# M Fire Alarm Control Panel
# Quick Reference Sheet

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## Overview

This Quick Reference Sheet summarizes some of the programming and operational information covered in detail in the M-series Fire Alarm Control Panel (FACP) IOM manuals. Refer to the M-series FACP IOM manuals for detailed instructions.

Place this Quick Reference Sheet in the M-series FACP enclosure; it fits behind the battery. Do not remove it! The information on this sheet needs to be available as a reference:

| Main Menu |
|---|
| 1 CONFIGURATION MENU |
| 2 LIST ALARMS |
| 3 LIST TROUBLES |
| 4 POWER SUPPLY METERS |
| 5 WALKTEST |
| 6 TRANSMITTER ENABLE |
| 7 TRANSMITTER DISABLE |
| 8 CHANGE PASSCODE |
| 9 ONLINE / OFFLINE |
| 10 HISTORY |

| Configuration Menu |
|---|
| 1 LIST CONFIGURATION |
| 2 XCVR CONFIG |
| 3 AOC CONFIG |
| 4 ON-BOARD ZONES |
| 5 AUX INPUT ZONES |
| 6 EXPANSION ZONES |
| 7 AUDIBLE CIRCUITS |
| 8 RELAYS |
| 9 ZONE ENABLE / DISABLE |
| 10 DETACH ZONE |
| 11 RECEIVE CONFIG |
| 12 SEND CONFIG |
| 13 DEFAULT CONFIG |
| 14 AC MODE |
| 0 RETURN TO MAIN MENU |

### Using the Display and Keypad

- **To activate a blank LCD**, press any key

- **To make a selection**, use the keypad to key in the option number, and then press **[ENT]**

- **To clear incorrectly keyed-in data**, press **[CE]**

- **To scroll information on the screen**, press **[ENT]**

- **To go back to the previously displayed menu**, press **[0] [ENT]**

*Some menu options require a passcode entry*

### Configuration Information

- **To access the configuration menu**, press **[1] [ENT]**

- **To configure transceiver information**, press **[2] [ENT]** from the Configuration Menu

- **To set up on-board zones**, press **[4] [ENT]** from the Configuration Menu

- **To set up expansion zones**, press **[6] [ENT]** from the Configuration Menu

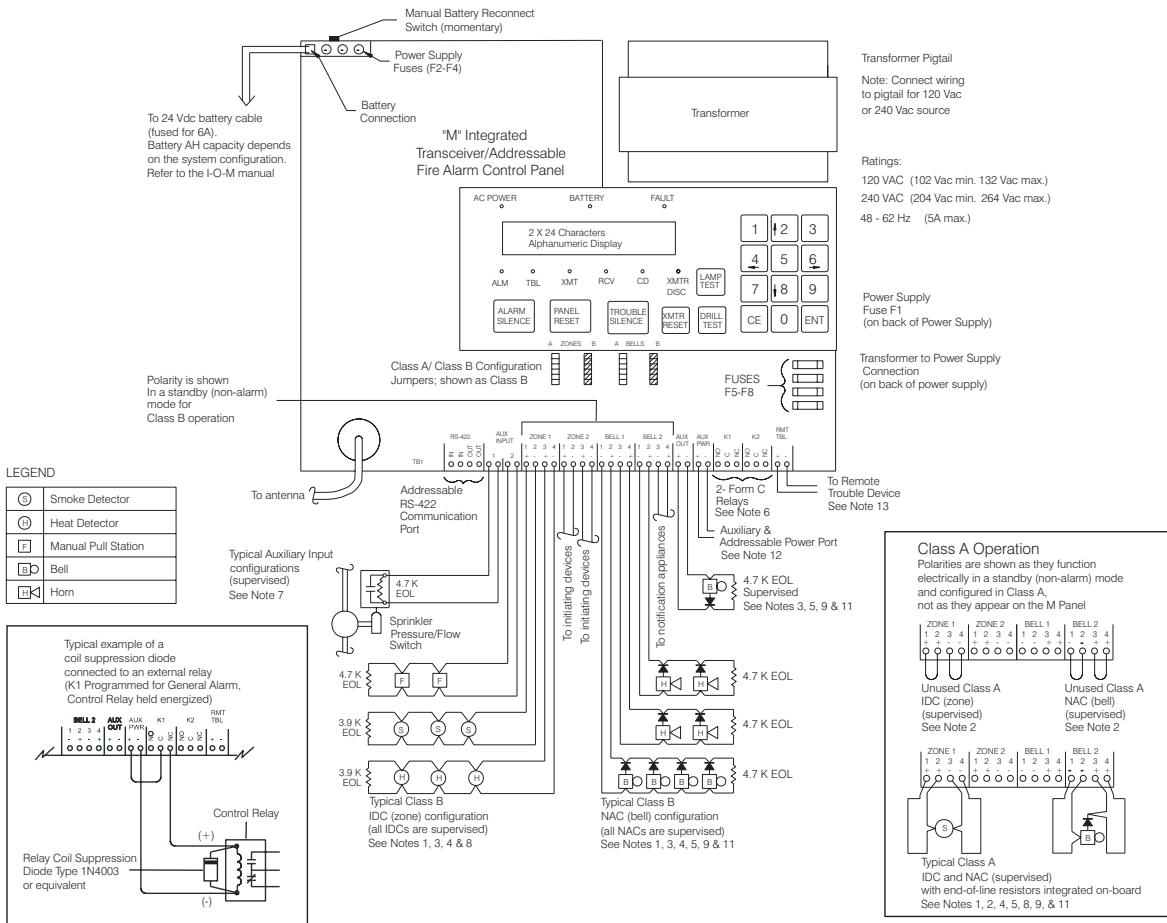- **To define NACs**, press **[7] [ENT]** from the Configuration Menu

