



NOTIFIER FCM-1 Supervised Control Module Installation Guide

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NOTIFIER FCM-1 Supervised Control Module



1. Product Information:

- This product is a speaker supervision and switching system.
- It is designed to ensure fault tolerance and comply with NFPA Style Z standards.
- The audio circuit wiring must be twisted pair as a minimum.
- Wires must be supervised per NFPA guidelines.
- For detailed information, refer to the Notifier Installation Manual.
- Modules should be connected to listed compatible audio circuit control panels only.
- Do not loop wire around terminals 10 and 11.
- Break the wire to ensure supervision of connections.
- The product can be connected to a panel or previous audio amplifier with a maximum voltage of 70.7 Vrms.
- Use only models AA-30, AA100, or AA-120 as the amplifier, which must provide signal line circuit (SLC) wiring supervision per NFPA standards.
- The maximum voltage for the product is 32 VDC.
- Twisted pair wiring is recommended.
- There is an internal 47K EOL (End-of-Line) resistor located at terminals 8 and 9.
- All wiring shown in the diagram is supervised and power limited.

2. Product Usage Instructions:

- Ensure that the audio circuit wiring is twisted pair as a minimum.
- Supervise all wires according to NFPA guidelines.
- Refer to the Notifier Installation Manual for detailed information on installation.
- Connect the modules to compatible audio circuit control panels only.
- Do not loop the wire around terminals 10 and 11.
- Break the wire to ensure proper supervision of connections.
- If connecting to a panel or previous audio amplifier, make sure the maximum voltage is 70.7 Vrms.
- Use only models AA-30, AA100, or AA-120 as the amplifier, which must provide SLC wiring supervision per NFPA standards.
- Do not exceed the maximum voltage of 32 VDC.

- It is recommended to use twisted pair wiring for optimal performance.
- The internal 47K EOL resistor is located at terminals 8 and 9.
- Ensure that all wiring is supervised and power limited as shown in the diagram.

SPECIFICATIONS

- Normal Operating Voltage: 15 to 32 VDC
- Maximum Current Draw: 6.5 mA (LED on)
- Average Operating Current: 375µA (LED flashing – in group poll mode) 350µA (LED flashing – in direct poll mode); 485µA Max. (LED flashing, NAC shorted)
- Maximum NAC Line Loss: 4 VDC
- External Supply Voltage (between Terminals T10 and T11)
- Maximum (NAC): Regulated 24 VDC
- Maximum (Speakers): 70.7 V RMS, 50 W
- 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: 32°F to 120°F (0°C to 49°C)
- Humidity: 10% to 93% Non-condensing
- Dimensions: 4.675" H x 4.275" W x 1.4" D (Mounts to a 4" square by 21/8" deep box.)
- Accessories: SMB500 Electrical Box; CB500 Barrier

RELAY CONTACT RATINGS

CURRENT RATING	MAXIMUM VOLTAGE	LOAD DESCRIPTION	APPLICATION
2 A	25 VAC	PF = 0.35	Non-coded
3 A	30 VDC	Resistive	Non-coded
2 A	30 VDC	Resistive	Coded
0.46 A	30 VDC	(L/R = 20ms)	Non-coded
0.7 A	70.7 VAC	PF = 0.35	Non-coded
0.9 A	125 VDC	Resistive	Non-coded
0.5 A	125 VAC	PF = 0.75	Non-coded
0.3 A	125 VAC	PF = 0.35	Non-coded

BEFORE INSTALLING

This information is included as a quick reference installation guide. Refer to the control panel 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

FCM-1 Supervised Control Modules are intended for use in intelligent, twowire systems, where the individual address of each module is selected using the built-in rotary switches. This module is used to switch an external power supply, which can be a DC power supply or an audio amplifier (up to 80 VRMS), to notification appliances. It also supervises the wiring to the connected loads and reports their status to the panel as NORMAL, OPEN, or SHORT CIRCUIT. The FCM-1 has two pairs of output termination points available for fault-tolerant wiring and a panel-controlled LED indicator. This module can be used to replace a CMX-2 module that has been configured for supervised wiring operation.

COMPATIBILITY REQUIREMENTS

To ensure proper operation, this module shall be connected to a compatible Notifier system control panels only (list available from Notifier).

MOUNTING

The FCM-1 mounts directly to 4-inch square electrical boxes (see Figure 2A).

The box must have a minimum depth of 2 1/8 inches. Surface mounted electrical boxes (SMB500) are available. The module can also mount to the DNR(W) duct housing.

