



**MR-2900**  
Fire Alarm Control Unit

# PROGRAMMING MANUAL

*September 2009*  
*Document #: LT-2011 Rev.2*

**WARNING:** *This manual contains information on limitations regarding product use and function and information on the limitations as to liability of the manufacturer. The entire manual should be read carefully.*



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# 1.0 Operation and Programming Concepts

## **Warnings: Before Programming**

1. All applicable codes and standards should be considered when programming the Control Unit.
2. The Control Unit continues to monitor input circuits and devices and acts according to the current program settings if an alarm is received while it is being programmed.
3. Loading a new database erases the current database before loading the new database. If the new database is not loaded after the erasure, the panel will not operate.
4. The database internal revision number included must match the number required by the MR2 program, otherwise a Database Mismatch trouble condition is generated. This condition disables the panel until a correct MR2 program is loaded.
5. The database must be completely loaded for it to be considered valid. The program keeps track if the last database load was valid/complete or not. An invalid database load disables the panel until a valid database load is done.

## 1.1 General Comments

There are two different programs available for use in the Control Panel:

- The *MR1* program only works with a stand alone panel and conventional input circuits. All programming is done through the LCD and keypad. This is not discussed here.
- The *MR2* program handles all variations. Input circuit programming is done from the database, while system parameters are programmed from the LCD and keypad. The programs and their port 3 usages are: MR2-x: old SE 2000 protocol; MR2-xA: MR-2614 annunciator, MR-2644 annunciator, MR-2801-MR Reverse Polarity module and MRDL Dialer. MR2-xB: new SE 2000 protocol (device level); MR2-xG: GRID; MR2-xE: MV-2700 Voice Evacuation panel. MR2-7y programs are for MR-2931 based systems and MR2-3y programs are for MR-2921 based systems.

Due to programming and hardware limitations, units using the MR-2901C and MR-2921 main circuit boards may not have some of the options that are listed here.

The MR2 program uses a database for input circuit programming. This database includes the conventional circuit definitions, addressable devices on-line, and the Zone LEDs, Bells, Releasers, Functions Relays and Control Modules activated by the conventional circuits and addressable devices. This database is created and downloaded from an IBM compatible computer using the Modul-R Human Interface (MHI) program. Refer to the *Modul-R Human Interface User Guide* for instructions on downloading the database.

This manual is for database version 22.



**Note:** All communications are stopped during the database load. This will cause a trouble to be recorded by those units that are normally communicating with the panel.

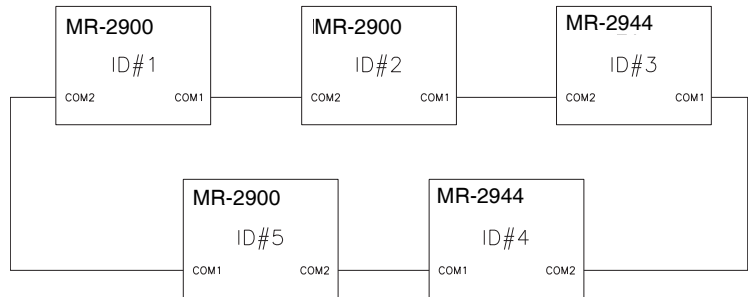
The use of Port 3 on the panel is handled by loading different versions of the operating program. Each different protocol has its own operating program. If an incorrect operating program is detected, a Miscellaneous Trouble is generated, but the panel will continue to work except for the Port 3 functions.

## 1.2 Networks

### General

The MR-2900 can be incorporated into a network including other MR-2900 panels, MR-2200 panels and MR-2944 annunciators. Though up to 254 panels and annunciators can be supported by the network, such a network would probably be too large to properly maintain. The network can be setup for single building or multiple building operation.

The basic layout of the network is a single loop (see **Figure 1**). Each panel and annunciator has a unique ID. There is no requirement that the IDs be sequential or that they start with 1. The master panel can be any fire panel in the network. The panels work in a peer-to-peer fashion. This means that each panel is responsible for the programming of the inputs



**Figure 1: Typical Network Layout**

connected to it. The master panel does not control the network, but is a central location for information. Information is exchanged over the network via two basic means: a) specific frames, which are from one panel to another, and b) broadcast frames, which are from one panel to all others.



- Note:**
1. For correct operation of the network, all panels and annunciators need to be loaded with the same version of operating programs and with the same database. If changes are made to the database, it is recommended that ALL panels and annunciators be reloaded.
  2. When panels and annunciators are first installed, the panel ID must be entered into it *before* loading the database.

The special functions of the master panel are:

- a) synchronize the clocks on the network by broadcasting the date and time at 3:30am every day; this means that only the master panel of a network requires that its clock be calibrated;
- b) maintain a network alarm list;
- c) transmit all signals from the network to a monitoring location;
- d) operate its common/municipal relays in accordance with the network condition.

### Feature Operation

The following are the various types of frames that are sent on the network.

#### Commands & Restores

These specific frames are sent when a device in alarm requires operation of outputs at another unit. These commands are for the bells, relays, control modules, device messages and LEDs. When the device itself restores, the restore commands are sent right away so that the other panels know that they can be reset. Anything operated will stay latched until the *Reset* key is pressed.

#### Hotkey and Hotkey LED Operation

If Hotkey routing is on a panel, it will send Ack, Reset, Sig Sil and Second Stage Inhibit to the other panels as specific frames.

If a panel's function keys are sent to other panels, those panels will send commands to the panel to have it turn on and off the hot key LEDs. This is so that there is indication that the key function has become available. This will cause the LEDs to continue flashing after the key is pressed until the frame is received to turn off the LED.

### *Time/Date Change*

This broadcast frame is sent by a panel or annunciator if the time or date is changed. The master panel also will send both a date and time change frame at 3:30am every day to synchronize all the clocks in the network.

### *Manual Switch Operation*

If the state of any of the 16 software switches is changed manually at any panel, this change is broadcast to all other panels. The software switches are a system resource.

### *Network Reboot*

If a Network Reset command is initiated at a panel, it is broadcast normally and then the panel will reboot itself. Upon receiving the Network Reboot command, a panel will pass it on to the next panel and then reboot itself. This has the affect of causing all the panels to reboot simultaneously.

### *Network Verify*

Network Verify is the process by which the master panel queries the rest of the network to determine on-line status. Each panel will respond to the network verify request. The user can also request a Network Verify at any time from any panel in the network.

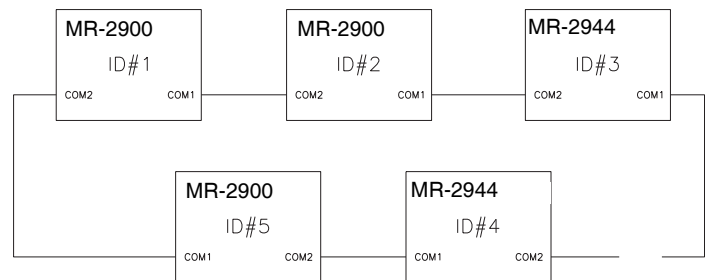
## **Network Communications**

Information is sent across the network in frames. There are two types of frames: specific and broadcast. Specific frames are sent from one unit to another. Broadcast frames are sent from one unit to all others.

### *Specific Frames*

Specific frames deal with information generated at one panel and required at another. It is passed from panel to panel until it reaches its destination. Each panel has a list as to which port to send frames from to reach all other panels through the fewest number of panels. Since networks will generally have all communications links running at the same baud rate, this is generally the shortest time as well.

If there is a break in the communications (see **Figure 2**), the panel that can not pass the message on will send it back the way it came. This will cause the frame to go the long way around the network. If there are two breaks in the network loop, the frame is again reversed at the second break. When it is received by the originating panel after this second turn around, the frame is considered to be orphaned and destroyed. This generates a *Network Reboot Required* trouble. This will be passed on to all other panels. The reason the orphan frame is destroyed is to prevent unexpected operation when the network is finally repaired, such as a panel starts ringing its bells because of an alarm from the previous day.

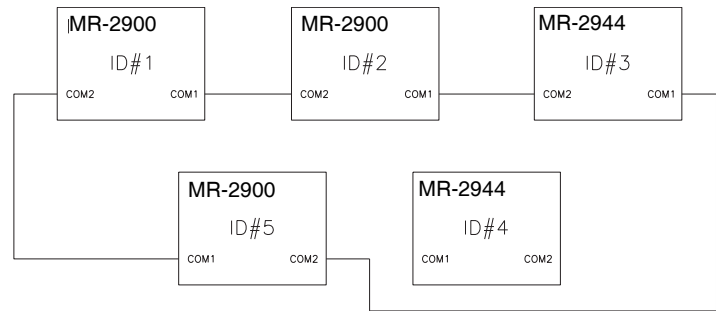


**Figure 2: Single Network Break**

### *Broadcast Frames*

Broadcast frames deal with information that affects the entire network. When a broadcast frame is created by a panel or annunciator, it is sent out both network communications ports. Each unit in turn will receive the broadcast in one port, act upon it and pass it on out the other port. Upon reaching the unit that generated the broadcast frame, that unit then disposes of it. This means that under normal circumstances, all units will receive a broadcast twice and act upon it twice.

If there is a break in a communications link (see **Figure 2**) the broadcast will be disposed of by the unit unable to pass it on. In the situation where a unit has been removed from the loop (see **Figure 3**), the broadcast will be passed only from com2 to com1 at the jump. In **Figure 3**, panel 5 will pass the broadcast to panel 3, but panel 3 will not pass the broadcast on to panel 5 since it is supposed to be communicating to panel 4.