*All information is saved automatically when you exit the Configuration Menu*

### Questions & Repair

*If you have questions or require assistance, contact a Customer Service Representative at Monaco Enterprises by calling (509) 926-6277 or emailing service@monaco.com*

# Typical Connections - M Panel Wiring



Manual Battery Reconnect Switch (momentary)

Power Supply Fuses (F2-F4)

Battery Connection

To 24 Vdc battery cable (fused for 6A). Battery AH capacity depends on the system configuration. Refer to the I-O-M manual

Transformer

Transformer Pigtail

Note: Connect wiring to pigtail for 120 Vac or 240 Vac source

"M" Integrated Transceiver/Addressable Fire Alarm Control Panel

Ratings:
120 VAC (102 Vac min. 132 Vac max.)
240 VAC (204 Vac min. 264 Vac max.)
48 - 62 Hz (5A max.)

AC POWER    BATTERY    FAULT

2 X 24 Characters Alphanumeric Display

ALM   TBL   XMT   RCV   CD   XMTR DISC   LAMP TEST

ALARM SILENCE   PANEL RESET   TROUBLE SILENCE   XMTR RESET   DRILL TEST

Power Supply Fuse F1 (on back of Power Supply)

Polarity is shown In a standby (non-alarm) mode for Class B operation

Class A/ Class B Configuration Jumpers; shown as Class B

FUSES F5-F8

Transformer to Power Supply Connection (on back of power supply)

LEGEND

| S | Smoke Detector |
| H | Heat Detector |
| F | Manual Pull Station |
| B | Bell |
| H | Horn |

To antenna

RS-422   AUX INPUT   ZONE 1   ZONE 2   BELL 1   BELL 2   AUX OUT   AUX PWR   K1   K2   RMT TBL

Addressable RS-422 Communication Port

2- Form C Relays See Note 6

To Remote Trouble Device See Note 13

Auxiliary & Addressable Power Port See Note 12

Typical Auxiliary Input configurations (supervised) See Note 7

4.7 K EOL

Sprinkler Pressure/Flow Switch

To initiating devices
To initiating devices
To notification appliances

4.7 K EOL Supervised See Notes 3, 5, 9 & 11

Class A Operation
Polarities are shown as they function electrically in a standby (non-alarm) mode and configured in Class A, not as they appear on the M Panel

