

MOOSE MPI-800V

Telephone Voice Interface

Specifications, Installation
and Programming Guide

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System Overview

1

The MPI-800V is designed to provide voice interface prompts and messages via a Touch Tone® telephone. The user may access the MPI-800V both locally and remotely by using a Touch Tone® telephone. The unit may also be programmed using a Touch Tone® telephone.

The MPI-800V is compatible with *any* control panel that supplies 12V logic outputs for ARMED, READY, and VIOLATION conditions. It is designed to operate in the following three modes:

- Universal Mode - key switch
- Integrated Mode - control station data bus (includes D1000, Z880, and Z950)
- Stand Alone Mode

In **Universal Mode**, the MPI-800V is limited to reporting ARMED, READY, and VIOLATION conditions only. The user code arms and disarms the control panel by triggering a key switch.

In **Integrated Mode**, the MPI-800V communicates with the Z950 family of control panels via the control station data bus by mimicking a standard control station.

In **Stand Alone Mode**, the MPI-800V is a controller that activates the relay and the ten programmable outputs.

The MPI-800V includes ten outputs that can be programmed for a variety of output types. (See Table 6-2.) These outputs serve Universal, Integrated, and Stand Alone Modes. The programmable output connections are made via a 12-pin connector (J1).

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Interface Requirements

2

The MPI-800V has the capability, through jumper settings, to operate in either positive or negative logic mode. See Section 3.3 for more detail.

Universal Mode

The MPI-800V was designed to be a universal telephone voice interface, working with *any* control panel that meets the following requirements:

- The control panel must have the capability of arming and disarming with a key switch. The key switch may be either latching or momentary.
- The control panel must be able to supply a 12V output to produce ARMED, VIOLATION, and READY (optional) indications. The outputs can be +12 or negative. All outputs must be of the same type (either active high or active low), and they must be steady (no pulsing outputs).

Integrated Mode

If you use the MPI-800V with a control panel in the Z950 family, the arming/disarming and status information are transmitted over the control station data bus.

Stand Alone Mode

For Stand Alone Mode, in addition to the correct telephone connections, the MPI-800V requires a 12 Volt power source that provides 12 Volts 600 mA.

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3.1 Planning the Installation

1. Read through this entire manual to familiarize yourself with all the features of the MPI-800V before beginning the installation.
2. Discuss the installation requirements and applications with the customer.
3. Compare the installation requirements and applications with the factory default settings (See Table 6-1.) to determine what customized programming will be needed to meet the specific installation requirements.
4. Bench test the unit prior to installation.
5. **After you have completed the installation, go to the *MPI-800V User Manual*.**
 - Record the relay/output definitions and settings and other user customization in Appendix A.
 - Tear out the two sections (modes) that do *not* apply to your customer.

3.2 Mounting the MPI-800V

Mount the MPI-800V in one of the following ways:

- Inside the control panel's enclosure, if room permits
- Beside the control panel without an enclosure
- In a separate enclosure (E1414)

3.3 Setting the Jumpers

Universal Mode

Universal Mode operates in either positive logic or negative logic mode. If the control panel's outputs are active high (+12V when on), set JP1 to positive (+) logic mode, and program Function 15 with 1. If the outputs are active low (pull to negative when on), set JP1 to negative (-) logic mode and program Function 15 with 2.

Integrated Mode

When using the MPI-800V with a control panel in the Z950 family, set jumper JP1 to negative (-) to properly configure the input circuitry. Program Function 15 with 0 to properly configure the software. See Chapter 6.0 for instructions on programming. See Figure 4.1 for wiring diagram.

Note: Integrated Mode will only work with the Z950 family, the Honeywell 880, the Discovery 1080, and the Discovery 1086.

Stand Alone Mode

In Stand Alone Mode, the jumper configuration is not required. The MPI-800V becomes a controller for the relay and the ten programmable outputs.