WIRING

NOTE: All wiring must conform to applicable local codes, ordinances, and regulations.

When using control modules in nonpower limited applications, the CB500 Module Barrier must be used to meet UL requirements for the separation of power-limited and nonpower-limited terminals and wiring. The barrier must be inserted into a 4" × 4" × 2 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.
2. Set the address on the module per job drawings.
3. Secure module to electrical box (supplied by installer), see Figure 2A.

Wire should be stripped to the appropriate length (recommended strip length is 1/4" to 3/8"). Exposed conductor should be secured under the clamping plate and should not protrude beyond the terminal block area.

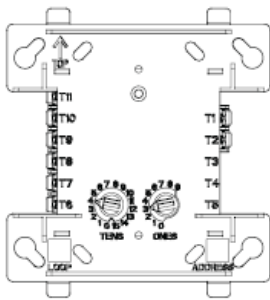
CAUTION: Do not loop wire under terminals. Break wire run to provide supervision of connections.

IMPORTANT: When using the FCM-1 for audio applications, remove Jumper (J1) and discard. The Jumper is located on the back as shown in Figure 1B.

J1 must be removed whenever power supply monitoring feature is not required.

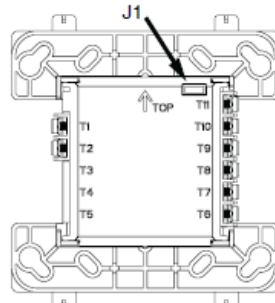
NOTE: All references to power limited represent "Power Limited (Class 2)".
All references to Class A also include Class X.

FIGURE 1A:



C1059-00

FIGURE 1B. JUMPER LOCATION:



C0910-00

FIGURE 2A. MODULE MOUNTING WITH BARRIER:

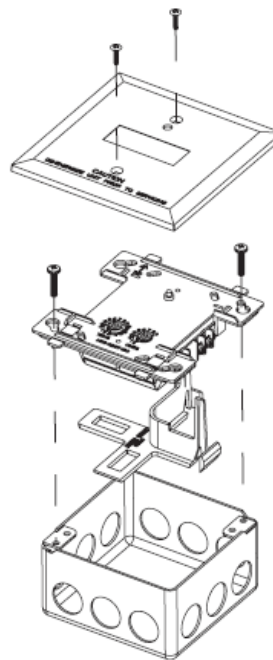


FIGURE 2B:

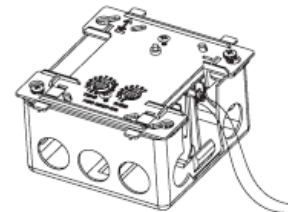


FIGURE 3. TYPICAL NOTIFICATION APPLIANCE CIRCUIT CONFIGURATION, NFPA STYLE Y:

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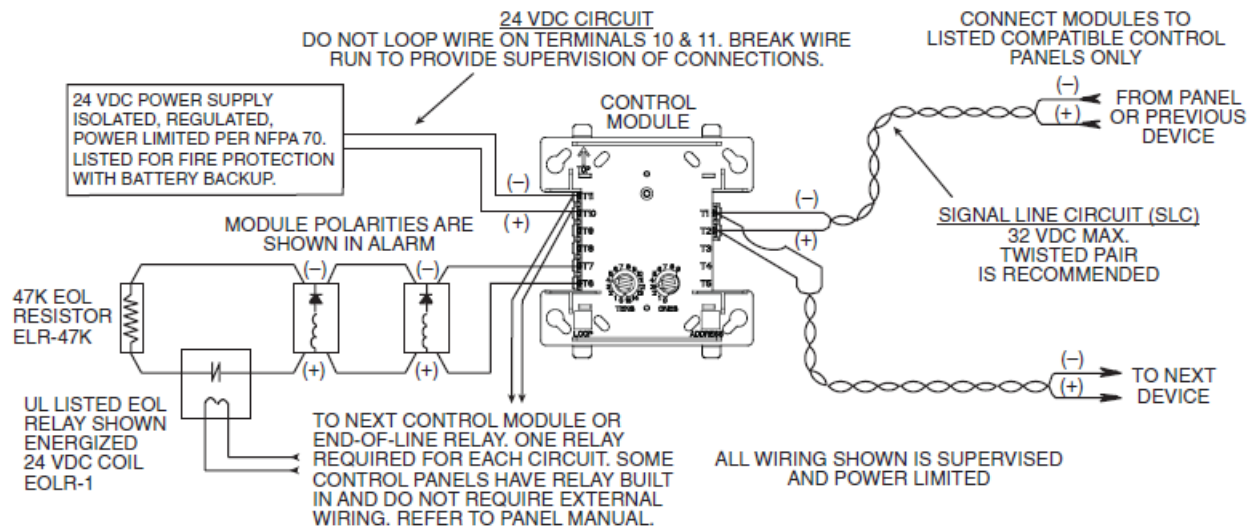


