

2. KEYPAD FUNCTIONS & OPERATION

OVERVIEW

This section provides simplified instructions for local operation of MFA6000-Series Fire Alarm Control Panels having no special-feature programming. Read this section first to gain familiarity with the operation of the keypad and panel. Comprehensive instructions are provided in the section that follows.

Main Keypad. The main keypad is inside the control-panel enclosure, which is normally kept locked, thus eliminating the need for an access code. The keypad contains five LEDs (light-emitting diodes), a numeric display, and 10 pushbuttons. The LEDs indicate *ALARM*, *ZONE TROUBLE*, *SYSTEM TROUBLE*, *ZONE DISABLED*, and *AC ON*. The numeric display will indicate the number(s) of the zone(s) in alarm, zone(s) in trouble, or zone(s) that have been disabled. Coded system troubles are also shown on the numeric display.

For information on enabling and disabling zones, recall keys, and system tests, refer to **OPERATION**.

Initiating Zones. The MFA6000 comprises four Class-B detection zones. These are end-of-line-resistor supervised and will support devices such as smoke detectors, heat detectors and pull stations.

Alarm Detection. When an alarm is initiated on any of Zones 1 through 4, the signal circuits will activate, the auxiliary alarm relay will activate, the keypad ALARM LED will flash, and the keypad numeric display will indicate the zone(s) in alarm.

Silencing an Alarm. If the [SILENCE] button on the keypad is pressed, the signal circuits will deactivate, the keypad numeric display will go out, and the keypad ALARM LED will glow steadily.

Resetting an Alarm. The panel may be reset after the initiating device (smoke detector, pull station, etc.) has been restored, by pressing the keypad [RESET] button. This will, after a brief delay, turn off the signals (if not previously silenced), and the keypad ALARM LED. The ALARM LED will remain on until the panel is reset, but the panel will not reset unless all tripped zones are restored. Press the [ALARM] button to display the zones in alarm.

Zone Trouble. If the detection loop of any of Zones 1 through 4 opens, the mini-sounder will beep continuously, the ZONE TROUBLE LED will blink, the numeric display will indicate the zone in trouble.

Silencing a Zone Trouble. If the [SILENCE] button is pressed, the mini-sounder will shut off, the ZONE TROUBLE LED will glow steadily (if the zone is still in trouble), the numeric display will go out, and the trouble relay will deactivate.

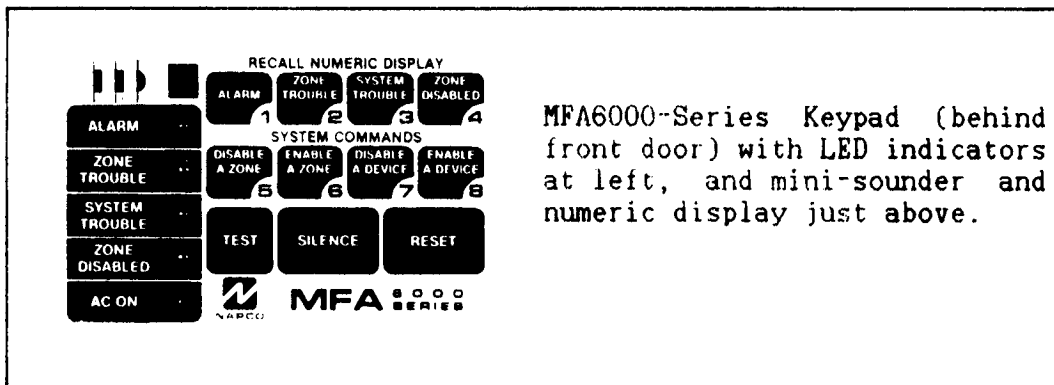
Trouble Resound. If the keypad [SILENCE] button had been pressed and the zone or system trouble corrected (or zone enabled), the sounder will sound and the respective LED will blink repeatedly. This indicates that the zone has been repaired (or enabled). To silence this indication, press the keypad [SILENCE] button.

RP6000 Remote Annunciator. Except for the AC ON LED, the RP6000 Remote Annunciator contains the same indicators as the main-panel keypad. The [TROUBLE SILENCE] button will silence only the mini-sounder inside the remote annunciator; it will not affect any other indications, either at the RP6000 or at the control panel.

External Reset Switch. Lugs E23 and E24 (see Wiring Diagram) provide for the addition of an optional external Reset keyswitch to permit resetting the panel without opening the enclosure. Use a UL-listed normally-open momentary-contact keyswitch rated at 0.25A/12V, minimum. Connection may be made using two Napco WL1 Wire Assemblies (see **ORDERING INFORMATION**).