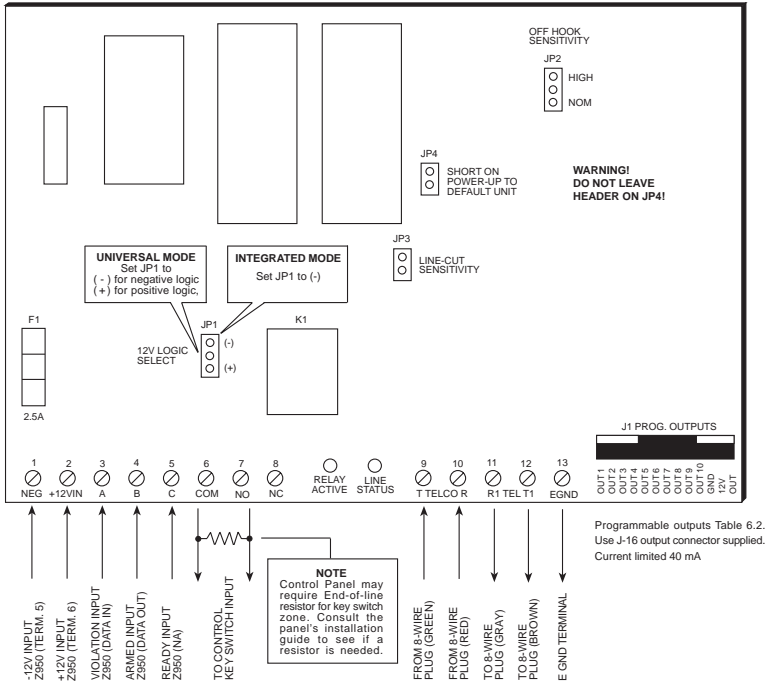


Figure 4-1 Wiring Diagram for Universal, Integrated, and Stand Alone Modes

Table 4-1 Terminal Connections

| Stand Alone Mode Power Supply | Universal Mode System Status Inputs | Integrated Mode Control Station Bus Connections | |
|--------------------------------------|---|--|---|
| | | MPI-800V | Control Panel |
| Terminal 1 (NEG) Terminal 2 (+12) | Terminal 1 (NEG) Terminal 2 (+12) Terminal 3 (A) Violation/Alarm Input Terminal 4 (B) Armed Input Terminal 5 (C) Ready Input | Terminal 1 (NEG) Terminal 2 (+12) Terminal 3 (A) Terminal 4 (B) | to Terminal 5 (NEG) to Terminal 6 (+12) to Terminal 7 (Data In) to Terminal 8 (Data Out) |

Table 4-2 MPI-800V Terminal Descriptions

| Terminal | Function | Description |
|-----------------|--|---|
| 1 NEG | -12V Input | Negative (-) power connection from control panel |
| 2 +12V IN | +12V Input | 12V (+) power connection from control panel |
| 3 A | Integrated Mode: Data A (green wire) Universal Mode: Violation | Connects to KEYPAD DATA IN on Z950 panel Connects to panel's Violation or Alarm output |
| 4 B | Integrated Mode: Data B (white wire) Universal Mode: Armed | Connects to KEYPAD DATA OUT on Z950 panel Connects to panel's Armed output |
| 5 C | Integrated Mode: not used Universal Mode: Ready | Not used in Integrated Mode Connects to panel's Ready or Status output |
| 6 COM | K1 Common | User relay COMMON contact |
| 7 NO | K1 Normally Open | User relay NORMALLY OPEN contact |
| 8 NC | K1 Normally Closed | User relay NORMALLY CLOSED contact |
| 9 T | Telco "Tip" | Incoming telephone line (green wire) |
| 10 R | Telco "Ring" | Incoming telephone line (red wire) |
| 11 R1 | House telephone "Ring" | Connection for house telephones |
| 12 T1 | House telephone "Tip" | Connection for house telephones |
| 13 E GND | Earth Ground | Connection for earth ground |
| J1 | Programmable Outputs | Default Program Out Defines: |
| OUT 1 | Note: Programmable outputs are rated at 40mA each. If used for anything other than LED indicators or zone triggers, use a MPI-206 relay module | Panic |
| OUT 2 | | System Active |
| OUT 3 | | Ring Detect |
| OUT 4 | | Off-Hook |
| OUT 5 | | DTMF (Touch Tone®) Valid |
| OUT 6 | | Latching Tamper |
| OUT 7 | | Latching General Purpose |
| OUT 8 | | Latching General Purpose |
| OUT 9 | | Latching General Purpose |
| OUT 10 | | Latching General Purpose |
| NEG | | Aux. -12V Out connection |
| 12V OUT | Overload protected at 2.5A (F1). | Aux. +12V Out connection |

Note: Terminal 13 (E. GND) must be connected to a unified earth ground for the lightning and transient protection to be effective.

4.1 Wiring the MPI-800V

Universal Mode

Connect terminal 6 (COM) and terminal 7 (NO) to the key switch zone on the control panel. If an end-of-line resistor is required, connect it across terminals 6 and 7. If the control panel has a dedicated key switch input, connect terminal 7 to the input. Then connect terminal 6 to negative or +12V, depending on the polarity required to trigger the key switch. Program Function 28 with a 13 (latching key switch) or a 14 (momentary key switch-default).

If you use one of the programmable outputs for the key switch, program the appropriate Function (29 - 38) with a 14.

To enable the key switch toggle code, program Function 11 of the MPI-800V with a unique four-digit user code. Then set Function 12 to the desired authorization level. See Table 4-1 (Universal Mode).

Integrated Mode

Connect terminals 1,2,3,4 to terminals 5,6,7,8 of the control panel. See Table 4.1 (Integrated Mode).

Stand Alone Mode

Connect a 12V power source to terminals 1 and 2. To enable the Status function, connect a jumper between terminals 2 and 5. See Table 4-1 (Stand Alone Mode).