FIGURE 4. TYPICAL FAULT TOLERANT NOTIFICATION APPLIANCE CIRCUIT CONFIGURATION, NFPA STYLE Z:

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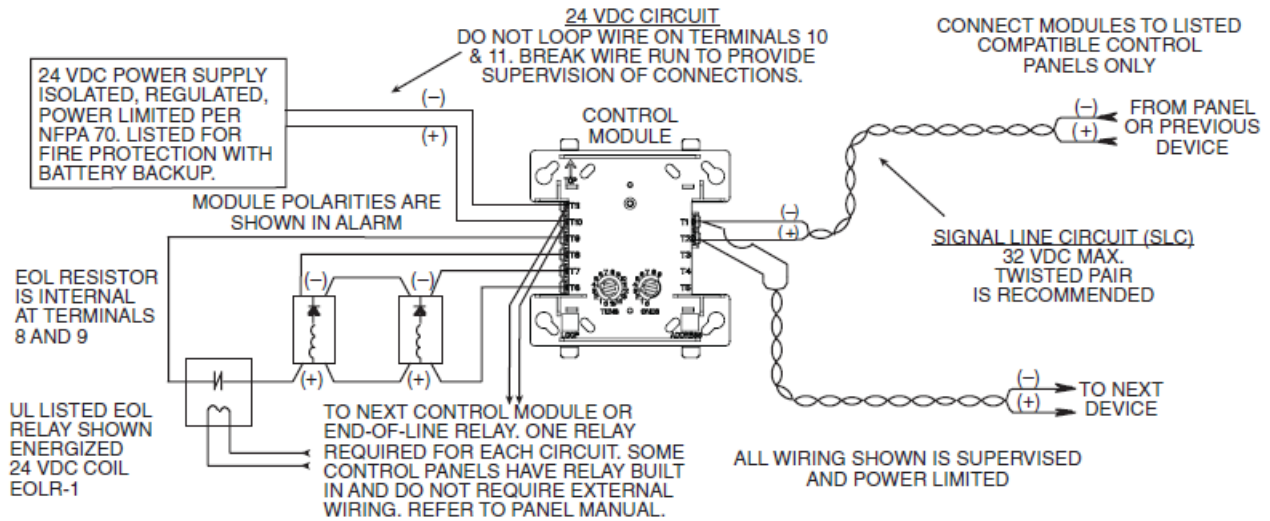


FIGURE 5. TYPICAL WIRING FOR SPEAKER SUPERVISION AND SWITCHING, NFPA STYLE Y:

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AUDIO CIRCUIT WIRING MUST BE TWISTED PAIR AS A MINIMUM.
SEE NOTIFIER INSTALLATION MANUAL FOR DETAILED INFORMATION.