External Silence Switch. This optional keyswitch is mounted at the side of the panel enclosure, and has the same function as the [SILENCE] button on the keypad inside. It provides a means of silencing an alarm or trouble without opening the cabinet door.

KEYPAD FUNCTIONS



TEST - (with numeric key) allows the user or installer to access any one of four test modes. Refer to **TESTING THE SYSTEM**.

SILENCE - silences the mini-sounder or alarm device during an alarm or trouble condition and clears the numeric display.

RESET - resets a zone after the alarm device has been restored. Momentarily removes power from a zone (and also 4-wire smoke-detector power) in order to reset devices that require removal of power for resetting.

DISABLE A ZONE - (with numeric key) disables any zone 1 through 4.

ENABLE A ZONE - (with numeric key) enables a zone that had been previously disabled.

DISABLE A DEVICE - (with numeric key) disables any output device.

ENABLE A DEVICE - (with numeric key) enables an output device that had been previously disabled.

ALARM - displays the current alarm condition on the numeric display. After all alarms have been reset, pressing this button will cause the last zone that was in alarm to be shown on the numeric display.

ZONE TROUBLE - indicates (on the numeric display) any zone that is in trouble.

SYSTEM TROUBLE - displays system troubles or sprinkler-supervisory activation, as follows

- "1" - Ac Failure
- "2" - Sprinkler Supervisory Activation
- "3" - (without LED*) Signal-Circuit Trouble
- "3" - (with LED*) Sprinkler Supervisory Trouble
- "4" - Ground Fault
- "5" - Telephone-Line Trouble (when DD6000 is installed)
- "6" - Disabled Device
- "7" - Battery Trouble
- "8" - Program Failure

* LED located at upper-left corner of circuit board.

ZONE DISABLED - displays each zone that has been disabled.

OPERATION

Standby Mode. Under normal conditions, that is, when no trouble or alarm condition exists, the panel is in Standby. In this mode, only the green AC ON LED will be lit. If the AC ON LED is not lit, ac power is low or lost. Check for a power-line problem.

Alarm. Should an alarm occur, the alarm device (bell, horn, etc.) will sound and the red ALARM LED will flash. The zone in alarm will appear on the numeric display.

To silence the alarm device, press the [SILENCE] button. The device will shut off and the numeric display will go blank, but the red ALARM LED will remain on steady as a reminder that an alarm condition still exists. To recall the zone number on the numeric display, press the [ALARM] button.

If a waterflow zone is in alarm, the alarm device cannot be shut off unless the alarm condition is removed. To reset an alarm on a waterflow zone, press [RESET] after the alarm condition is cleared. After a brief delay, the ALARM LED and the display will

go out.

To reset a fire alarm zone after having silenced the alarm device, restore the initiating device (reset the pull station, clear smoke from the smoke detector, etc.), then press [RESET]. After a brief delay, the ALARM LED will go out.

Zone Trouble. A trouble condition on any zone will cause the yellow ZONE TROUBLE LED to flash and the mini-sounder to pulse; the zone in trouble will appear on the display. To silence the sounder, press the [SILENCE] button; the sounder will shut off and the display will go blank, but the yellow ZONE TROUBLE LED will remain on steady as a reminder that a trouble condition still exists. To recall the zone number on the display, press the [ZONE TROUBLE] button. **NOTE:** If a zone trouble condition has corrected itself, the sounder will have shut off however the display will continue to flash the zone number. Press the [SILENCE] button to clear the display.

To reset a zone trouble, correct the trouble condition. If the zone trouble had been previously silenced, correcting the condition will cause a trouble resound at the keypad. That is, the ZONE TROUBLE LED will flash and the mini-sounder will come on continuously. To silence the resound indication, press [SILENCE]. The mini-sounder will shut off and the LED will go out. (If Inhibit Zone Trouble Resound has been programmed, there will be no resound indication. The ZONE TROUBLE LED will go out when all trouble conditions are corrected.)

System Trouble. Any system trouble condition will cause the yellow SYSTEM TROUBLE LED to flash and the mini-sounder to pulse; the system trouble code will appear on the numeric display. To silence the sounder, press the [SILENCE] button. The sounder will shut off and the display will go blank, but the yellow SYSTEM TROUBLE LED will remain on as a reminder that a trouble condition still exists. To recall the system trouble number on the display, press the [SYSTEM TROUBLE] button. **NOTE:** If a system trouble condition has corrected itself, the sounder will have shut off however the display will continue to flash the system trouble code. Press the [SILENCE] button to clear the display.