4.2 Wiring the Telephones

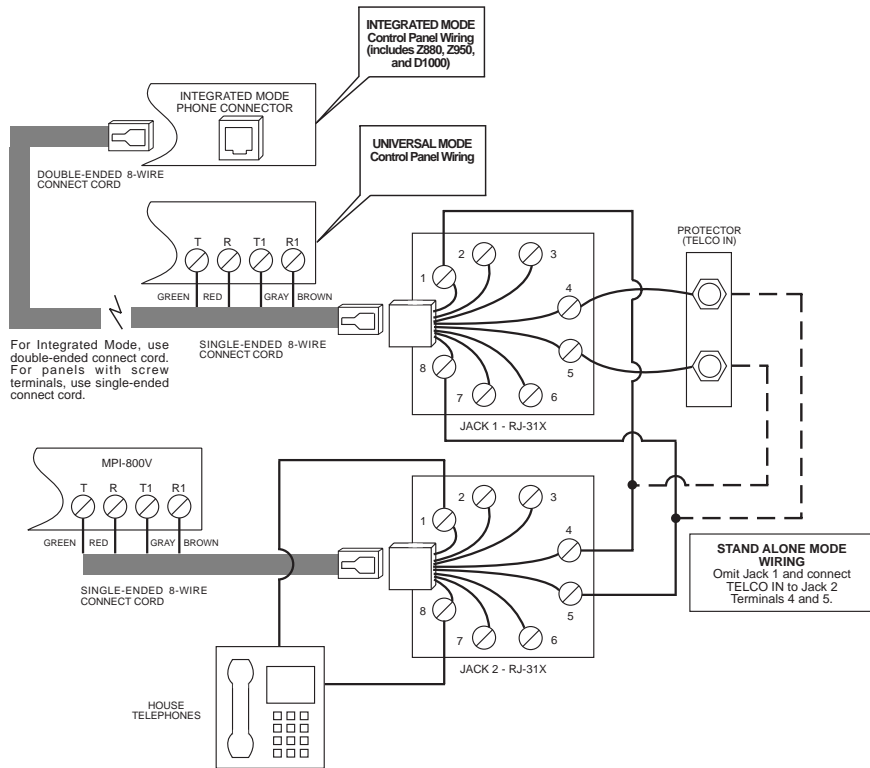


Figure 4-2 Telephone System Connections for Universal, Integrated, and Stand Alone Modes

RJ-31X Connections

Two USOC RJ-31X jacks are required: one for the control and one for the MPI-800V. Connect the Telco line to terminals 4 and 5 of jack 1. Connect terminals 1 and 8 of jack 1 to terminals 4 and 5 of jack 2. Connect the house telephones to terminals 1 and 8 of jack 2. Refer to Figure 4-2 for details in wiring the telephone circuit.

Control Panel Connections

Connect the control panel to jack 1. Attach flying leads from the connect cord to the control panel's telco terminals as follows:

| | |
|-------|--------------|
| green | T terminal |
| red | R terminal |
| brown | T1 terminal |
| gray | R1 terminal. |

Note: If wiring for Integrated Mode, use a dual-ended cord.

MPI-800V Connections

Make connections to the MPI-800V using a single-ended, 8-conductor connect cord on jack 2. Attach flying leads of the connect cord to the MPI-800V's telco terminals as follows:

| | |
|-------|--------------|
| green | T terminal |
| red | R terminal |
| brown | T1 terminal |
| gray | R1 terminal. |

Stand Alone Connections

Omit jack 1 and connect Telco In to jack 2, terminals 4 and 5. See Figure 4-2.

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5.1 Powering Up

Before powering up the system, make sure that all connections are complete. This chapter assumes that the preceding chapters have been read completely, that all wiring is complete, and that the system is ready to be powered up.

The green LED Line Status begins to flash one second on and one second off if all telephones are on-hook. If any devices are off-hook, Line Status flashes two seconds on two seconds off. (See Section 5.2.)

If the unit does not operate correctly, e.g., hangs up before you can enter a pass code, the watchdog monitor may be activating. If the green LED Line Status is blinking in an uneven manner (even with no telephone line), this indicates trouble. If the unit exhibits any of these symptoms, power down the system and carefully recheck the wiring. If the problem persists, return the unit to the factory for servicing.

5.2 Telephone Line Monitoring

In-use Monitor

The MPI-800V tests the telephone line for use by the house telephones and other devices. This in-use test occurs once every second. While the telephone line is in use, the MPI-800V activates an off-hook output, if one is programmed.

If all telephone devices are on-hook and Line Status continues to blink two seconds on and two seconds off, correct the problem by setting the jumper header on JP2 to HIGH.

Line-cut Monitor

If the telephone line is cut, the MPI-800V momentarily detects the event as an off-hook condition. Once the telephone voltage completely discharges, the MPI-800V recognizes the condition as a line-cut and immediately seizes the

house telephones by switching them from the telephone line to a 12V power source. This allows the user to continue to operate the control panel via the MPI-800V.

During the time that the MPI-800V has seized the house telephones and the system is inactive, the MPI-800V speaks **LINE SEIZED** every five seconds. If the user activates the system by pressing the # three times, the **LINE SEIZED** phrase ceases, and the unit asks for a pass code. Once the local session has ended, the MPI-800V resumes speaking **LINE SEIZED** every five seconds. When the telephone line is restored, the MPI-800V releases the house telephones and returns to normal operation. The MPI-800V optionally activates a programmable output when it detects a line-cut condition. This output does not activate until a programmed delay has expired. When the line-cut delay has expired, the MPI-800V activates the line-cut output and speaks **TELEPHONE LINE FAILURE** every five seconds.