ZONE 1   ZONE 2   BELL 1   BELL 2

Unused Class A IDC (zone) (supervised) See Note 2

Unused Class A NAC (bell) (supervised) See Note 2

4.7 K EOL

4.7 K EOL

4.7 K EOL

4.7 K EOL

Typical example of a coil suppression diode connected to an external relay (K1 Programmed for General Alarm, Control Relay held energized)

BELL 2   AUX OUT   AUX PWR   K1   K2   RMT TBL

Control Relay

Relay Coil Suppression Diode Type 1N4003 or equivalent

Typical Class B IDC (zone) configuration (all IDCs are supervised) See Notes 1, 3, 4 & 8

Typical Class B NAC (bell) configuration (all NACs are supervised) See Notes 1, 3, 4, 5, 9 & 11

ZONE 1   ZONE 2   BELL 1   BELL 2

Typical Class A IDC and NAC (supervised) with end-of-line resistors integrated on-board See Notes 1, 2, 4, 5, 8, 9, & 11

## Notes

**1** **On-board configuration provides four Class B IDCs and NACs** (each IDC or NAC has two terminals) **or two Class A IDCs and NACs** (each IDC or NAC has four terminals)

**2** **Class A on-board Initiating Device Circuit (IDC) (zone) termination:** the on-board resistor is automatically connected when Class A configuration jumpers are installed. If an IDC is not used, install wire jumpers across terminal pairs 1 & 2 and 3 & 4.

**Class A on-board Notification Appliance Circuit (NAC) (bell) termination:** the on-board resistor is automatically connected when Class A configuration jumpers are installed. If an NAC is not used, install wire jumpers across terminal pairs 1 & 2 and 3 & 4.

**Class A expansion backplane IDC (zone) termination:** install a 3.9 kohm, 0.25 watt, 5% resistor (P/N 471-392-00) across the center terminals in the circuit. If an IDC is not used, install wire jumpers across terminal pairs 1 & 2 and 3 & 4.

**3** **Class B IDC (zone) termination:** install a 3.9 kohm, 0.25 watt, 5% EOL resistor (P/N 471-392-00) in parallel with the last device on each loop. If an IDC is used, install the resistor across the terminal pair.

**Class B NAC (bell) termination:** install a 4.7 kohm, 0.25 watt, 5% EOL resistor (P/N 471-472-00) in parallel with the last device on each loop. If a NAC is not used, install the resistor across the terminal pair.

**4** **The position of the Class A/Class B configuration jumpers, the class setting programmed for the IDCs and NACs, and the class of wiring for the IDCs and NACs must all agree**

**5** Polarities shown are for normal, standby (non-alarm) condition

**6** Form C, 1.25A/24 Vdc resistive. These contacts may be wired for normally open (NO) or normally closed (NC) operation. Do not run the 120 Vac for auxiliary devices in the M Panel enclosure.

**7** **AUX INPUT:** These are Class B non-powered IDCs. Total loop resistance must not exceed 35 ohms per circuit.

**8** **M Panel on-board and expansion backplane IDCs (zones):** Each IDC supplies 24 Vdc filtered power for loop powered device operation / each IDC is current limited to 50 mA. Loop resistance must not exceed 35 ohms per leg.