NOTE: An "8" on the numeric display and a pulsing sounder indicate failure of the PROM. Failure of the microprocessor IC will cause a steady sounder indication. Remove power and check that the PROM is inserted correctly. If the trouble is not corrected when power is reapplied, service arrangements should be made.

To reset a system trouble, correct the trouble condition. If the system trouble had been previously silenced, correcting the condition will cause a trouble resound at the keypad. That is, the SYSTEM TROUBLE LED will flash and the mini-sounder will come on continuously. To silence the resound indication, press [SILENCE]. The mini-sounder will shut off and the LED will go out. (If Inhibit System Trouble Resound has been programmed, there will be no resound indication. The SYSTEM TROUBLE LED will go out when

all trouble conditions are corrected.)

Disabling/Enabling a Zone. To disable any zone, press the button labelled [DISABLE A ZONE], followed by the zone number. The yellow ZONE DISABLED LED will flash, the mini-sounder will beep intermittently, and the disabled zone will appear on the numeric display. To silence the sounder, press the [SILENCE] button. The sounder will shut off and the numeric display will go blank, but the LED will remain on as a reminder that a zone is still disabled. When a zone is disabled, the trouble relay will always activate, even if Inhibit Trouble Relay has been programmed for a zone trouble. To recall the zone number on the numeric display, press the [ZONE DISABLED] button.

To enable the zone, press the [ENABLE A ZONE] button, followed by the zone number. This will cause a trouble resound; the ZONE DISABLE LED will flash and the mini-sounder will sound continuously. To silence the resound indication, press [SILENCE]. The mini-sounder will shut off and the LED will go out. (If Inhibit Zone-Enable Resound has been programmed, there will be no resound indication. The ZONE ENABLE LED will go out when all the zones are enabled.)

Disabling/Enabling a Device. To disable any device, press the [DISABLE A DEVICE] button, followed by the device number: [1] Signal Circuits; [2] Auxiliary Alarm Relay; [3] Trouble Relay; [4] Digital Communicator.

The yellow SYSTEM TROUBLE LED will flash, the mini-sounder will beep intermittently, and a "6" (Device(s) Disabled) will appear on the numeric display. Disabling additional devices will not be indicated. To silence the sounder, press the [SILENCE] button. The sounder will shut off and the numeric display will go blank, but the LED will remain on as a reminder that a device is still disabled. To recall the trouble number on the numeric display, press the [SYSTEM TROUBLE] button.

To enable the device, press the [ENABLE A DEVICE] button, then the device number. When all devices have been enabled, a trouble resound will occur at the keypad; the SYSTEM TROUBLE LED will flash and the mini-sounder will come on continuously. To silence the resound indication, press [SILENCE]. The mini-sounder will shut off and the LED will go out. (If Inhibit System Trouble Resound has been programmed, there will be no resound indication. The SYSTEM TROUBLE LED will go out when all the trouble conditions are corrected.)

TESTING THE SYSTEM

There are four tests that may be made to check system operation.

Test #1 - One-Man Test. This will check individual initiating devices and associated wiring. To invoke Test #1,

1. Disable the zone to be tested by pressing the [DISABLE A ZONE]

button followed by the zone number. Repeat this procedure for each zone to be tested.

2. Press [TEST], then press [1].
3. Put the selected zone into alarm (pull the pull station, blow smoke into the smoke detector, etc.). The signal-circuit alarm device will pulse twice. After about 30 seconds, if the zone is still in alarm, smoke-detector power will automatically be removed for 4 seconds in an attempt to reset the alarm condition.
4. If, after the smoke power-up time (2 seconds plus any programmed additional time), the alarm condition is reset, the signal-circuit alarm device will pulse once.
5. Put the zone into trouble (open the circuit). The mini-sounder and trouble relay will pulse twice.
6. Repair the trouble condition. The trouble relay and mini-sounder will pulse once, indicating that the zone is repaired.
7. To exit Test #1, enable the zones that have been disabled, one zone at a time.

NOTE 1: In the Test #1 mode, those zones that have not been disabled will remain active. Should a real alarm condition occur, the test mode will be cancelled and the system will revert to normal operation, except that the disabled zone will still be in the disabled state until manually enabled.