Jumper JP3 sets the telephone line sensitivity. If an off-hook condition causes the unit to detect a cut telephone line, remove JP3's header. Further adjustments may be made by trying different combinations of settings for JP2 and JP3.

If no combination of settings prevents an off-hook device from being detected as a cut line, disable the line-cut function by programming a 0 in Function 22 (momentary line-cut output time).

Note: If you disable the line-cut function, the unit continues to detect off-hook conditions, but no longer seizes the house telephones if it detects a line-cut. If a line-cut does occur, the user is unable to access the control panel through the MPI-800V.

WARNING: If you use line-cut, program the line-cut delay time (Function 21) for enough time to accomplish an upload/download session.

5.3 Activation

Activation by House Telephones (Local Mode)

To activate the MPI-800V using the house telephones, pick up a Touch Tone® telephone and press the # key three times. The unit activates and speaks **ENTER PASS CODE**. (The default user code is 1234.) When you enter a valid code, the unit speaks the current system status (See Section 5.5.) and awaits further commands.

While the unit is in use, the telephone line is free to receive incoming calls. If the unit detects a ring on the telephone line while the unit is in a local session, it alerts the local user by sounding a “ring” tone in the receiver. The user can end the session by pressing the # key four times. Once the unit speaks **GOODBYE** and hangs-up, the user is connected to the incoming call.

Activation by Outside Telephones (Remote Mode)

The MPI-800V constantly monitors the telephone line for incoming calls and optionally answers the telephone after a programmed number of rings. If an answering machine or voice mail system is being used, the unit can be programmed to answer after the first ring of a second call.

Upon answering the telephone, the unit sounds two beeps and speaks **ENTER PASS CODE**. If the caller enters three incorrect pass codes, the unit speaks **GOODBYE** and disconnects. When this occurs, a tamper output is activated (if programmed).

If a valid pass code is entered, the unit speaks the current system status and awaits further commands. If a tamper has been attempted, the condition is cleared and the status message includes **TAMPER ALARM**. The unit stays off-hook until the user presses the # key four times, or until 30 seconds elapse with no further DTMF input.

Note: If the unit answers a remote call before the user can get to the telephone, the user may press the # key *once* to disconnect the unit.

5.4 Deactivation

The unit terminates a local *or* a remote session anytime the user presses the # key four times. When the DTMF tone ceases, the unit speaks **GOODBYE** and hangs up, returning the line to normal.

The MPI-800V terminates any connection after 30 seconds of inactivity (no DTMF input). If the unit is in Program Mode, this time-out is extended to three minutes.

5.5 Status Messages

The MPI-800V announces system status in three situations: upon activation by a user (remote or local), after the user presses *2, and after the user exits Program Mode. (See Section 6.4.) When in *local* mode only, a user does not need to enter a pass code to hear system status; the user may press the # key three times followed by *2.

Universal Mode

There are seven conditions that the MPI-800V can speak for Universal systems:

1. **SYSTEM ARMED** - The system is armed and there are no alarms.
2. **SYSTEM DISARMED** - The system was just disarmed.
3. **SYSTEM IN ALARM** - The system has one or more zones in alarm. The violated zones cannot be announced in Universal Mode, since there is no data bus connection for the zone information.
4. **SYSTEM NOT IN ALARM** - The system was in alarm and the alarm was deactivated.
5. **SYSTEM READY** - The system is disarmed and no zones are faulted.
6. **SYSTEM NOT READY** - The system is disarmed and one or more zones is faulted. Faulted zones cannot be announced, because there is no data bus connection for zone information.
7. **MEMORY FAILURE** - Something in the MPI-800V's function map has changed, causing a checksum failure. See Section 6.6.

Integrated Mode

There are twelve conditions that the MPI-800V can speak for Integrated systems:

1. **SYSTEM ARMED** - The system is armed and there are no alarms or troubles.
2. **SYSTEM PARTIAL ARMED** - The system was armed with one or more zones bypassed. In addition, there are no alarms or troubles.
3. **SYSTEM FORCE ARMED** - The system was armed with a faulted zone(s), and the panel is programmed with force arming enabled.
4. **SYSTEM DISARMED** - The system was just disarmed.
5. **SYSTEM IN ALARM** - The system has one or more zones in alarm. After you disarm the panel, the unit announces all the zones in alarm, e.g., **ALARM MEMORY IN ZONE 1**.
6. **SYSTEM NOT IN ALARM** - The system was in alarm and the alarm was deactivated by a code entry or key switch.
7. **SYSTEM READY** - The system is disarmed and no zones are faulted. After speaking **SYSTEM READY**, the unit announces all bypassed zones, e.g., **ZONE 1 BYPASSED**.
8. **SYSTEM NOT READY** - The system is disarmed and one or more unbypassed zones is faulted. After speaking **SYSTEM NOT READY**, the unit announces all of the zones that are faulted, e.g., **ZONE 1 NOT READY**. Next it announces all bypassed zones, e.g., **ZONE 1 BYPASSED**.
9. **AC FAILURE** - AC power to the control panel has failed. The system is being powered by battery back-up power.
10. **SYSTEM TROUBLE** - A trouble condition exists on the control panel (low battery, blown fuse, failed communication, etc.). Any condition (other than AC failure) that causes the keypad TROUBLE LED to come on will initiate this message.
11. **MEMORY FAILURE** - Something in the MPI-800V's function map has changed, causing a checksum failure.
12. **INSTANT ARMED** - The system is armed, but with delays turned off.