# Expansion Backplane Wiring
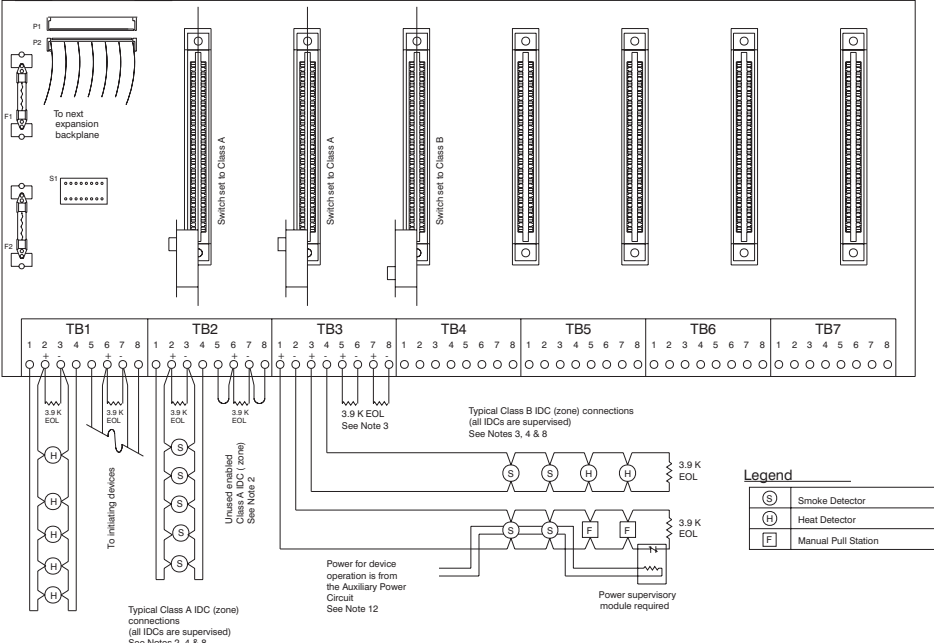


**9** **\*Bell 1, Bell 2:** These are polarity reversal NACs (bells). Each Class A NAC supplies up to 1.5 amps of 24 Vdc filtered power during an alarm condition. Each Class B NACs supplies up to 1.5 amps each. Total Bell 1 (B1 and B2) or Bell 2 (B3 and B4) current must be less than 2 amps. Loop resistance must not exceed 3 ohms per leg.

**10** **\*AUX OUT:** This is a Class B polarity reversal circuit. It supplies up to 1.5 amps of 24 Vdc filtered power during a specific alarm condition. Loop resistance must not exceed 3 ohms per leg.

**11** Refer to NEC and NFPA 70 for voltage drop and load center calculations.

**12** **\*AUX PWR:** This circuit supplies up to 2 amps of 24 Vdc filtered power to auxiliary powered detectors or auxiliary devices. To use relay K2 to reset (Panel Reset) these detectors, wire the AUX PWR + output through relay K2 terminals NC and C, then to the power leads of the detectors. Configure Relay #2 for Smoke Power. A power supervisory module must be installed at the end of each power loop to provide supervision.

**CAUTION** All external relays powered by the AUX PWR circuit must be equipped with a coil suppression diode. If the relay does not have a resident coil suppression diode, install Coil Suppression Diode 1N4003 (or equivalent) by connecting the non-banded end (anode) to the negative side of the coil and the banded end (cathode) to the positive side of the coil. Failure to install this may cause damage to the Panel when the relay is de-energized.

**13** **\*RMT TBL:** This circuit provides 150 mA of 24 Vdc filtered power to external remotely located trouble reporting devices (bells, horns, etc.). This output is non-supervised, non-polarity reversing, self current limiting. No EOL resistor is needed.

**\*IMPORTANT:** The maximum combined current of the NACs (Bell 1 and Bell 2 or Bell 3 and Bell 4), Auxiliary Output Circuit, Auxiliary Power Circuit, Remote Trouble Circuit, and IDCs provided by the backplane cannot exceed 4 amps

| Fuse Description | |
|---|---|
| Power Supply PCB Assembly | |
| F1 | 10A/250V Slow Blow, 5x20 mm, Transformer Input |
| F2 | 10A/125V Fast Blow, 5x20 mm, 28 Vdc Panel Supply |
| F3 | 2.5A/250V Slow Blow, 5x20 mm, Transmitter/Receiver Supply |
| F4 | 6.3A/250V Slow Blow, 5x20 mm, Battery Charging Supply |
| CPU PCB Assembly | |
| F5 | 2.5A/250V Slow Blow, NAC (bell) Circuit 1 |
| F6 | 2.5A/250V Slow Blow, NAC (bell) Circuit 2 |
| F7 | 2.5A/250V Slow Blow, Auxiliary Output and Remote Trouble Circuits |
| F8 | 2.5A/250V Slow Blow, Auxiliary Power Circuit |
| Expansion Backplane | |
| F1 | 2A/250V Fast Blow, 28 Vdc Supply from M Panel |
| F2 | 1A/250V Fast Blow, 5 Vdc Supply from M Panel |