**Figure 3: Panel Removed From Network**

### 1.3 Addressable Devices

The MR-2900 can use analog/addressable devices. There are two general types of devices: sensors and modules. The following devices are supported:

#### *Modules*

MRI-M500M	Monitor module
MRI-M501M	Mini monitor module
MRI-M502M	Monitor module for conventional 2-wire smoke detectors
MRI-M503M	Micro monitor module (EN54 listed only)
MRI-M500DM	Dual monitor module
MRI-M500R	Relay module
MRI-M500S	Control module
MRI-M500X	Isolator module
IM-10	Intelligent Input Monitor Module
CZ-6	Zone Interface Module
CR-6	Relay Control Module
SC-6	Supervised Control Module

#### *Sensors*

MRI-1251B	Ionization type smoke detector, low profile
MRI-1551	Ionization type smoke detector
MRI-2251B	Photoelectric type smoke detector, low profile
MRI-2551	Photoelectric type smoke detector
MRI-2251TB	Photoelectric type smoke detector c/w heat detector, low profile
MRI-2551TH	Photoelectric type smoke detector c/w heat detector
MRI-5251	Fixed temperature detector, low profile
MRI-5251H	Fixed temperature, high temperature
MRI-5551	Fixed temperature detector
MRI-5251R	Rate of Rise and fixed temperature detector, low profile
MRI-5251B	Low Profile Intelligent Plug-in Thermal Sensor
MRI-5251RB	Intelligent Plug-In Thermal Sensor
MRI-5251H	Low Profile Intelligent Plug-in Thermal Sensor
MRI-5551R	Rate of Rise and fixed temperature detector
MRI-DH200LP	Low Flow Photoelectric Duct Detector, 2-Wire
MRI-DH200RLP	Low Flow Photoelectric Duct Detector, 4-Wired
MRI-2251TMB	Acclimate
MRI-7251	Pinnacle Laser

The MRI-M500M, MRI-M500DM, MRI-M501M, MRI-M502M and MRI-M503M monitor modules all appear the same to the MR-2900. This allows for the easy substitution of devices. The MRI-M501M and MRI-M503M modules are intended for mounting inside the back box of a conventional contact device. The MRI-M500M, MRI-M500DM and MRI-M502M require back boxes for mounting.

The MRI-M500DM dual monitor module has two Class (Style) B input circuits. The first input uses the address dialled into the module and the second uses that address plus 1. That is, if the dials are set for address 34, the monitor modules to be programmed into MHI are at addresses 134 and 135.

The MRI-M502M monitor module can be used for monitoring up to 20 System Sensor two-wire smoke detectors. The module requires a separate 24 VDC supply to power the smoke detectors. Also, some external means of resetting the power must be provided since the module cannot reset the detectors. This can be accomplished with one of the general purpose relays of the MR-2900. Do not assign any relays to the relay in the MHI database. Also, the relay must be assigned a non-zero duration with the LCD menu. Then the relay will operate whenever the *Reset* hot key is pressed when it has nothing else to reset (neither LED is flashing).

The MRI-M500S control module can be used to control a supervised output, such as a bell or strobe circuit. The control module monitors the circuit wiring and troubles will be reported. The module will require a separate 24 VDC supply for the controlled circuit. When programming the database in MHI, be sure to program the control module correctly. Choose any "Control (*str*)" option other than "Control (Relay)" for the MRI-M500S module. The MR-2900 will not operate a control module if the supervised circuit is shorted. Also there are options in MHI that affect the MRI-M500S control module but not the MRI-M500R relay module.

The MRI-M500R relay provides two Form C relays. Choose "Control (relay)" for the MRI-M500R module. There are options in MHI that affect the MRI-M500R relay module that do not affect the MRI-M500S control module.

The MRI-M500X isolator module is used to prevent wiring faults from affecting the entire circuit. It divides the addressable circuit into sections. The isolator has separate IN and OUT wiring. A short on one side of the isolator will not be seen on or affect the other side. Isolator modules do not use addresses. The isolator relies on a voltage threshold to determine whether it should be isolating or not. This voltage threshold is around 6.5V. All isolators in a system are in isolated mode on system power up. If there is an excess of current draw, the isolator will not close. When the short is removed, the isolator module will automatically close the circuit again. The LED on the isolator module will turn on when the module is in isolated mode, otherwise it will flash periodically. System Sensor recommends no more than 25 devices between isolator modules since the inrush current of the devices may mimic a short condition preventing the isolator from closing. MRI-3251 detectors have an inrush current of up to 10 times that of other devices, thus only two can be placed between isolators.

The sensors all use bases for mounting. Besides the standard plain bases, there are also relay bases, isolator bases and a sounder base. The available bases are:

MRI-B501	Flangeless base for all sensors
MRI-B501B	Flanged base for MRI-x551 sensors
MRI-B210LP	Flanged base for MRI-x251 sensors, low profile
MRI-B501BH	Sounder base for all sensors
MRI-B501BHT	Sounder base, temporal
MRI-B524BI	Isolator base for MRI-x551 sensors
MRI-B224BI	Isolator base for MRI-x251 sensors, low profile
MRI-B524RB	Relay base for MRI-x551 sensors
MRI-B224RB	Relay base for MRI-x251 sensors, low profile

The relay and sounder bases are activated by the sensor LED. When this LED stays on for more than 10 seconds, the base will activate. This requires that the MR-2900 have the LED mode set to FLASH/ON. This is done through the LCD Menu by choosing PROGRAM/ADDRESSABLE/LED MODE/FLASH. The MR-2900 will only turn on the LEDs of up to 5 devices<sup>1</sup> per addressable circuit to prevent excess current flow. While the panel will continue to respond to further alarms from the circuit, the panel will not turn on additional LEDs. The MRI-B501BH and MRI-B501BHT sounder bases require a separate 24 VDC supply for operation. If the polarity of this supply is reversed for more than 10 seconds, the sounder base will activate.

Isolator bases function the same as isolator modules. The sensor plugged into the base is connected to the IN wiring to the base. The isolator is between the sensor and the OUT wiring.

While both sensors and modules have rotary dials that allow for addresses from 00 to 99, modules add 100 internally to the address programmed, thus using the address range 100 to 199. Since sensors and modules come from the factory addressed as 00, we do not allow that address to be used for an installed device. Address 0 is used for indication of wiring faults on the addressable circuit.

### Device Faults

The following troubles (with condition code letter) can be reported by or for addressable devices:

- **Missing (M):** A device listed in the database is not reporting back when polled by the panel. For a new installation, this is generally indicative of devices that have been mis-addressed. This error can also occur if there are any wiring faults.
- **Illegal (I):** A device is reporting on an address that the database shows as unused. For a new installation, this is generally indicative of devices that have been mis-addressed. For illegal sensors, since there is no programming available, if an alarm condition is detected, the MR-2900 will operate all its bell circuits.<sup>2</sup> In a network system, only the local panel will activate its bells. The MR-2900 will always **ignore** illegal modules.
- **Wrong Type (U):** This occurs if the device is not the type expected for the address. For example, the database lists an address to have a ion smoke detector, but a photo smoke detector has reported for the address. This error will also be used if the panel cannot determine the type of the device. If the device goes into alarm, the panel will operate normally.
- **Trouble (T):** *Sensors:* The device is defective and needs to be replaced.<sup>3</sup>  
*Modules:* The extended circuit from the module has a wiring fault.



**Note:** Control modules that supervise their output circuit will not be operated if the output circuit is shorted<sup>a</sup>.

- **Duplicate (D):** This means that two devices are using the same address. The MR-2900 does a check every hour for duplicate devices. If either device goes into alarm, the panel will operate normally.



**Note:** Due to the method used to detect duplicate devices, it is possible for a single device to appear as duplicate devices. Generally, the device will need to be replaced.

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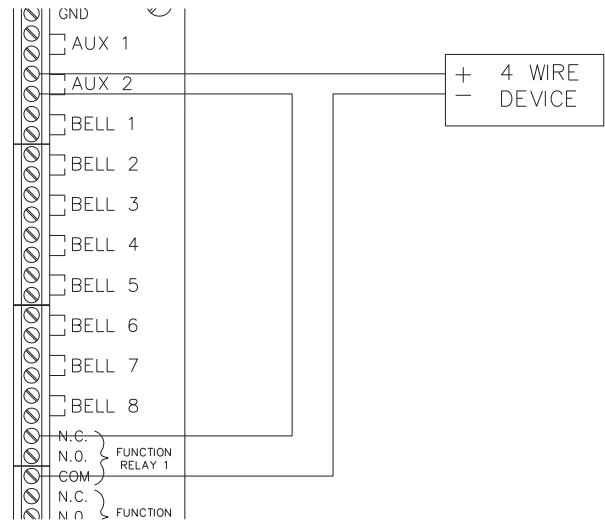
1. BRK programs dated before 2 April 1999 limit the number of LEDs to 3.  
 2. BRK programs dated before 18 February 1999 always ignore illegal sensors.  
 3. BRK programs dated before 9 March 1999 do not report sensor troubles.  
 a. BRK programs dated before 10 September 1999 do not operate control modules if in any fault.

**MR-2919 Class A Input Module**

The MR-2919 Class A Addressable Input Module uses two input circuits, out on the odd numbered circuit and in on the following even numbered circuit, for example: out on circuit 9 and in on circuit 10. Both circuits are powered by the panel from a single source, so that there is no internal isolation between the circuits. This means that a short across one circuit will affect the other circuit.

**1.4 Resetting 4-Wire Detectors**

4-wire detectors can be reset by using one of the function relays on the panel. The relay is not programmed for any use, that is, it is unassigned. The next requirement is that a non-zero duration be programmed for it (see the section *Outputs Dialog*). A duration of zero disables this function. Once this is done, wire the power for the device as shown in **Figure 4**. A third party power supply can be used instead of the Aux Power as shown. Whenever the *System Reset* key is pressed when *neither* LED is flashing, the relay will operate for the duration programmed.



**Figure 4: 4-Wire Device Wiring (Typical)**

## 2.0 Editing MHI Databases

### 2.1 General Comments

The editing of a system is done through a series of input windows. Editing starts with the System Level and progresses to the Panel Level, then to the Input Level, and finally to the Relate Level. The Main Menu and option speed keys are not available while editing/viewing the system. While editing is being done, the word OPEN is displayed in the Status Bar. This is to remind the user that the system database is open and that the computer should not be turned off. If the computer is turned off while the database is open, it may become corrupted.