Stand Alone Mode

Since there is no input from a control panel, there are only two conditions that the MPI-800V can speak for Stand Alone Systems:

There are two conditions that the MPI-800V can speak for Stand Alone systems:

1. **SYSTEM READY** - See Section 4.1.
2. **MEMORY FAILURE** - Something in the MPI-800V's function map has changed, causing a checksum failure.

Note: To establish a System Ready status, complete the wiring connections as explained in Section 4.1 (Stand Alone Mode wiring).

5.6 Commands

The MPI-800V provides different commands according to the mode selected.

Universal Mode

In addition to arming and disarming, Universal Mode has seven other commands. These are described further in the *MPI-800V User Guide*.

Table 5-1 Universal Mode Commands
(See *MPI-800V User Guide* for more details)

| Telephone Keys | Commands Provided |
|----------------|---|
| # | Activate Local Session Terminate Local or Remote Session Global OFF Command for User Outputs |
| * | Reset Enter Command Mode Store - See Chapter 6. Panic (Press * five times) |
| *1 | Relay Control |
| *2 | System Status - See Section 5.5. |
| *6 | Output Control |
| *8 | Listen-in Trigger |
| *9 | Program MPI-800V - See Chapter 6. |

After the following commands are executed, the system acknowledges the user in these ways:

- **Arming** - The unit speaks **SYSTEM ARMED**. If the system was armed by a local user, the unit then speaks **EXIT NOW**.
- **Disarming** - The unit speaks **SYSTEM DISARMED**.
- **Programming** - The unit repeats the system status, as described in Section 5.5.

Arming and disarming are performed by connecting a user relay or one of the programmable outputs to a key switch zone or terminal on the control panel. The relay or output must be defined as a key switch trigger (momentary or maintained). See Table 6-2. Force-arming may be possible as well, depending on the control panel in use.

A key switch trigger output is activated when a user enters a pass code while the unit is already active. The arm/disarm pass code is the same user code that is entered to activate the unit (default 1234).

Integrated Mode

There are twelve available commands when using the MPI-800V in Integrated Mode. Arming and disarming are accomplished by entering a user code for the control panel. Other commands are selected by pressing the * key followed by the command key. See Table 5-2.

Table 5-2 Integrated Mode Commands
(See *MPI-800V User Guide* for more details)

| Telephone Keys | Commands Provided |
|----------------|--|
| # | Activate Local Session Terminate Local or Remote Session Bypass (Zone Shunting) Global OFF Command for User Outputs |
| * | Reset Enter Command Mode Store - See Chapter 6. Panic (Press * five times) |
| *1 | Relay Control |
| *2 | System Status - See Section 5.5. |
| *3 | Alarm Memory |
| *4 | Interior On/Off |
| *5 | Delay On/Off |
| *6 | Output Control |
| *7 | Smoke Reset |
| *8 | Listen-in Trigger |
| *9 | Program MPI-800V - See Chapter 6. |
| *0 | Access |

Stand Alone Mode

The MPI-800V controls the relay and the programmable outputs for devices, such as motors, heaters, thermostats, water pumps, X-10, and lighting control.

Table 5-3 Stand Alone Mode Commands
(See *MPI-800V User Guide* for more details)

| Telephone Keys | Commands Provided |
|----------------|---|
| # | Activate Local Session Terminate Local or Remote Session Global OFF Command for User Outputs |
| * | Reset Enter Command Mode Store - See Chapter 6. Panic (Press * five times). |
| *1 | Relay Control |
| *2 | System Status - See Section 5.5. |
| *6 | Output Control |
| *8 | Listen-in Trigger |
| *9 | Program MPI-800V - See Chapter 6. |

5.7 Special Codes

Key Switch Toggle Code

For quick arming and disarming, Function 11 (key switch toggle code) may be used. The key switch toggle code enables the key switch relay or output to change states (for latching key switch), or to momentarily toggle on and off (for momentary key switch). The user can arm or disarm the control panel quickly by entering this code only one time. Normal user codes require the user to enter the code twice: once to gain access to the unit and again to arm or disarm.

The key switch toggle code is available for Universal, Integrated, and Stand Alone Mode (Integrated Mode requires the control panel to have a key switch defined zone). In Integrated Mode, the key switch toggle code may be used only after activating the unit locally via the # key. Once a pass code has been entered, the control can be armed or disarmed only by entering the control panel's user code.

Function 12 (key switch toggle code authorization) may be used to limit user access to outputs and listen-in; however, authorization levels 0 and 1 will always have arm and disarm capabilities, unlike normal user codes.

Note: The key switch toggle function is available only to local users. The key switch toggle code operates as a normal user code for remote calls.