WIRES MUST BE SUPERVISED PER NFPA

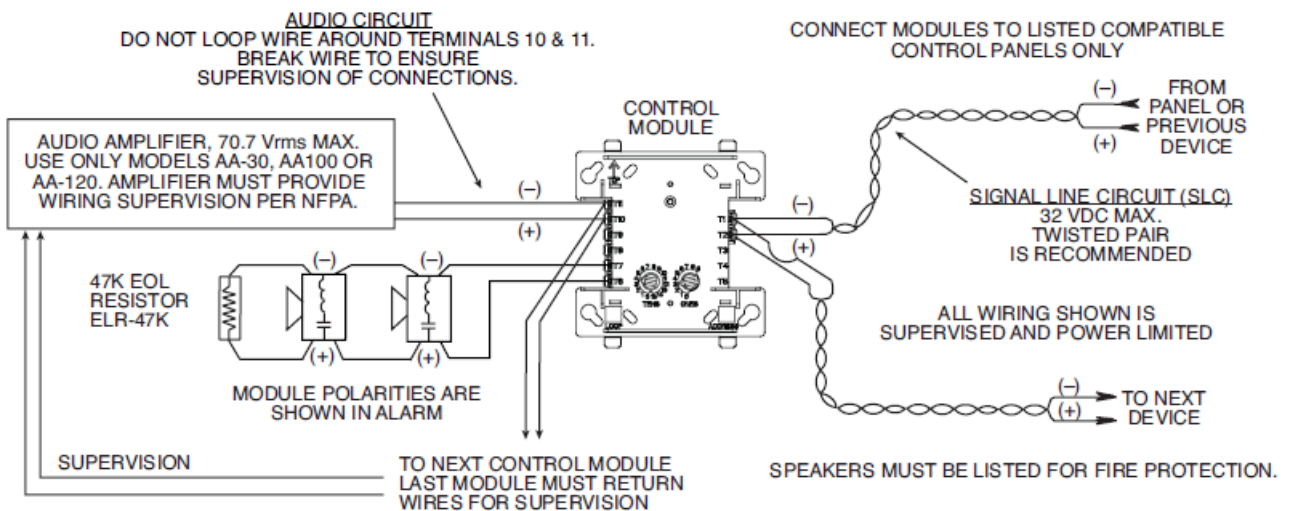


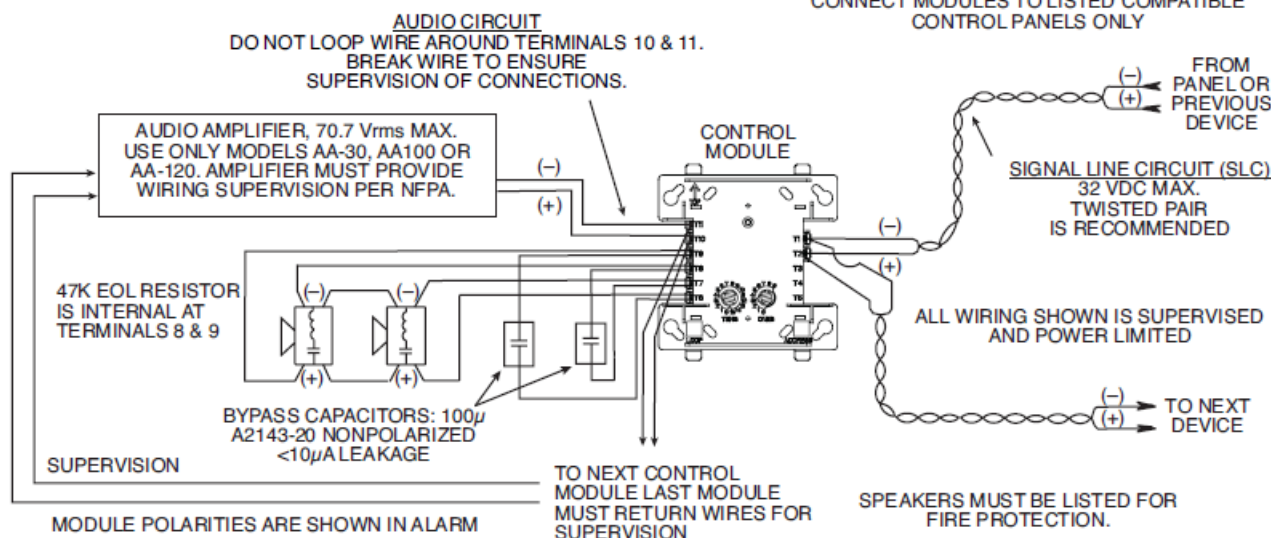
FIGURE 6. TYPICAL FAULT TOLERANT WIRING FOR SPEAKER SUPERVISION AND SWITCHING, NFPA STYLE Z:

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AUDIO CIRCUIT WIRING MUST BE TWISTED PAIR AS A MINIMUM.
SEE NOTIFIER INSTALLATION MANUAL FOR DETAILED INFORMATION.

WIRES MUST BE SUPERVISED PER NFPA

CONNECT MODULES TO LISTED COMPATIBLE
CONTROL PANELS ONLY



NOTE: ANY FAULT IN THE POWER SUPPLY IS LIMITED TO THAT ZONE AND DOES NOT RESULT IN A FAULT IN A SEPARATE ZONE.

WARNING

All relay switch contacts are shipped in the standby state (open) state, but may have transferred to the activated (closed) state during shipping. To ensure that the switch contacts are in their correct state, modules must be made to communicate with the panel before connecting circuits controlled by the module.

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Documents / Resources

	NOTIFIER FCM-1 Supervised Control Module [pdf] Installation Guide AA-30, AA100, AA-120, FCM-1, FCM-1 Supervised Control Module, Supervised Control Module, Control Module, Module
	NOTIFIER FCM-1 Supervised Control Module [pdf] Installation Guide FCM-1-REL, FCM-1, FCM-1 Supervised Control Module, Supervised Control Module, Control Module, Module