NOTE 2: While Test #1 will check individual initiating devices, it does not provide a true overall system response to an alarm or trouble condition. For this reason, it will necessary to verify system operation (i.e., DD6000 or M6000 trips; bell activations and time-outs, etc.) by initiating the zone while it is enabled.

Test #2 - Communicator Test. This will test communicator operation by transmitting the Test-Timer Identification Number. Call the central station to notify them of the test.

To invoke Test #2, press [TEST], then press [2] to initiate the transmission. Call the central station to verify reception. (If Status Report has been programmed, a status report will be sent if there are any zones in alarm or trouble.)

The system will automatically revert to normal operation upon completion.

Test #3 - System Test. This will test the control-panel indicators. To invoke Test #3, press [TEST], then press [3]. All LEDs will flash as the mini-sounder pulses, and digits "1" through "8" will appear sequentially on the numeric display for about 4 minutes, or until [SILENCE] is pressed.

While the LEDs and numeric display will go out after about 4 minutes, the mini-sounder will continue to sound; press [SILENCE] to shut off the sounder and exit Test #3.

Test #4 - Fire-Drill Test. This will activate the signal circuits. To invoke Test #4, press [TEST], then press [4]. The alarm will sound until reset by pressing [SILENCE], which will restore normal operation. If a DD6000 Digital Communicator or an M6000 Polarity-Reversal Module is installed, neither will be activated.

CHANGES FROM THE PREVIOUS EDITION

The following changes were made to this edition:

Page 4: SPECIFICATIONS, Initiating Loops: System Sensor Model 2300T added.

Page 7: ~~Smoke Detectors, Two-Wire Type:~~ System Sensor Model 2300T added.

MFA6012 SPECIFICATIONS

Operating Temperature: 0-49 degrees C (32-120 degrees F)
 Input Power: 120Vac/60Hz; 135W maximum
 Battery Power: See Table 1 (below)
 Initiating Loops: 8.5-12.8Vdc; Standby, 11.2mA max. including EOL, 1.2mA available; Alarm, limited to 34mA; EOL, 1.2k, 1/2W
 Wiring Resistance: 20 ohms max.
 Alarm Threshold Imp.: 600 ohms max.
 Two-Wire Smokes/Zone: 10 max.
 Supervisory Loop: 12Vdc (open circuit), 7.0mA max.
 Alarm Signal Circuits: 2 supervised full-wave-rectified outputs; 12Vfw, 2A max. 10k EOL resistor (see Combined Alarm Currents).
 Signal-Circuit Resistance: (see **INSTALLATION**)
 Auxiliary Alarm Relay: SPDT isolated contacts; 24Vdc/3A resistive
 Trouble Relay: SPDT isolated contacts; 24Vdc/3A resistive
 FWR Power Output: Continuous 12Vfw full-wave rectified; 3mA min. to 500mA max. (See Combined Alarm and Standby Currents).
 4-Wire Smoke-Detector Power: 8.5-12.8Vdc regulated, 250mA max. (see Combined Standby Current)
 Remote Power: 12Vdc, 100mA max. (2 RP6000s) (Subtract from Combined Standby Current, below)
 Combined Current, Standby: 250mA max. (4-Wire Smoke Power, Remote Power, FWR Output in Standby; includes 1 DD6000 or M6000)
 Alarm: 2.5A max. (signal circuits; FWR output)
 Low-Battery Signal: 11.0Vdc
 Remote Annunciator, Maximum Number: 2
 Current (each): 30mA, excluding sounder; 50mA with remote sounder
 Fuses
 Battery: 5A, 1AG (F1)
 Smoke-Detector Power: 1/2A, 1AG (F2)
 Signal Circuit 1: 3A/1AG (F4)
 Signal Circuit 2: 3A/1AG (F5)
 Dimensions: 17.8"H x 14.4"W x 5.5"D
 Shipping Weight: 20 lb (approx.)

24 HOURS STANDBY TIME	
COMBINED STANDBY CURRENT	BATTERY CAPACITY
250mA max	12AH min
100	8
30	6

60 HOURS STANDBY TIME	
COMBINED STANDBY CURRENT	BATTERY CAPACITY
250mA max	30AH min
155	24
75	18
50	16
0	12

NOTE: 24 hours standby is required for Local or Central Station; 60 hours standby is required for Remote Station or Auxiliary Protected Premises. See Appendix I. Standby Battery Calculation.

Table 2. Battery capacity (ampere-hours) for various combined standby-current loads, MFA6012.