Listen-in Code

The listen-in code can be used by a central station operator to trigger a third party listen-in or a two-way voice device. When the unit receives a listen-in code for a remote session, it speaks **ACTIVATING LISTEN-IN** and activates the listen-in output, if one is defined. The unit then either hangs-up or stays online while the listen-in output is active.

If the unit is programmed to stay online, it will not time-out and hang-up while the listen-in output is active. The listen-in output can be toggled on and off with the ***8** command while the unit is online.

Depending on the listen-in authorization, the operator may be able to manipulate the relay and outputs and arm and disarm. Any listen-in user can retrigger listen-in via ***8**, regardless of authority level. Normal user codes require an authority level of three to be able to trigger listen-in (remote sessions only). Any authorization level may turn OFF listen-in with ***8**. If the listen-in code is entered for a local session, the unit activates the listen-in output without speaking any phrases. This allows the listen-in code and output to be used for an access or duress trigger.

6.1 Introduction

Programming is accomplished by the use of a Touch-Tone® telephone and is available in all three modes. During programming, the unit prompts the user with voice messages and tone sequences.

Note: The Touch Tone® telephone must produce a minimum 100ms tone when the key is pressed.

6.2 Entering Program Mode

Program Mode is available any time the unit is active in a local session. To enter Program Mode, the user must press *9. The unit then speaks **ENTER PROGRAM CODE**. The user must then enter a valid program code (default = 9632).

Shortcut for Local Users: Press the # key three times.. The unit speaks **ENTER PASS CODE**. Press *9. The unit then speaks **ENTER PROGRAM CODE**. Enter a valid program code.

For remote sessions, the user must first enter a *user* pass code to gain access to the unit. The user then presses *9, followed by the program code to enter Program Mode.

Note: Remote programming is disabled by default. See Function 2 in Table 6.1. If a user attempts remote programming with this function disabled, the unit speaks **NO ACCESS**, followed by system status.

Once the user enters a valid program code, the unit speaks **PROGRAM MODE, ENTER FUNCTION NUMBER**.

6.3 Accessing Function Map Locations

The user accesses function map location by entering a two-digit number followed by the # key. Single-digit entries are assumed to have leading zeros. If a valid function number is entered, the unit announces the function number and its current value, e.g., **FUNCTION 02 IS 0**. If the function location is that of a code (See WARNING below.), the unit speaks all four digits of the code, e.g., **FUNCTION 03 IS 1234**. If the code location has not been programmed, the unit announces that the function is not in service, e.g., **FUNCTION 03 IS NOT IN SERVICE**. If the function number that was entered is invalid, the unit speaks **PLEASE RE-ENTER**.

To change a function's value, the user must enter a value followed by the * key (store). The unit echos this new value to the user, e.g., **FUNCTION 04 IS 3**. Single or double-digit entries are assumed to have leading zeros. If the function is a code location, enter all four digits of the code.

WARNING: Entering a single digit in a *code* location deletes the current code at that location!

Press the # key to move sequentially through the function locations. To jump to a function location out of sequence, enter the function number followed by the # key. The unit responds by announcing the new function location and its value.

6.4 Exiting Program Mode

To exit Program Mode, press the * key once. If a function was just modified, press the * key twice: once to store the new value and again to exit Program Mode. The unit responds by announcing the system status, as described in Section 5.5. If the unit is left in Program Mode for over three minutes with no activity, it speaks **GOODBYE** and hangs up. All programming changes are saved (up to the last store command).

6.5 Defaulting the Unit

In the event of a forgotten program code or to reload the default function map, momentarily place a shorting header on JP4 at power-up. The unit responds by seizing the local telephones and sounding a 1kHz tone for one second.

WARNING: Do not leave the header on JP4! Doing so activates factory test mode, which causes erratic operation in a field installation!

After thirty seconds, the unit releases the house telephones and resumes normal operation (if the header was removed).

6.6 Memory Error Indication

When the function map is modified, a checksum value is calculated for the EEPROM contents and stored in another EEPROM location. The function map checksum value is constantly recalculated and compared with the stored checksum. If the checksum values do not match, the unit speaks **MEMORY FAILURE** when the unit is accessed. Clear a memory failure by entering and then exiting the MPI-800V's Program Mode.

Note: All function locations should be verified first to find the location that was corrupted. If the program code has changed, you must follow the procedure above for defaulting the unit.

6.7 Programming the Function Map

The MPI-800V employs the function map shown in Table 6-1 for all of the programmable options. These options are stored in non-volatile memory. When the unit is defaulted, it automatically reloads the default values into the appropriate locations. Table 6-2 describes the output configuration digits that are used to define the output types.