If the current database has been previously verified and you select Edit, a requester will be displayed confirming your request to edit the database. If No is chosen, then the database is displayed in View mode. Editing the database will change the database to a non-verified state and will change the Last Edit Date.

Prior to an editing session, the database will be automatically backed up. This back up copy will have the same name as the original database, but will incorporate a .BAK extension. If a database becomes corrupted, delete it and rename its .BAK backup file to have a .DBA extension. This will restore the database to the state **prior to the last editing session**.



**Note:** When upgrading from a version 17 (or earlier) system, a number of items that were programmed at the panel are now included in the database. See the file UPGRADE.TXT for a complete description of these changes.

Follow these instructions to obtain the required information **before upgrading your firmware:**

1. Connect your computer to the panel and open the Terminal window
2. Select the Printer screen in the Terminal: press 14<Tab>
3. You should note that the title bar of the Terminal window displays the text "File logging in progress...". If this does not appear, press the button **Log On**.
4. In the terminal window, type the following command: 99?
5. The panel's configuration settings will be listed in the Terminal window and it will also be saved in the file: LOG\_CONT.TXT, located in your program directory
6. Close the Terminal window
7. You may now view the contents of the file using any standard word processor or text editor

You must perform the above procedure for ALL panels in your system

### Panel Types

There are a number of different types of panels that may be programmed. These are the ones covered:

- **MR-2900 (mb2931) Fire Panel:** This is an MR-2900 Control Panel using the MR-2931 motherboard. This panel accepts all input circuit modules and has four Class A or eight Class B power-reversing output circuits. These output circuits can be programmed to be used as either bells or releaser type circuits. This is the standard board for the MR-2900. These panels can be used in a network configuration.
- **MR-2900 (mb2921) Fire Panel:** This is an MR-2900 Control Panel using the MR-2921 motherboard. It is identical to the MR-2900 (mb2931) in hardware capability, but does not support all software features. This panel type is no longer produced.
- **MR-2900 (mb2901) Fire Panel:** This is an MR-2900 Control Panel using the MR-2901 motherboard. This panel accepts conventional input circuit modules only and has four bell circuits and four releaser type circuits. These circuits use different circuitry and cannot have their function changed. These panels can be used in a network configuration. This panel type is no longer produced.

- **MR-2100/MR-2200 Fire Panel:** Can be used in a network configuration with MR-2900 control panels.
- **MR-2400 Fire Panel:** Not discussed in this manual.
- **MR-2944 Annunciator:** It includes the memory required to have a database loaded into it. This allows for less information to be sent on the network. An optional 4x20 LCD can be included. This annunciator has two communications ports. This allows the annunciator to reside in the network loop. It uses the MR-2910 Network Board. One of the network ports can be disabled. This results in the annunciator having to be linked to a Control Panel. With one of the ports disabled, the annunciator can not be in the network loop.
- **MR-2934 Annunciator:** It is identical to the MR-2944 in operation. It has the network communications built onto the board instead of using the MR-2910 Network Board. This annunciator is no longer produced.

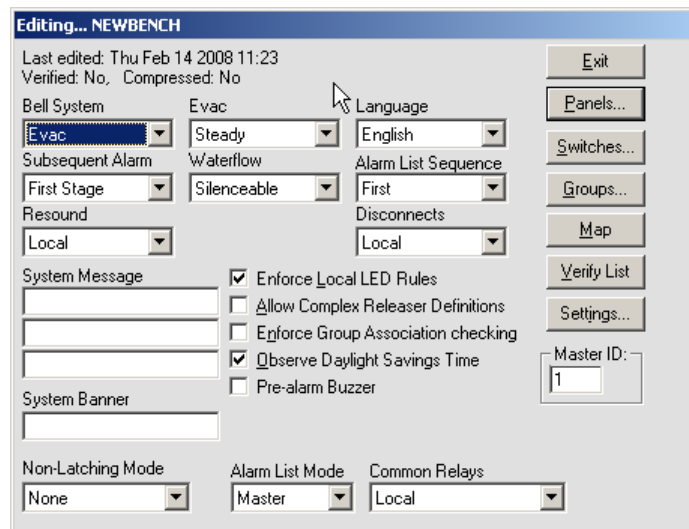
The MR-2614 and MR-2644 Annunciators can be attached to the MR-2900 panel. They are considered an extension of the panel by MHI and do not change how these panels interface with other annunciators.

## 2.2 System Window

The System Window (see **Figure 5**) allows editing of all system level options, as well as detailing other system wide information.

The Title Bar of the window will show whether editing or viewing of the database is being performed and the name of the current database.

The text in the top left corner provides information about the database. The top line gives the date and time the database was last edited. The next line states whether the current contents have been verified or not; and whether the database has been compressed or not.



**Figure 5: System Window**

The options *Bell System*, *Subsequent Alarm*, *Resound*, *Evac* and *Waterflow* all affect how the notification appliance circuits (NAC), hereafter referred to as bells, react to alarm conditions. *Bell System* is a drop down list for selecting how the bells and strobes will operate. This includes both the panel outputs and any control modules programmed for bell or strobe operation. This sets the base operation for the entire network. If coded bells are required, the bell codes are defined for each input individually.

The following options are available:

- **Alert:** A First Stage alarm activates the selected bells in Alert mode. If the *Signal Silence* or *Second Stage Inhibit* Hot Key is not pressed before the *[No Acknowledge] Second Stage Inhibit* timeout, the panel will progress to Second Stage. Second stage will activate all bells in Evacuation mode.
- **Evac:** A First Stage alarm will activate selected bells in Evacuation mode. Second Stage will activate all bells in Evacuation mode. There is no timeout from First to Second Stage.

- **Alert/Evac:** A First Stage alarm activates the selected bells in Evacuation mode and all other bells on the panel in Alert mode. If the *Signal Silence* or *Second Stage Inhibit* Hot Key is not pressed before the *[No Acknowledge] Second Stage Inhibit* timeout, the system will progress to Second Stage. Second Stage will activate all bells in Evacuation mode.
- **Staged:** The 1st alarm will activate selected bells in Alert mode. If the *Signal Silence* or *Second Stage Inhibit* Hot Key is not pressed before the *[No Acknowledge] Second Stage Inhibit* timeout, the selected bells are switched to Evacuation mode and the next bells, i.e. the ones with the next higher number, are activated in Alert mode. This sequence is repeated until all bells are in Evacuation mode. When the highest numbered bell circuit switches to Evacuation mode, all bell and strobe circuits on the panel will be turned on in Evacuation mode. For example, if the alarm activates Bells 1 and 4, after the *[No Acknowledge] Second Stage Inhibit* timeout, Bells 1 and 4 are switched to Evacuation mode and Bells 2 and 5 are set to Alert mode. A 2nd alarm will activate all bells in Evacuation mode. Bells must be assigned consecutive bells circuits with no Releasers assigned in between Bells. For example: circuits 1, 2, 3, 4 can be assigned as Bells but not circuits 1, 2, 4, 5 with circuit 3 a Releaser. Control modules cannot be programmed as bell or strobe if the Staged Bell system is used.

*Subsequent Alarm* controls how Alert, Evac and Alert/Evac type bell systems behave when a new alarm is received while one is still active. *1st Stage* has the panel repeat the First Stage operation. *2nd Stage* has the panel go immediately to Second Stage operation.

*Resound* controls how the panels handle the automatic resounding of silenced bells when a new alarm is received. There are two modes:

- **Local:** Each panel will resound only its own silenced bells when a new alarm is received. This would be used when panels in a network are in different buildings, such as a campus.
- **Global:** All panels in a network will resound silenced bells when a new alarm condition is received on any panel in the network. This is used when the panels are all in the same building, such as a large plant.

*Evac* controls whether the bell system Evacuation Mode sounds Steady (continuously) or uses a Temporal pattern as specified in ANSI S3.41 and ISO 8201 *Audible Emergency Evacuation Signal*. The pattern used ½s On, ½s Off, ½s On, ½s Off, ½s On, 1½s Off repeated.

*Waterflow* controls if bells can be silenced if they are started by a waterflow type input. If Non-Silenceable is chosen, bell circuits activated by a waterflow input cannot be silenced until the device has restored.

*Language* chooses English (default), French or Hungarian characters to be used in messages.

*Alarm List Sequence* controls which end of the Alarm List is shown automatically. If *First* is chosen, the first (oldest) item in the alarm list will be shown. If *Last* is chosen, the last (newest) item in the alarm list is shown. Regardless of order, alarms always take precedence in being shown. Another way to think of it is that *First* shows where the fire started while *Last* shows where the fire has gotten to.

*Disconnects* controls which panels the *Signal Disconnect*, *Relay Disconnect*, *Releaser Disconnect* and *Common Disconnect* hot keys affect.

- **Local:** The Disconnect hot keys affect only the panel they are on.
- **Global:** The Disconnect hot keys affect all the panels in the network. This means that if a Disconnect key is pressed on any panel, all panels in the system will be affected.

The *System Message* is a text entry box for defining a message used to identify the system. The message is three lines by twenty characters long. It is printed at the top of printouts and shown on some service terminal screens, but only seen on the LCD in the STATUS/IDENTIFICATION menu.

The *System Banner* is a 20 character message that is used as a banner for the Main Menu of the LCD. The default banner is "Modul-R by Secutron".

The *Enforce Local LED Rules* check box forces an LED on an input's panel be related. Normally an LED anywhere in the system is all that is required.



**Note:** The common LEDs of any panel are based upon the zone LEDs that are displayed by the panel, not based upon the inputs to the panel.

The *Allow Complex Releaser Definitions* check box enables extended functionality of releaser circuits and control modules programmed for releasing. This allows for Fast (no delay) operation of a releaser and for AND function using A and B side inputs to a releaser. See section 1.4 **Releaser Programming** for details.

The *Enforce Group Association checking* check box enables MHI to check to see if a group association has been included in the relates of inputs. This option must be enabled when using an MRDL Dialer.

