIRING RESISTNACE	25 Ohms
AVERAGE OPERATING CURRENT	270 A, 1 communication and 1 LED flash every 5 seconds, 3.9k EOL



## FZM-1 Specifications

EOL RESISTANCE	3.9k Ohms
EXTERNAL SUPPLY VOLTAGE (BETWEEN TERMINAL T10 AND T11)	<ul style="list-style-type: none"><li>• DC voltage: 24 volts power limited.</li><li>• Ripple voltage: 0.1 Vrms maximum.</li><li>• Current: 90 mA per module maximum.</li></ul>
TEMPERATURE RANGE	0 C to 49 C
HUMIDITY RANGE	10% to 93% non-condensing
DIMENSIONS	11.43 cm high x 10.16 cm wide x 3.175 cm deep. Mount to a 10.16 cm square x 5.398 cm deep box.

## FCM-1 & FRM-1 Control and Relay Module

- Built-in type identification automatically identifies these devices to the control panel.
- Internal circuitry and relay powered directly by two-wire SLC loop. The FCM-1 module requires power (for horns, strobes, etc.), or audio (for speakers).
- Integral LED “blinks” green each time a communication is received from the control panel and turns on in steady red when activated.
- LED blink may be deselected globally (affects all devices).
- High noise immunity (EMF/RFI).
- The FCM-1 may be used to switch 24-volt NAC power, audio (up to 70.7 Vrms).
- Wide viewing angle of LED.
- SEMS screws with clamping plates for wiring ease.
- Direct-dial entry of address 01– 159 for FlashScan loops, 01 – 99 for CLIP mode loops.
- Speaker, and audible/visual applications may be wired for typical 2-wire or 4-wire fault tolerant configuration

### FCM-1, FRM-1 Applications

FCM-1 is used to switch 24 VDC audible/visual power, high-level audio (speakers). FRM-1 may be programmed to operate dry contacts for applications such as door holders or Air Handling Unit shutdown, and to reset four-wire smoke detector power.

### FCM-1, FRM-1 Construction

- The face plate is made of off-white heat-resistant plastic.
- Controls include two rotary switches for direct-dial entry of address (01-159).
- FCM-1 is configured for a single 2-wire or 4-wire fault tolerant Notification Appliance Circuit.
- FRM-1 provides two Form-C dry contacts that switch together.

### FCM-1, FRM-1 Operation

Each FCM-1 or FRM-1 uses one of 159 possible module addresses on a SLC loop (99 on CLIP loops). It responds to regular polls from the control panel and reports its type and status, including the open/normal/short status of its Notification Appliance Circuit (NAC). The LED blinks with each poll received. On command, it activates its internal relay. The FCM-1 supervises 2-wire or 4-wire notification or control circuits.

Upon code command from the panel, the FCM-1 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.



Rotary switches set a unique address for each module. The address may be set before or after mounting. The built-in TYPE CODE (not settable) will identify the module to the control panel, so as to differentiate between a module and a sensor address.

### FCM-1 Specifications

NOMRAL OPERATING VOLTAGE	15- 32 VDC
MAXIMUM CURRENT DRAW	6.5 mA (LED on)
AVERAGE OPERATING CURRENT	350 A direct poll, 375 A group poll with LED flashing, 485 A Max. (LED flashing, NAC shorted.)
MAXIMUM NAC LINE LOSS	4 VDC
EXTERNAL SUPPLY VOLTAGE (BETWEEN TERMINAL T10 AND T11)	Maximum (NAC): Regulated 24 VDC; Maximum (Speakers): 70.7 V RMS, 50W.
DRAIN ON EXTERNAL SUPPLY	1.7 mA maximum using 24 VDC supply; 2.2 mA Maximum using 80 VRMS supply
MAX NAC CURRENT RATINGS:	For class B wiring system, the current rating is 3A; For class A wiring system, the current rating is 2A.
TEMPERATURE RANGE	0 C - 49 C
HUMIDITY RANGE	10% to 93% non-condensing
DIMENSIONS	114.3 mm high x101.6 mm wide x 31.75 mm deep. Mounts to a 101.6 mm square x 53.975 mm deep box.

### FRM-1 Specifications

NOMRAL OPERATING VOLTAGE	15- 32 VDC
MAXIMUM CURRENT DRAW	6.5 mA (LED on)
AVERAGE OPERATING CURRENT	230 A direct poll; 255 A group poll.
EOL RESISTANCE	not used
TEMPERATURE RANGE	0 C - 49 C
HUMIDITY RANGE	10% to 93% non-condensing

### FRM-1 Contact Ratings

CURRENT RATING	MAXIMUM VOLTAGE	LOAD DESCRIPTION	APPLICATION
3A	30 VDC	Resistive	Non-Coded
2A	30 VDC	Resistive	Coded
0.9A	110 VDC	Resistive	Non-Coded
0.9A	125 VDC	Resistive	Non-Coded
0.5A	30 VDC	Inductive (L/R= 5ms)	Coded
1A	30 VDC	Inductive (L/R= 2ms)	Coded
0.3A	125 VAC	Inductive (PF= 0.35)	Non-Coded
1.5A	25 VAC	Inductive (PF= 0.35)	Non-Coded
0.7A	70.7 VAC	Inductive (PF= 0.35)	Non-Coded
2A	25 VAC	Inductive (PF= 0.35)	Non-Coded

Note: Maximum (Speakers): 70.7 V RMS, 50W



## Installation

FMM-1 and FZM-1 modules mount directly to a standard 10.16 cm square, 5.398 cm deep, electrical box. They may also be mounted to the SMB500 surface-mount box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

The FMM-101 module is intended to be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances, and regulations.

## Agency Listings and Approvals

The listings and approvals below apply to the module specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

SAI Global : License SMKH25312

## Ordering Information

FMM-1-AUS	Monitor module
FMM-101-AUS	Monitor module, miniature
FZM-1-AUS	Monitor module, two-wire detectors
FCM-1-AUS	Intelligent Addressable Control Module
FRM-1-AUS	Intelligent Addressable Relay Module
SMB500	Optional surface-mount backbox.

NOTE: For installation instructions, see the following documents:

- FCM-1 - Installation Manual I56\_3500\_003
- FRM -1 - Installation Manual I56-3502-002
- FMM-1 - Installation Manual I56-3506-001
- FMM101 - Installation Manual I56-3508-001
- FZM-1 - Installation Manual I56-3504-002

This document is not intended for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without

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