Table 6-1 Function Map

| Funct # | Item and Default | Description and Valid Range | New Value |
|----------------|---|--|------------------|
| 01 | Program Code default = 9632 | Code used to enter programming, 4 digits (0000-9999) | |
| 02 | Program Code Authority Level default = 0 | Controls the level of authority, (0-1) 0 = local only (house phone) 1 = local & remote (house & remote telephone) | |
| 03 | Pass Code 1 default = 1234 | Code used to activate unit 4 digits (0000-9999) | |
| 04 | User 1 Authority Level default = 3 | Controls the user authority level, (0-3) 0 = status only 1 = status + outputs 2 = status + outputs + arm/disarm 3 = status + outputs + arm/disarm + listen-in | |
| 05 | Pass Code 2 default = disabled | Code used to activate unit 4 digits (0000-9999) | |
| 06 | User 2 Authority Level default = 3 | Controls the user authority level, (0-3) (See Function 04 above.) | |
| 07 | Pass Code 3 default = disabled | Code used to activate unit 4 digits (0000-9999) | |
| 08 | User 3 Authority Level default = 2 | Controls the user authority level, (0-3) (See Function 04 above.) | |
| 09 | Pass Code 4 default = disabled | Code used to activate unit 4 digits (0000-9999) | |
| 10 | User 4 Authority Level default = 1 | Controls the user access level, (0-3) (See Function 04 above.) | |
| 11 | Key Switch Toggle Code (User 5) default = disabled | Code used to toggle key switch output 4 digits (0000-9999) | |
| 12 | Key Switch Toggle Code Authority Level default = 0 | Controls the user authority level, (0-3) (See Function 04 above.) (See Section 5.7 for Special Codes.) | |
| 13 | Listen-in Code default = 5678 | Code that is used by Central Station to establish two-way voice | |
| 14 | Listen-in Authority Level default = 0 | Controls access level of Central Station, (0-2) 0 = listen-in only 1 = listen + outputs 2 = listen + outputs + arm/disarm (Status is available with any authority.) | |

| Funct # | Item and Default | Description and Valid Range | New Value |
|----------------|--|---|------------------|
| 15 | Mode of Operation default = 1 | Sets the mode of operation, (0-2) 0 = Integrated Bus Mode 1 = Universal Mode (+) Logic 2 = Universal Mode (-) Logic | |
| 16 | Rings Before Answer default = 5 | Determines the # of rings before answer, (0-15) 0 = disable | |
| 17 | Answer Mode default = 0 | Answer machine override, (0-2) 0 = Normal : answers 1st call after # of rings programmed in Function 016 1 = Confirm : answers 2nd call only if something else answered 1st call (an off-hook was detected) 2 = Bypass : answers 2nd call only if nothing else answered 1st call (no off-hook was detected) | |
| 18 | Call-Back Window default = 2 | Maximum time in minutes that Answer Mode will wait to answer 2nd call, (1-15) | |
| 19 | Quick Panic Enable default = 1 | Allows panic output user code, (0-1) 0 = quick panic disabled 1 = quick panic enabled | |
| 20 | Momentary General Purpose Output Time default = 2 | Controls ON time of momentary general purpose, 1-15 seconds | |
| 21 | Line-cut Output Delay default = 5 | Delays time before activating line-cut output, 0-15 minutes 0 = instant | |
| 22 | Momentary Line-cut Output Time default = 0 | Controls ON time of momentary line-cut, 0-15 seconds 0 = disable line-cut monitor | |
| 23 | Momentary Tamper Output Time default = 1 | Controls ON time of any output defined as a momentary tamper, 1-15 seconds | |
| 24 | Momentary Key Switch Trigger Time default = 1 | Controls ON time of any output defined as key switch trigger, 1-15 seconds | |
| 25 | Enable Programmable Outputs default = 1 | Controls J1 outputs, (0-1) 1 = enable 0 = disabled | |
| 26 | Listen-in Configuration default = 0 | Determines whether unit stays online after listen-in output is triggered, (0-3) 0 = hang-up after LI Trigger 1 = stay online after LI Trigger 2 = hang-up and multiply value in Function 27 x 60 (max. 4 minutes). 3 = stay online and multiply value in Function 27 x 60 (max. 4 minutes). | |

| Funct # | Item and Default | Description and Valid Range | New Value |
|----------------|---|---|------------------|
| 27 | Listen-in Output Enable/ON Time default = 1 | Controls the ON time of any output that is defined as a listen-in trigger, 0-15 seconds if Function 26 = 0-1 0-4 minutes if Function 26 = 2-3 0 = disabled | |
| 28 | User Relay Configuration default = 14 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 29 | Output 1 Configuration default = 7 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 30 | Output 2 Configuration default = 8 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 31 | Output 3 Configuration default = 9 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 32 | Output 4 Configuration default = 10 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 33 | Output 5 Configuration default = 15 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 34 | Output 6 Configuration default = 11 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 35 | Output 7 Configuration default = 1 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 36 | Output 8 Configuration default = 1 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 37 | Output 9 Configuration default = 1 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |
| 38 | Output 10 Configuration default = 1 | Output configurations (See Table 6-2.) 0-15 0 = disabled | |

Table 6-2 Output Configurations

| Config. Digit | Description | Type |
|----------------------|---|--|
| 1 | General Purpose (user controlled) | Latching |
| 2 | General Purpose (user controlled) | Momentary |
| 3 | Line-cut (self restoring) | Latching |
| 4 | Line-cut | Momentary |
| 5 | Listen-in | Momentary only |
| 6 | Line Status/Heartbeat | Follows status LED |
| 7 | Panic | Latching only - Activated after pressing the * key five times; cleared after any valid pass code |
| 8 | System Active | Follows answer or seize relay |
| 9 | Ring Detect | Follows ring signal |
| 10 | Off-hook | Follows telephone line use |
| 11 | Tamper (3 failed pass code attempts) | Latching |
| 12 | Tamper (3 failed pass code attempts) | Momentary |
| 13 | Key Switch Trigger (triggered by pass code) | Latching (maintained) |
| 14 | Key Switch Trigger (triggered by pass code) | Momentary |
| 15 | DTMF Data Valid | Follows DTMF signal |