# Alarm Indication and Reporting Summary

| Alarm Type | LEDs Lit | LCD Displays | Panel Audible Alert | Bell Circuits | AUX OUT | Relays | Message Sent to Central | Press Switch to Acknowledge |
|---|---|---|---|---|---|---|---|---|
| Waterflow | ALM | AL zone input (A-#, O-#, L#-#) description | off | 1 (1 &2) 2 (3 & 4) if assigned; silenceable or nonsilenceable | on; nonsilenceable | K1 if general alarm; K2 if assigned | ALARM, ZID # | ALARM SILENCE |
| Supervisory | ALM | AL zone input (A-#, O-#, L#-#) description | beeps on and off | off | off | K1 if general alarm; K2 if assigned | ALARM, ZID # | ALARM SILENCE or TROUBLE SILENCE |
| Standard | ALM | AL zone input (A-#, O-#, L#-#) description | off | 1 (1 &2) 2 (3 & 4) if assigned; silenceable or nonsilenceable | off | K1 if general alarm; K2 if assigned | ALARM, ZID # | ALARM SILENCE |
| Positive Alarm Sequence | ALM | PAS ALARM sequence, then, if alarm (A-#, O-#, L#-#) description | off | 1 (1 &2) 2 (3 & 4) if assigned; silenceable or nonsilenceable | immediate; initiates pre-alarm phase. Remains on for 15 seconds if ALARM SILENCE is not pressed. | If alarm: K1 if general alarm; K2 if assigned | ALARM, ZID # (if alarm) | ALARM SILENCE PANEL RESET |
| Detector Verification | ALM | AL zone input (A-#, O-#, L#-#) description | off | 1 (1 &2) 2 (3 & 4) if assigned; silenceable or nonsilenceable | off | K1 if general alarm; K2 if assigned | ALARM, ZID # | ALARM SILENCE |
| Tamper | TBL | TB zone input (A-# only) description | on steady if programmed to turn on | off | off | K1 if general trouble; K2 if assigned | TAMPER, M # | TROUBLE SILENCE |
| Master Box Operation | ALM | AL zone input (A-#, O-#, L#-#) description | off | off | on for 3 seconds | K1 if general alarm; K2 if assigned | ALARM, ZID # | ALARM SILENCE |
| No Bell | ALM | AL zone input (A-#, O-#, L#-#) description | off | off | off | K1 if general alarm; K2 if assigned | ALARM, ZID # | ALARM SILENCE |
| No Bell (Auto Reset) | ALM | AL zone input (A-#, O-#, L#-#) description | off | off | off | K2 if assigned | ALARM, ZID # | ALARM SILENCE |

*When the panel audible alert is activated, any remote trouble reporting device connected to the RMT TBL terminals is also activated. When the panel audible alert is silenced, the remote trouble reporting device is also silenced.

**NOTE:** If AOC outputs have been programmed as general alarm, they activate when an alarm occurs on any zone. AOC outputs programmed for general trouble activate for a Tamper-type alarm. AOC outputs assigned for specific zones activate for alarms or troubles as programmed for that zone. AOC alarm outputs for Waterflow, Positive Alarm Sequence, and Detector Verification type zones only activate when the alarm is processed by the M panel.

## Switches

- **ALARM SILENCE** Press to acknowledge an alarm condition and silence the NACs
- **TROUBLE SILENCE** Press to acknowledge a trouble condition and silence the Panel Audible and Remote Trouble
- **PANEL RESET** Press to clear an alarm condition
- **LAMP TEST** Press to test audible alert and LED operation
- **DRILL TEST** Press to test evacuation signaling device operation when no alarm conditions exist
- **XMTR RESET** Press to return the transceiver to operation after a fault condition shutdown

## LEDs

- **AC POWER** Operation on ac power
- **BATTERY** Operation on backup battery power
- **FAULT** Microprocessor problem
- **ALM/TBL** Alarm or trouble condition
- **XMT/RCV/CD** Transmissions sent, received, or detected
- **XMTR DISC** M Panel transceiver shut down due to a fault