The *Observe Daylight Savings Time* check box enables or disables the automatic changing of the clock for Daylight Savings Time. If enabled, the system will move 1 hour ahead the second Sunday of March and fall back 1 hour the first Sunday of November (North American dates).

The *Pre-alarm Buzzer*, when enabled, will cause a tone to sound when a smoke detector circuit is in the auto-verify process or an addressable device is in alarm during the *Retard* period. The tone used is a triple beep every second.

*Master ID* defines which panel in a network will act as the Master panel. Only control panels may be chosen as the Master panel. The Master panel synchronizes the date and time on all panels and annunciators at 3:30am everyday.

*Alarm List Mode* sets the way the Alarm List messages are displayed on fire panels in the system. Annunciators will always receive messages as marked in the database. There are three modes of displaying messages:

- **Local:** Each fire panel shows only Alarm List entries that are for that panel only.
- **Global:** Each fire panel shows Alarm List entries for itself and all other panels and leave their own annunciators.
- **Master:** The master fire panel shows the Alarm List entries for all panels and annunciators while all other fire panels show only their own Alarm List entries.

*Common Relays* controls what signals affect the common alarm, common supervisory and common trouble relays of each panel. The are two settings:

- **Local:** The common relays of a panel follow the events of events on that panel only.
- **follow Alarm List Mode:** The common relays of a panel will react to both events of the panel and any events listed in its Alarm List.

*Non-Latch Mode* controls if the panel will auto restore. The options are as follows

- **None:** Everything Latched
- **Trouble only:** Only trouble conditions will auto restore
- **Supv and Trbl:** Supervisory and Trouble conditions will automatically restore.



**Note:** Some troubles require user intervention before the panel can determine if the condition be restored

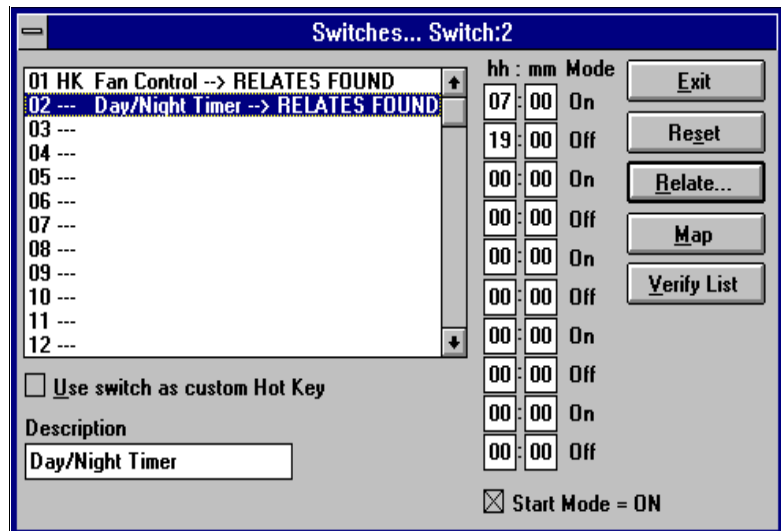
The System Window has the following push buttons on the right hand side:

- **Exit:** Closes the System Window and, if editing, saves the database. At this time, a requester will ask if the database should be Verified. A database has to verify without errors before it can be downloaded.
- **Panels:** Displays the Panel Window. If the system has no panels defined, the Add Panel Box is displayed to obtain the first control panel for the system.
- **Switches:** Displays the Switches Window. This window determines which devices are attached to the switches and the timers associated to each switch. See section 2.3 for the **Switches Window**.
- **Groups:** Displays the Groups Window. This window is used to define groups of relates. See section 2.4 for the **Groups Window**.
- **Map:** Displays and/or updates the Map Window. See section 2.8 **Map Window** of the *Modul-R Human Interface User Guide*.
- **Verify List:** Displays the Verify List. If there is no Verify List, a requester will appear asking whether you wish to perform a verification. See section **Verify** of the *Modul-R Human Interface User Guide* for a full description of the Verify List and its uses.
- **Settings:** Defines the Verify warnings to disable and/or errors to reduce to warnings for the current database. Not all warnings/errors can be disabled/reduced. The use of this is not recommended, but provided for special circumstances.

## 2.3 Switches Window

The Switches Window (see **Figure 6**) allows for the setting of the On/Off (Day/Night) switches. There are 16 system wide switches available. All panels in the network will keep track of their own portion of the devices related to each switch. Relays, LEDs and control modules will follow the On/Off state of the switch they are related to. Addressable sensors will use Day sensitivity while the switch is on and Night sensitivity while the switch is off. The timers are used to

have the switch change state at set times each day. Switches can also be operated manually at the panel. If the Switch is associated to a Hot Key, the Hot Key will then operate the switches. Changing a switch manually at one panel will affect all panels in the network.



**Figure 6: Switches Window**

- Note:**
1. Each addressable detector can only be related to a single switch.
  2. Relays, LEDs and control modules controlled by more than one switch will stay on as long as any switch operating them is on.

The title bar of the window will always list the currently highlighted switch. The *Switches* Table shows all 16 possible switches and highlights the current one. Select any one to make it the current switch. List entries will show the message RELATES FOUND for switches that have related devices.

The *HH:MM* (Timer) entries control the times that the switch will change state. An even number of times must be entered, i.e. each on must have a corresponding off. All times are entered using 24 hour notation, e.g.: one minute after midnight=0:01, noon=12:00, 3 PM=15:00, 4 AM=4:00, etc. A time of 0:00 is considered as not used. If an action at midnight is desired set the time to 0:01, one minute after midnight; or 23:59, a minute before midnight. MHI will sort the times into ascending order after the Switches Window is closed.

The *Start Mode - On* check box determines if the first time listed should turn the switch On or Off. If it is not checked, the first time turns the switch off. If it is checked, the first time turns the switch on. The on and off indication beside each time entry will change to reflect what each time in the sorted list will do.

*Use switch as Custom Hot Key* allows the switch to be manually controlled by the Hot Keys. A hot key can be assigned to turn the switch on and another to turn it off. These keys will be marked as HK in the Switches Table.

*Description* is a 20 character message that describes the Switch usage. This is useful in that the switch now has a description of its usage that is easier to understand when assigning Switches to Hot Keys.

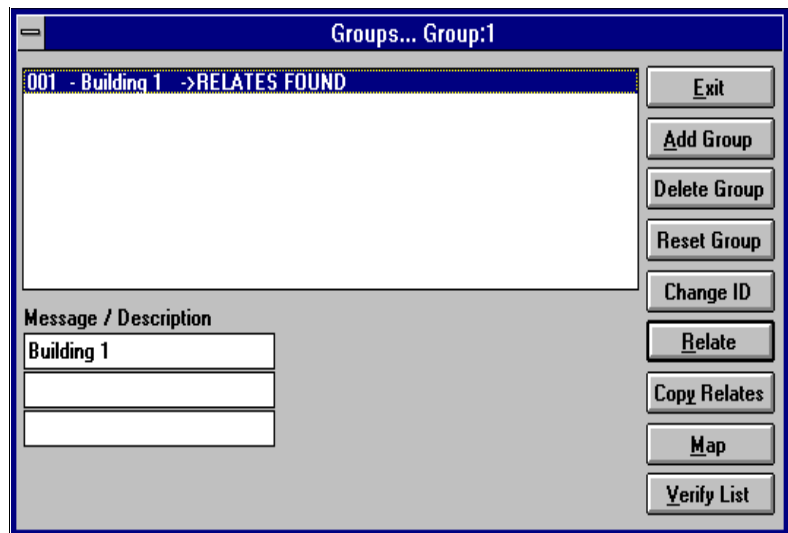
There are five push buttons on the right side:

- **Exit:** Close the Switches Window and return to the System Window.
- **Reset:** This will remove all relates and all times for the currently highlighted switch.
- **Relate:** Shows the Relate Window. Items marked *\*on\** will be operated/controlled by the switch.
- **Map:** Displays and/or updates the Map Window. See section 2.8 for **Map Window** of the *Modul-R Human Interface User Guide*.
- **Verify List:** Displays the Verify List. If there is no Verify List, a requester will appear asking whether you wish to perform a verification. See section 2.6.5 **Verify** of the *Modul-R Human Interface User Guide* for a full description of the Verify List and its uses.

## 2.4 Groups Window

The Groups Window (see **Figure 7**) is used for creating and editing the Groups of relates. The Title Bar will show the current group.

This dialog allows you to setup "Groups" which are composed of a text description/message and relates. Groups are a method of establishing zone representations. They are also used to program zone information for the Dialer (see the *Zone Data* section). A zone representation may include a message and/or a



**Figure 7: Groups Window**

group of Relates. Inputs (i.e. circuits and/or devices) may relate to a Group or number of Groups and thus acquire all Relates that are referenced by them. Inputs can also adopt a Group message. Making a change to a Group will affect all inputs (circuits and devices) related to the Group. This feature can significantly speed up the creation of medium to large size systems as well as simplify changes. Up to 250 groups may be defined.

The use of Groups greatly simplifies the changes made to a database. For example, if a new door is installed that has to be unlocked during a fire alarm, the control module that unlocks the door is simply added to a Group. This single change is then automatically picked up by any inputs that are related to the Group. Since this number could be hundreds, the use of the Groups makes databases easier to maintain and decreases the likelihood of mistakes when items are added.



**Note:** Though any relationship can be selected for inclusion into a group, an input that references the group must be able to accommodate the group's relates. For example, if a group includes relates to Bell or Strobe output, associating this group to a Supervisory type input will generate an error during verification because this type of input cannot operate Bells or Strobes. It may be advantageous to use separate groups in these cases.

The *Group List* shows all the defined groups along with their message (if any) and if there are any relates defined for the group. The current group will be highlighted. Use the <Backspace> key in order to quickly re-position the current selection to another group.

The *Message/Description* allows you to enter a message describing the Group. You are allowed space for 3 lines by 20 characters. If desired, this message may be adopted by a circuit or device by checking the *Use Grp Msg* check-box and specifying this Group ID.