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Specifications

Technical Specifications:

- Nominal current drain (idle): 40mA
(online): 100mA
(on line + K1 + 10 outputs @ 40mA): 600mA
- Operating temperature range: 32° to 120° Fahrenheit
(0° to +49° Celsius)
- Operating voltage range: 10.2 - 14.0 VDC
- Watchdog microprocessor monitoring circuit.
- Automatic system shutdown if voltage falls below 7.5 volts.

Power Output:

- 10 outputs @ 12V, 40mA max. continuous output.
- 12V Aux. output overload protected at 2.5A.

Voice Output:

- -5 dBm @ 600Ω

Ringer Equivalency Number (REN):

- 0.4B

Load Number (LN):

- 18

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Glossary

Arm/Disarm Pass Code - Code programmed to allow the user to set (arm) or turn off (disarm) the system.

Armed - System is set to detect violation of protected zones.

Bypass Mode - MPI-800V is programmed to answer only second calls in order to bypass answering devices.

Confirm Mode - MPI-800V is programmed to answer a second call only after another device has answered the first call.

DTMF - (Dual Tone Multi-Frequency) The sound a Touch Tone® telephone generates when the digits are pressed.

Disarmed - System is not set to detect violation of protected zones.

Earth Ground - A ground rod or other grounding device.

Faulted Zone - A zone that has been violated.

Function Number - Options and codes as stored by number in the system's memory bank.

House Telephones - Premise's telephones.

Integrated Mode - Use of MPI-800V with the Z950, Z880, and D1000 security system controls.

Key Switch Toggle Code - Allows quick arming and disarming.

Line-cut - The MPI-800V senses a missing phone line.

Listen-in Trigger - Feature that triggers a listening or two-way voice device, if installed.

Local Session - Activating the MPI-800V via house telephones.

MPI-800V - Telephone voice interface unit.

Off Hook Condition - One or more of the house telephones is off hook.

Panic Output - Activated when * key is pressed five times.

Ring Detect - The MPI-800V detects an incoming call.

Pass Code - Code used to activate MPI-800V.

Programmable Output - Outputs that can be custom programmed for a variety of uses (e.g. tamper, line-cut, panic, key switch).

Program Mode - Mode enabling changes to be made to options and codes stored in the MPI-800V memory.

Remote Telephones - Any off-premises Touch Tone® telephone used to activate the MPI-800V.

Remote Session - Activating the MPI-800V via outside telephones.

Stand Alone Mode - The MPI-800V is used to control the relay and outputs.

Tamper Alarm - Signals the user that an unauthorized caller has attempted to access the system.

Universal Mode - Use of MPI-800V with any security system control.

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FCC COMPLIANCE

PART 68 NOTIFICATION

This equipment complies with Part 68 of the Federal Communications Commissions (FCC) rules. All connections to the telephone network must be made through standard telephone company plugs and jacks, RJ31-X or equivalent, in such a manner as to allow for easy and immediate disconnection of the equipment. If the connecting cord is unplugged from the jack, there shall be no interference to the telephone equipment still connected to the telephone network.

The FCC registration number and Ringer Equivalence Number (REN) can be found printed on the wiring connection label located on the equipment. If requested, provide this information to your telephone company. The REN is useful to determine the quantity of devices that may be connected to your telephone line and still have all of those devices ring when your number is called. In most, but not all, areas, the sum of the RENs of all devices should not exceed five.

In the unlikely event that the equipment should ever fail to operate properly, it should be disconnected from the telephone jack to determine if the problem is with the telephone network or with the equipment. If a problem is found with the equipment, leave it disconnected until it is repaired or replaced.

In the unlikely event that the equipment should ever cause harm to the telephone network, the telephone company may temporarily discontinue your service. If possible, they will notify you in advance. However, if advance notice isn't practical, the telephone company may temporarily discontinue service without prior notification. In the case of temporary discontinuance, the telephone company shall promptly notify the telephone subscriber who will be given the opportunity to correct the situation. The customer also has the right to bring a complaint to the FCC if he feels the disconnection is not warranted.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice so as to give you an opportunity to maintain uninterrupted service.

You should notify the telephone company if this equipment is removed from the premises and the telephone jack is no longer needed.

The FCC prohibits the connection of this equipment to party lines and the use of this equipment in conjunction with coin-operated telephone service.

An AC surge arrester should be installed in the system's AC power outlet.

PART 15 NOTIFICATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CANADIAN NOTICE

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee that the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The LOADNUMBER (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all the devices does not exceed 100. The Load Number (LN) can be found on the wiring connection label located on the equipment.

This equipment is a Class B Digital apparatus which complies with the radio interference regulations, CRC c. 1374.

MOOSE 

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