

The MDC-FSM is a dual function module designed for use with the MDC-16 Series and MDC-8 Series Control/Communicators. In systems where required, the MDC-FSM provides supervision of two telephone lines and polarized fire bells.

INSTALLATION PROCEDURE

The MDC-FSM is provided with double stick tape for easy mounting in the MDC-16 and the MDC-8 Control cabinet. Peel off the protective covering and mount the module inside the cabinet adjacent to the printed circuit board.

- NOTE 1:** The Black wire connected to Terminal 46 on the MDC-16 will trip Zone 15 when the bell faults. The Black wire connected to Terminal 22 on the MDC-8 will trip Zone 7 when the bell faults. See Note 4.
- NOTE 2:** The White wire connected to Terminal 48 on the MDC-16 will trip Zone 16 upon loss of Telco Line #1 or Telco Line #2. The White wire connected to Terminals 24 on the MDC-8 will trip Zone 8 upon loss of Telco Line #1 or Telco Line #2. See Note 4.
- NOTE 3:** Zones must be programmed as Zone Type 5 (24 Hour), Loop Type 1 (N.O.) with the 470 ohm resistor connected across loop terminals.
- NOTE 4:** Polarized bells, not exceeding a total of 1 amp current draw, must be used when powering the circuit from the MDC-16 and/or MDC-8.
- NOTE 5:** A 2.2K ohm terminating resistor must be installed across the last bell in the circuit.
- NOTE 6:** When using the MDC-FSM with the MDC-8, the phone line connected to the second telephone line input of the FSM (terminals 3 & 4) must be a dedicated line to the control system to comply with UL standards for all certified installations.

Figure 1 shows the connections to TB-1 on the MDC-FSM. The incoming telephone lines (#1 and #2) as well as the polarized bells are connected to TB-1.

SYSTEM OPERATION

Telephone Line Supervision

Upon drop of both voltage (to 3 VDC) and current (to 20 ma), from an incoming telephone line for approximately 1 minute, the MDC-FSM will initiate a signal which will provide a visual indication of telephone line trouble (exact wording programmed by installer) at the MPC-32D and MPC-8D Personal Controls. At the same time, if programmed, a code will be transmitted to the central station via the other telephone line.

For 12 volt operation, remove the shorting link on W-1 on the FSM. For 24 volt operation, make sure the shorting link is covering both posts on W-1 of the FSM.

Terminals 7 and 8 can be connected to an external power source 12 VDC or 24 VDC, 5 amp maximum. Or these terminals can be connected to the control panel as follows:

<u>FSM TERMINAL</u>	<u>MDC-16</u>	<u>MDC-8</u>
7 - Bell Power Input (POS)	54	3
8 - Bell Power Input (NEG)	51	25

If voltage is not sensed on terminals 7 and 8, the FSM will trigger a bell alarm condition to the zone that is being used. The minimum voltages that will keep the FSM secured are: 10.2 VDC @ 12 VDC and 20.5 VDC @ 24 VDC. Maximum operating voltage is 32 VDC.

LED ERROR CODES:

NOTE: The LED will blink one of these codes

- 1 = ON
- 2 = Line 1 Bad
- 3 = Line 2 Bad
- 4 = Bell/Power Supply Bad

Internally, the action of the MDC-FSM is as follows:

Loss of the primary telephone line will cause the secondary telephone line to switch to the primary telephone line terminals of the MDC-16 and MDC-8. The communicator will continue to function as if the primary line was still active.

Bell Fault Supervision:

Upon detection of a ground fault, open or short on the bell circuit, the MDC-FSM will initiate a signal to cause a visual indication of bell trouble (wording programmed by installer) at the MDC-32D and MPC-8D. If programmed, a code will be transmitted to the central station.

RIBBON CONNECTOR

CHART A P1

<u>FSM</u>	<u>DESCRIPTION</u>	<u>MDC-16</u>	<u>MDC-8</u>
BLACK	BELL TROUBLE OUTPUT	46*	22*
WHITE	TELCO TROUBLE OUTPUT	48*	24*
GRAY	AUXILIARY POWER (NEG)	5	4
VIOLET	AUXILIARY POWER (POS)	6	3
BLUE	BELL TRIGGER (POS)	52	26
GREEN	BELL TRIGGER (NEG)	51	25
YELLOW	TELCO 2 (RING)	67	N.C.**
ORANGE	TELCO 2 (TIP)	68	N.C.**
RED	TELCO 1 (RING)	71	35
BROWN	TELCO 1 (TIP)	72	36

* These zones are only used as an example.
 ** No connection available.

IF PHONE LINE
 LOST -
 APPLY 12VDC TILL
 LINE IS RESTORED

CHART B

FSM - TB1

- TERM 1 - Incoming telco line one (TIP)
- TERM 2 - Incoming telco line one (RING)
- TERM 3 - Incoming telco line two (TIP)
- TERM 4 - Incoming telco line two (RING)
- TERM 5 - Bell Voltage output (NEG)
- TERM 6 - Bell Voltage output (POS)
- TERM 7 - Bell Power input (POS)
- TERM 8 - Bell Power input (NEG)