The following push buttons are defined:

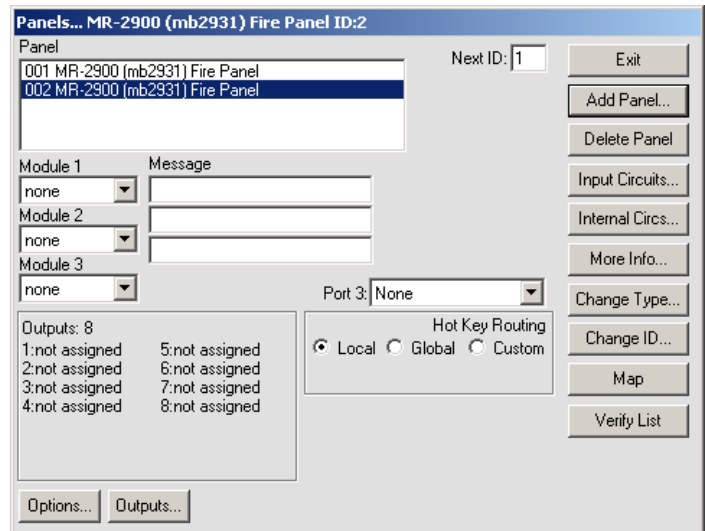
- **Exit:** Close the Groups Window and return to the previous window.
- **Add Group:** This defines a new group ID. The new group can have any number between 1 and 250. There is no need for the groups to be sequentially numbered or to start at 1.
- **Delete Group:** This will remove the group from the list. You will be asked if you want to have references to the group automatically removed.
- **Reset Group:** This will remove all relates for the currently highlighted group.
- **Change ID:** This allows the group ID to be changed. MHI will automatically change all references to use the new ID. A gauge will be displayed to show the progress of the change.
- **Relate:** Shows the Relate Window. Items marked *\*on\** will be operated by inputs related to the group.
- **Copy Relates:** Copies the relates and/or message from an input point to the current group (see **Figure 23**). The values of the panel, circuit and device are required. Most conventional circuits use a device number of 0 (zero). Press **Copy** to copy the information.
- **Map:** Displays and updates the Map Window. See section 2.8 **Map Window** of the *Modul-R Human Interface User Guide*.
- **Verify List:** Displays the Verify List. If there is no Verify List, you will be given the option to perform a verification. See section 2.6.5 **Verify** of the *Modul-R Human Interface User Guide*.

## 2.5 Panel Window

The Panel Window (see **Figure 8**) allows editing of all panel level options. It defines the hardware mounted in the panel and the functionality of the programmable outputs. The programming controls provided will change to reflect the capabilities of the currently selected panel. The Title Bar will describe the currently highlighted panel or annunciator.

The Panel Window has the following push buttons along the right side:

- **Exit:** Close the Panel Window and return to the System Window.
- **Add Panel:** Add another panel to the system. A dialog box will be displayed. The default options are to use the next available panel ID and to select an MR-2100, MR-2200, MR-2900



**Figure 8: Panel Window**

- **Delete:** Remove the current panel from the system. All programming for that panel will be lost. Any of the panel's outputs that are referenced will become invalid and will be removed by the next verify.
- **Input Circuits:** Display the Circuits Window. See section 2.6
- **Internal Circuits:** Display the Internal Circuit Window. See section 2.7.
- **More Info:** This displays a dialog box listing basic information about the panel including the date the database was last downloaded into a panel, the number of times downloaded, etc.
- **Change Type:** Displays a dialog box to change the type of the current panel. This makes it easier to correct mistakes when creating a database and to update the database if a panel type is changed in the field. Only certain type changes are allowed.



**Note:** This can have far reaching effects on a system. Any information that is no longer valid with the new panel type will be lost

- **Change ID:** Displays a dialog box for changing the ID of the current panel. MHI will automatically change all references to use the new ID. This process could take a long time for a large database. A gauge will be displayed to show the progress of the change.
- **Map:** Displays and/or updates the Map Window. See section 2.8 **Map Window** of the *Modul-R Human Interface User Guide*.
- **Verify List:** Displays the Verify List. If there is no Verify List, you will be given the option to perform a verification. See section 2.6.5 **Verify** of the *Modul-R Human Interface User Guide*.

The *Panel List* is located in the top left corner of the window. It lists all the panels, both Control and Annunciator, that are defined in the system. The highlighted entry in the List is the one that is currently being edited. Its description is also shown in the title bar of the Panel Window. If a different panel is selected, all the controls in the window will change to reflect this. Use the <Backspace> key in order to quickly re-position the current selection to another panel.

The *Message* is located below the Panel List. This is a 3 line by 20 character message that is associated with the Panel. This message will be displayed in Alarm Lists with signals that are generated by this panel. It will also be included in any print-outs generated by the Master Panel of the system. This message should include enough information that it will identify the panel and its location to fire or service personnel.

The *Outputs* area lists the function of the outputs of the panel. Use the **Outputs** Button to show the Outputs Dialog (see the **Outputs Dialog** section) which allows for the programming of the Outputs and the relays.

The **Options** button displays the Options Dialog (see the **Options Dialog** section). This allows for the programming of the various panel options, such as Hot Keys, bell timers, etc.

The *Next ID* is located to the left of the push buttons at the top of the Panel Window. It is not displayed for single panel systems. It is used to define the ID of the next panel in the network loop. Specify the panel ID of the panel to be connected to the COM 1 terminals of the current panel. See *Links* for notes on programming systems that contain *single-port* MR-2934 or MR-2924 Annunciators.

*Links* is used to enter the IDs of single port annunciators that are connected to COM 1 of the MR-2900 panel. These annunciators do not reside in the network loop, but are branches off of it.

*Port 3* sets the purpose of the Port 3 general communications port. If the operating program loaded does not support the selected setting, a *wrong port 3 program* trouble will be generated by the panel. The options are:

- **none:** Port 3 is not used.
- **Digital Protocol 1:** Sets Port 3 to use the old protocol to the SE 2000.
- **Digital Protocol 2:** Sets Port 3 to use the new protocol to the SE 2000.
- **PC Connect:** Sets Port 3 to use the GRID program interface.
- **Voice Evac. System:** Sets Port 3 to communicate with the MV-2700 voice evacuation panel.
- **Annunciator Connect:** Sets Port 3 to communicate with the Dialer, MR-2614 or MR-2644 annunciators, or city tie module.

*Local Ann. LED Cnt* will be shown if any MR-2614 annunciators are chosen in the IDs Supervised dialog.

The **IDs Supervised** button displays all possible IDs of the MR-2614 and MR-2644 annunciators (see **Figure 9**) as well as the MR-2801B-MR and MRDL. Check the IDs that will be connected to the system. When the MRDL is enabled, a button will appear next to that option called **Dialer Settings** (see the section on Dialer Options for a description of the dialer options).

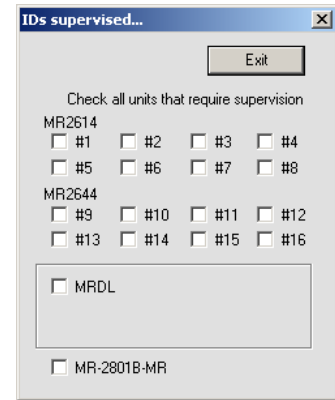
*Hot Key Routing* is a set of radio buttons for setting the other panels or annunciators to be controlled by the current panel. To have no other panels affected by the current panel, mark *Local*. To have the current panel affect all other panels on the network, mark *Global*. To choose only some panels, mark *Custom*. A text entry box entitled *route panel ids* is then displayed. Enter the panel IDs to be controlled separated by commas, e.g. "2, 3, 4". Each ID listed will receive Hot Key commands from the current panel whenever its Hot Keys are pressed.

Annunciators have the following unique controls for programming (see **Figure 10**).

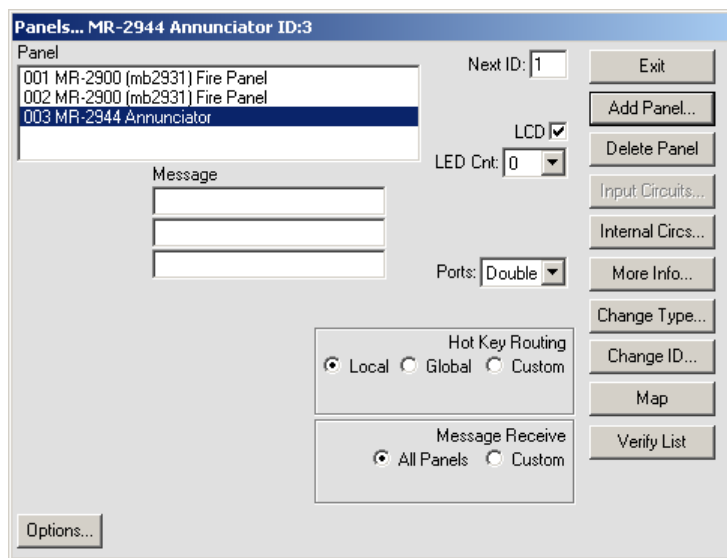
The *LCD* check box is located immediately left of the buttons. It indicates whether or not the annunciator has an alphanumeric LCD. This setting is used by MHI only to determine if the *Message Receive* check box should be shown for the annunciator in the Relate Window. This value is not sent to the annunciator.

*LED Count* is located directly below the LCD check box. This defines the number of LED zones the annunciator will be using. A count of zero will disable the Hot LEDs and Common LED.

*Hot LED* is located directly below the LED Count drop down. This value defines the first of four LED zones the annunciator will use for internal functions. Any of the zones can be chosen with the requirement that there are four consecutive zones available. Entering a zone of 0 will disable the hot key zones. These will reflect the current status of the annunciator and the panel(s) it sends commands to.



**Figure 9: IDs Supervised**



**Figure 10: Annunciator Panel Window**

The LEDs have the following meaning when flashing:

Zone n alarm: <i>Acknowledge</i> available	Zone n+2 alarm: <i>2nd Stage Inhibit</i> available
Zone n supervisory: <i>Reset</i> available (green)	Zone n+2 supervisory Future use
Zone n trouble: <i>Reset</i> available (yellow)	Zone n+2 trouble Future use
Zone n+1 alarm: <i>Signal Silence</i> active	Zone n+3 alarm Future use
Zone n+1 supervisory: <i>Signal Silence</i> available	Zone n+3 supervisory Future use
Zone n+1 trouble: <i>2nd Stage Inhibit</i> active	Zone n+3 trouble Power On



**Note:** The Power On LED refers to the 24 VDC to the annunciator, not to any AC source.

*Message Receive* is a group of a radio buttons for setting which panels this annunciator will display messages for. If all panels are chosen, every message in the system is displayed. If custom is selected, then all messages from the listed panels will be displayed.

*Common LED* is located directly below the Hot LED setting. This is the LED zone the annunciator will use for common alarm, supervisory and trouble indication. It is a summation of the zone LEDs of the annunciator. Any LED zone may be used. The zone chosen will not be available for general annunciation. Entering a zone of 0 will disable the common zone.

*Ports* is located below the Common LED setting. It is not displayed for MR-2914 Annunciators. This option enables (double) or disables (single) the COM 1 network port. If both ports are enabled, the *Next ID* text box will become available (see above for a description of *Next ID*).

**In all MR-2900 panels**

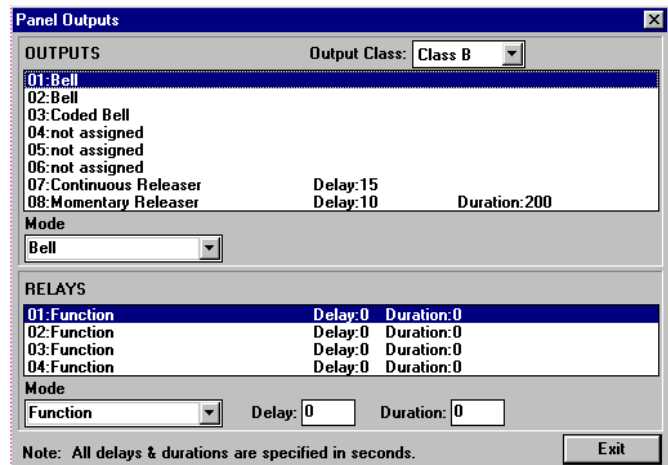
**Internal Circuit 98 (common ground) must relate to LED #24 on the panel as a ground fault indicator and a label must be implemented. The MR-2614 LED Annunciator does not have a ground fault indicator. Internal circuit 98 of panel associated with this annunciator must be setup to map ground to LED #32 and a label must be used to indicate ground. See section 2.7 Internal Circuits.**

**Outputs Dialog**

The Outputs Dialog (see **Figure 11**) allows for the programming of the panel's outputs and function relays.

The *Outputs* section is a list box that is used to select the output to program. Once the output is selected, it is programmable for the following output types:

- **Bell:** This is a standard signalling circuit. It sounds in Alert or Evacuation mode as required. It does not sound codes.
- **Strobe:** This signalling circuit for use with strobes. They are non-silenceable and will be turned on continuously for both Alert and Evacuation mode operation. Strobe circuits cannot be silenced until the system is reset (unless the Strobe Duration timer is programmed – see the *Options Dialog* section for *Strobe Duration*).



**Figure 11: Output Dialog**

- **Coded Bell:** This signalling circuit will sound out the code for any input that operates it and then silence. It does not sound in Alert or Evacuation mode.
  - **Continuous Releaser (C. Releaser):** This type of releaser remains on until an alarm is received on a zone activating the releaser. The releaser is then turned off after the *Delay* until the panel is reset. The *Delay* can be from 0 to 180 seconds. **Warning:** Continuous releasers are also turned off when there is an AC power fail or when the panel is in its power up cycle.
  - **Momentary Releaser (M. Releaser):** This type of releaser is inactive until an alarm is received on a zone activating the releaser. The releaser is then not activated until after the *Delay* time. The releaser is turned off after the *Duration* time, or the activating zone and panel are reset. Momentary releasers function normally during an AC power fail. The *Delay* can be from 0 to 180 seconds and the *Duration* can be up to 1800 seconds. 1800 seconds is 30 minutes. A *Duration* of zero (0) will cause the releaser to stay on until it is reset.



**Note:** Releaser type circuits can only be activated by inputs on the same panel.

- **Auxiliary Power (AuxPwr):** This turns on the Output continuously to supply power for auxiliary devices, such as annunciators. If a *Duration* time is given for the Auxiliary Power circuit, the circuit will be powered off for that number of seconds (from 1 to 30) when the panel *Reset* key is pressed with neither of its LEDs flashing. This allows for the reset of 4 wire detectors. A duration time of 0 prevents this operation. Auxiliary Power circuits will be turned off by the panel while it is in its power up cycle.
- **Follow Supervisory (follow Supv):** The output will sound when there is any supervisory condition present on the panel. Pressing *Acknowledge* will silence the circuit.
- **Follow Trouble (follow Trbl):** The output will sound when there is any trouble condition present on the panel. Pressing *Acknowledge* will silence the circuit.
- **Follow Supervisory and Trouble (follow Supv and Trbl):** This output will sound when there is a supervisory condition and/or a trouble condition on the panel. Pressing *Acknowledge* will silence the circuit.

The *Output Class* drop down box is for MR-2900 (mb2931) and MR-2900 (mb2921) panels only. This selects whether there are eight Class B outputs (MR-2926 Terminal Board) or four Class A outputs (MR-2925 Terminal Board).

*Relay Delay* is the times that the relay waits before activating. A delay of 0 causes instant operation. This can be from 0 to 60 seconds.

*Relay Duration* affects the time the relay is activated. For relays operated from inputs, it is the *minimum* time the relay will operate. The relay must stay on for this length of time before it can be reset. This is for equipment that must remain off a length of time before it can be started up again. If no input operates the relay, it is available for the reset of 4 wire devices. If the duration is not 0 (zero), then the relay will activate for the duration time when the *Reset* hot key is pressed with neither of its LEDs flashing. The duration can be from 0 to 300 seconds (5 minutes).

## Options Dialog

The Options Dialog (see **Figure 12**) allows for the programming of the panel and annunciator options. These settings will affect the current panel only.

*Buzzer Mode* sets when the panel buzzer will sound. *Normal* causes the buzzer to sound for supervisory and trouble conditions. *All* causes the buzzer to sound for all conditions.

MR-2934 Annunciators always use *All*. To meet NFPA 72 requirements, section 1-5.4.7 you must choose *All*.

*Bypass Priv.* sets the privilege level required to set circuit and device bypasses, and manual control of relays, control modules and switches. This privilege can be set to Level 2 (default) or Level 1.

*Disconnect* sets the privilege level required for the Disconnect and Test Mode Hot Keys. These can be set to Level 1 (default) or Level 0. If Level 0 is chosen, the Disconnect Hot Keys can be operated without a passcode being entered into the panel.

*Banner Mode* dictates what the top line of the Main Menu of the LCD will be. There are four modes of operation:

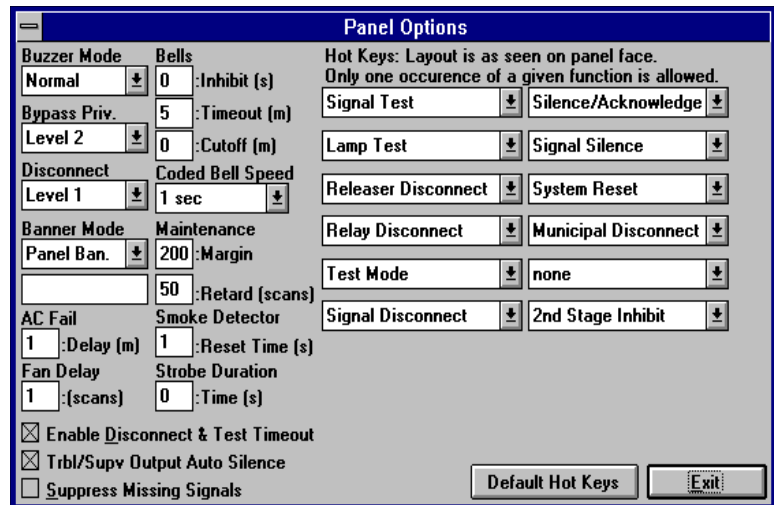
- **Status Ind.:** This mode displays the lines SYSTEM NORMAL and SYSTEM OFF NORMAL.
- **Panel Ban.:** This mode displays the 20 characters of text entered into the text box that appears below the drop down while this mode is selected.
- **System Ban.:** This mode displays the text defined by the System Banner.
- **Equip. Desc.:** This mode allows the panel to display its own identification text.

The *Remote AC Fail* is the delay before the panel will report that it has lost AC power to a remote monitoring location. The panel will report AC Fail locally after 60s. The panel itself will go into AC Fail mode to conserve power immediately upon losing AC. This delay is the length of time before the panel generates the trouble condition. This can be set from 0 to 1800 minutes (30 hours). If a time of 0 minutes is entered, the panel will use a 10 second delay.

*Fan Delay* sets the number of scans between the reset of each Control Module (relay) on an addressable circuit. This allows for the staggered restart of fans when the system is reset. This option can be enabled or disabled on each addressable circuit as required. It has no affect on Control Modules (supervising).

*Bell Inhibit* is the length of time the bells must sound before they can be silenced. This time can be from 0 to 120 seconds. Coded bells will always sound out their complete code and then stop.

*Bell Timeout* is the length of time the panel will stay in First Stage operation before automatically progressing to Second Stage. This can be set from 2 to 10 minutes. Most codes do not allow this time to exceed 5 minutes. Check with local codes and the authority having jurisdiction for the allowable limits for this time. Both the *Second Stage Inhibit* and *Signal Silence* will prevent this timeout from occurring.



**Figure 12: Options Dialog**

*Bell Cutoff* is the length of time the bells will sound before they are automatically silenced by the panel. A time of 0 disables this feature. The cutoff can be set from 5 to 30 minutes. If the cutoff is used, it must be longer than the *Bell Timeout*.

*Coded Bell Speed* sets the time interval between the bits of the codes. This speed can be 1,  $\frac{3}{4}$ ,  $\frac{1}{2}$  or  $\frac{1}{4}$  second. The time between digits is three times this speed. The time between rounds is seven times this speed.

*Maintenance Margin* sets the gap between the maintenance threshold and the alarm threshold for addressable sensors. If the sensor stays between these two values for the *Maintenance Retard* time, the panel will report a Maintenance Alert trouble for the sensor. The margin can be set from 0 to 500, with 0 giving no warning and 500 giving the earliest warning.

*Maintenance Retard* is the number of consecutive scans the addressable sensor has to stay between the maintenance and alarm thresholds to generate the Maintenance Alert trouble. This retard can be from 5 to 50 scans. Scan time can vary from 2.5 to 5 seconds with usual values from 3.5 to 4 seconds.

*Smoke Detector Reset Time* sets the time the MR-2900 will power off conventional 2-wire smoke detectors to reset them. This time can be from 1 to 20 seconds. Current smoke detectors only need the default value of 1 second. Older smoke detectors may need a longer time to reset.

*Strobe Duration Time* sets the time that strobe circuits will operate when activated when operated along with coded bells. The timer starts when the coded bells start. At the end of the timer, the strobes are silenced. A time of 0 (zero) disables the automatic silence. This value can be from 10 to 510 seconds.

*Enable Disconnect & Test Timeout* enables or disables disconnect timeouts. If the timeouts are disabled, *Relay Disconnect*, *Releaser Disconnect*, *Signal Disconnect*, *Common Disconnect* and *Test Mode* must all be manually ended. If enabled, these functions will be automatically ended after four hours.

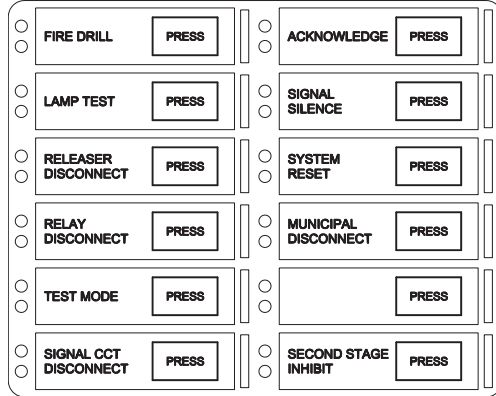
*Trbl/Supv Output Auto Silence* enables or disables the automatic silencing of the Follow Trouble and Follow Supervisory outputs during a fire condition. If enabled, the Follow Trouble and Follow Supervisory outputs will automatically sound again once the fire bells and strobes have been silenced.

*Suppress Missing Signals* allows for the suppression of device missing signals for a loop that has a short or ground fault condition. If enabled, the panel will only report the short or ground fault condition, but not the missing device messages.

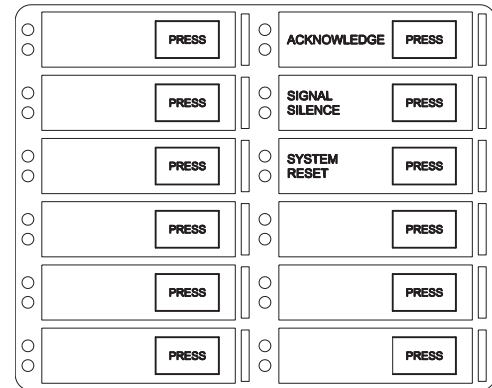


**Note:** This feature requires that the BRK program be dated 9 September 1999 or later (version 17.20 or later).

*Hot Keys* are a set of drop down boxes that control the functions of the operator keys on the front of the panel. There are 12 keys, each with yellow and green LED (some keys may have red instead of yellow LEDs). The LEDs are used to display function status. There are fixed placement function keys as shown in **Figure 14**. The default layout is shown in **Figure 13**. The panel will beep once when a valid key is pressed and beep three times if an invalid (unavailable) key is pressed. The panel will record every key press in the history.



**Figure 13: Default Key Assignments**



**Figure 14: Fixed Key Assignments**

The keys and their functions are as follows:

Key	Action
Acknowledge	Silences the buzzer and acknowledges new troubles and alarms. If the buzzer is on, <i>Acknowledge</i> will silence it. If the buzzer is not on, any flashing LEDs will become steady. The green LED will flash when there is something to acknowledge.
Signal Silence	Silences the bells. The green LED will flash when <i>Signal Silence</i> is available. There may be a silence inhibit before the bells can be silenced if they are activated by an Alarm condition. The yellow LED flashes when the bells have been silenced. The bells will reactivate if a subsequent Alarm is received by the panel. In network environment signal silence inhibit must be the same in all the panels (30 sec for a Canada).
System Reset	<p><i>System Reset</i> resets part or all of the system.</p> <ul style="list-style-type: none"> <li>The green LED flashes when the system, or part of the system, can be reset.</li> <li>The yellow LED flashes when there are conventional smoke detector circuits in alarm, or there is a ground fault.</li> </ul> <p>Press <i>System Reset</i> to reset the smoke detectors. The yellow LED also flashes if the ground fault relay is activated. Press <i>System Reset</i> to deactivate the ground fault relay to check for restores and additional ground faults. If ground faults remain, the relay will be re-activated after 5 to 30 seconds.</p> <p>Pressing <i>System Reset</i> with no LEDs flashing will operate any relays that are not used by the system and deactivate any Aux Power outputs. The time they remain open is determined by the Duration time programmed. If the Duration is 0, the relay or Aux Power output will not operate.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>The system <u>cannot</u> be reset until all circuits and devices are reset.</li> <li>If both LEDs are flashing, the green LED function has precedence.</li> <li>The green LED will remain flashing after <i>System Reset</i> is pressed until addressable devices have had their LEDs reset.</li> </ol>

Key	Action
Second Stage Inhibit	Prevents the automatic operation of second stage operation. This applies only to panels with ALERT/EVAC or STAGED type bell systems. For ALERT/EVAC systems, pressing the <i>Second Stage Inhibit</i> will prevent the panel from going into second stage. For STAGED systems, it will prevent the system from going to the next stage. <i>Second Stage Inhibit</i> has no effect on an EVAC type bell system. The green LED will flash when <i>Second Stage Inhibit</i> is available, and the yellow LED will flash when it has been activated.
Fire Drill	Activates all the bell circuits, both regular and coded, in Alert mode. Press a second time to have all bell circuits sound in Evacuation mode. Press a third time to end the Fire Drill. The yellow LED will flash while the Fire Drill is happening. The Fire Drill cannot be performed if the bells are already activated, or if AC power is off. The Fire Drill is automatically ended if an alarm condition occurs.
Lamp Test	Flashes the panel LEDs in sequence starting with the zone alarm LEDs. Press Lamp Test repeatedly to cycle through the zone supervisory LEDs, zone trouble LEDs, system LEDs, and Lamp Test Off.
Relay Disconnect	Causes the function relays and control modules (relays) to ignore any new alarms. Press again to restore normal operation. The yellow LED will flash while active. If no relays nor control modules can be disconnected, <i>Relay Disconnect</i> will do nothing. This function can be set to Privilege Level 0 or 1.
Test Mode	<p>Places panel into test mode. Press again to return to normal mode. The yellow LED will flash while in test mode. This function can be set to Privilege Level 0 or 1. It follows the Disconnect privilege level (set in MHI). During test mode, the remote annunciator zone LEDs becomes non-latching for the zone(s) under test. The common indicators, bells, relays and releasers are not activated and no commands are sent to other units and no signal is sent out of Port 3. Test signals can be archived or not as required.</p> <p>Before beginning testing, the circuits/devices to be tested must be selected. All unselected circuits/devices will operate normally. Be sure that the panel is in test mode. To select circuits/devices, select PROGRAM from the Main Menu on the LCD. The arrow keys move the cursor and the &lt;Enter&gt; key selects the item. Then select ADDRESSABLE or CONVENTIONAL. Then select TEST. For conventional circuits, each zone will then be presented in turn for selection. Select either TEST or NORMAL. For addressable devices, enter the device circuit and address for each device to be tested. Entering a circuit number by itself will choose all devices on that circuit.&lt;Clear&gt; will return to the previous menu. While in Test Mode, any conventional smoke detectors activated on the test circuits will be automatically reset after 30 seconds.</p> <p>When test mode is ended, all zones and devices selected for testing automatically return to normal operation.</p> <p><b>Note:</b> There is no Ground Fault isolation while Test Mode is active.</p>
Signal Disconnect	Disables sounding of the bells. The buzzer beeps every 2 seconds while the bells are disabled. This beeping is suppressed while a privileged level is entered in the panel. Press <i>Signal Disconnect</i> again to re-enable the bells. The yellow LED will flash while the bells are disabled. <i>Signal Disconnect</i> is not available if the bells are already activated. This function can be set to Privilege Level 0 or 1.

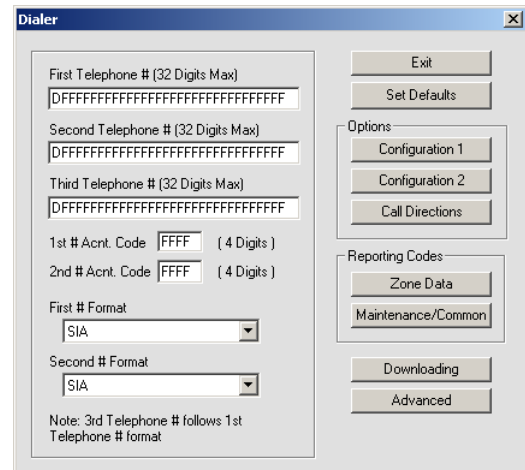
Key	Action
Common Disconnect	Disables the relays or a City Tie Module (MRCTYB). When a MRCTYB module is disconnected, a trouble will be reported to the city and then any subsequent signals will not be reported until the card is re-enabled. When the relays are disabled, the yellow LED flashes. If no relays are selected for disabling, <i>Common Disconnect</i> is unavailable. This function can be set to Privilege Level 0 or 1.
General Alarm	Initiates the general evacuation sequence. All bells are activated in Evacuation mode, selected function relays are activated and selected releaser circuits are activated and municipal alarm relay is activated. The red LED will flash when activated. Press <i>System Reset</i> to cancel the General Alarm. <b>Note:</b> General Alarm is recorded in the panel archive.
Halt	Stops the operation of all releaser type outputs on the panel. The green LED flashes when the key is available and the yellow LED flashes when it has been pressed.
Switch <i>n</i> On	Change the state of the software switch <i>n</i> between Auto and On. The yellow LED will flash while the switch is forced On. The green LED will flash whenever the switch is on, either automatically or forced. Switches can affect relays, control modules and LEDs. This function can be set to Privilege Level 1 or 2.
Switch <i>n</i> Off	Change the state of the software switch <i>n</i> between Auto and Off. The yellow LED will flash while the switch is forced Off. The green LED will flash whenever the switch is off, either automatically or forced. Switches can affect relays, control modules and LEDs. This function can be set to Privilege Level 1 or 2.
Manual Restart	This will cause the programmed control modules to reset after the system has been reset in general. This is an MEA (New York City) requirement.

**Dialer Settings**

The Dialer Settings dialog (see **Figure 15**) allows for the programming of various communications options.

The *1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Telephone Numbers* can be up to 32 digits. Special digits may be used to perform the following functions:

- HEX (B)-simulates the [\*] key
- HEX (C)-simulates the [#] key
- HEX (D)-forces the panel to search for dial tone
- HEX (E)-forces the panel to pause for 2 seconds
- HEX (F)-end of telephone number marker



**Figure 15: Dialer Settings**

The *1<sup>st</sup> and 2<sup>nd</sup> Account Codes* identify the system to the central station when a communication is sent. The code can be programmed for up to four digits. The first and third telephone number transmit the first account code. The second telephone number transmits the second account code.



**Note:** 1. The accounts. refer to central stations, telephone lines both accounts. Can use both telephone lines.  
2. The third telephone number is the backup number for the first telephone number.

The *1<sup>st</sup> and 2<sup>nd</sup> Format* setting affects the type of communication that the dialer sends to the central station. There are seven formats available including Contact ID, SIA and a pager format.

The Dialer Settings window has the following push buttons along the right side:

- **Exit:** Close the Dialer Settings window and return to the IDs window.
- **Configuration 1:** Display the Dialer Configuration 1 screen.
- **Configuration 2:** Display the Dialer Configuration 2 screen.
- **Zone Data:** Display the Zone Data screen.
- **Maintenance/Common:** Display the Dialer Maintenance and Common Reporting Codes screen.

### Dialer Configuration 1

The *Dialer Configuration 1* dialog (see **Figure 16**) contains the First Communicator Options, Second Communicator Options and International Options.

The *Communications* option determines if the dialer will communicate to the central station. When Enabled is selected, the dialer will communicate all events as programmed. When Disabled is selected, the dialer will not communicate any events.

The *TLM One/Two Check* options determine whether the dialer will test for telephone line faults on line one and line two respectively.

The *Third Phone #* can be programmed for two different modes of operation. When Alternate Dialing Enabled is selected, the dialer switches between the first and third numbers after each dialing attempt, until the maximum number of dialing attempts have been made to each number. When Third Number Backup is enabled, the dialer will use the third number only if all attempts to communicate to the first number fail. If all attempts to communicate to the third number also fail, a failure to communicate trouble will be generated. When Disabled is selected, the third telephone number is not used.

The *Dialing* option has three different options for pulse or DTMF dialing. If All attempts Pulse is selected, the dialer will always use pulse (rotary) dialing. If All attempts DTMF Dialing is selected, the dialer will always use DTMF dialing. If 4 attempts DTMF then Pulse is selected, the dialer will use DTMF dialing for the first four attempts. If unsuccessful, the dialer will switch to pulse dialing for the remaining attempts.

The *SIA Rep. Codes* option determines whether the dialer will send automatic reporting codes, or use the reporting codes that are programmed in the *Zone Data* and *Maintenance/Common* reporting codes sections. See Appendix D for a list of the automatic SIA Reporting Codes.

**Figure 16: Dialer Configuration 1**

The *SIA Max Events* option sets the maximum number of events the dialer will send for one SIA transmission. When 20 per Round is selected, SIA sends a maximum of 20 events per round. When 8 per Round is selected, SIA sends maximum of 8 events per round.

The *Contact ID Rep. Codes* option determines whether the dialer will send automatic reporting codes, or use the values that are programmed in the Zone Data and Maintenance/Common reporting codes sections. See Appendix D for a list of the automatic Contact ID Reporting Codes.

The *Test Transmission Line* option determines how the dialer chooses a telephone line to send the automatic test transmission. If Alternate is selected, the dialer will alternate between using lines 1 and 2 for transmissions, regardless of telephone line troubles. If Available is selected, the dialer will use Line 1 for test transmissions. If a trouble exists on Line 1, the dialer will switch to Line 2.

When the *Force Dialing* option is set to enabled, if the first attempt by the panel to call the monitoring station fails, on every subsequent attempt the panel will dial regardless of the presence of dial tone. When Disabled is selected, the panel will not dial the programmed telephone number if dial tone is not present.

When the *Busy Tone Detection* option is enabled, if busy tone is detected, the dialer will disengage the phone line and try to place the call again following the delay between dialing attempts. When Disabled is selected, the dialer will use the standard dialing procedure for every attempt.

The *Pulse Make/Break Ratio* option is for panels in international applications. When 40/60 is selected, the pulse dialing make/break ratio is the 40/60, and when 33/67 is selected it is 33/67.

The *Handshake* option determines the handshake used for BPS transmissions. When 1600 Hz is selected, the dialer responds to a 1600 Hz handshake. When Standard is selected, the dialer responds to the handshake designated by the format selected (1400 or 2300 Hz).

The *ID Tone* can be set to 1300Hz or 2100 Hz. The panel will emit a tone at the selected frequency for 500 ms every 2 seconds when it places a call to indicate that it is a digital equipment call, not voice. When Disabled is selected, this feature will not be used.

### Dialer Configuration 2

The Dialer Configuration 2 screen (see **Figure 17**) contains the Swinger Shutdown Variables, Other Options and Test Transmission options.

The *Swinger Shutdown* options determine the maximum number of zone and trouble events that the dialer will transmit in one day. The alarm or trouble will still be displayed on the panel and logged in the archive, but the dialer will not transmit the event. There are individual counters for Zone Alarm and Restore, Zone Supervisory and Restore, Zone Trouble and Restore and Maintenance Trouble and Restore. This feature will be reset at midnight. To disable the feature, program 000.

The *Test Transmission Time of Day* determines when the automatic test transmission will occur. The entry is four digits (HH:MM). To disable the feature, program the time as [9999].

The screenshot shows the 'Dialer Configuration 2' window with the following settings:

Swinger Shutdown Variables		
Zone Alarm/Restore	000	[ Valid Entries are 000-255 ]
Zone Supervisory/Restore	000	
Zone Trouble/Restore	000	
Maintenance Trouble/Restore	000	
Test Transmission		
Test Transmission Time of Day	9999	[ Valid entries are 0000-2359, 9999 to disable ]
Test Transmission Cycle	001	[ Daily ]
Other Options		
TLM Trouble Delay	003	[ Valid entries are 001-255 (x10) seconds ]
Max. Dialing Attempts to Each Telephone #	005	[ Valid entries are 005-010 attempts ]
Post Dial Wait for Handshake (all formats)	040	[ Valid entries are 001-255 seconds ]

**Figure 17: Dialer Configuration 2**

The *Test Transmission Cycle* determines the number of days between test transmissions. This is automatically set so that tests are performed daily and may not be varied.



**Note:** If an upgraded database has a value other than 1, choose Set Default to reset the value.

The *TLM Trouble Delay* controls the number of telephone line monitoring checks required before a telephone line trouble is generated. The dialer checks the telephone connection at 10-second intervals.

The *Maximum Dialing Attempts to Each Phone Number* is the number of attempts that the dialer will make to each telephone number before generating a fail to communicate trouble. The default setting is 5 attempts.

*Post Dial Wait for Handshake* is the amount of time the dialer will wait for a valid initial handshake from the receiver after dialing the programmed telephone number.

#### Call Directions

The *Call Directions* dialog (see **Figure 18**) contains the options that determine which telephone numbers will be used to communicate events.

There are five different types of events that can each be sent to telephone number one or telephone number two. The event types are Fire Zone Alarm/Restore, Supervisory Zone Alarm/Restore, Zone Trouble/Restore, Maintenance Trouble/Restore and Test Transmissions.

Communicator Call Directions	1st Telephone #	2nd Telephone #
Fire Zone Alarm/Restore	ON	OFF
Supervisory Zone Alarm/Restore	ON	OFF
Zone Trouble/Restore	ON	OFF
Maintenance Trouble/Restore	ON	OFF
Test Transmission	ON	OFF

**Figure 18: Call Directions**

#### Zone Data

The *Zone Data* dialog (see **Figure 19**) contains zone definitions and reporting codes that the dialer will use to communicate events.



**Note:** Normally these values can be left as default. Change only if necessary.

The *Groups List* is a list of all currently defined groups. Each line entry includes the Group ID and its message/description. Click on the desired group in order to program it.

The *Definition* specifies the identifier of the alarm or trouble being sent to the central station. The zone types that are available are Fire, Sprinkler, Heat, Water and Untyped.

The *Reporting Codes* are used when SIA or Contact ID is set to Programmed, or when using BPS formats. There are six reporting codes for each group. They are:

- Zone Alarm Reporting Code
- Zone Alarm Restoral Reporting Code
- Trouble Reporting Code
- Trouble Restoral Reporting Code
- Supervisory Reporting Code
- Supervisory Restoral Reporting Code

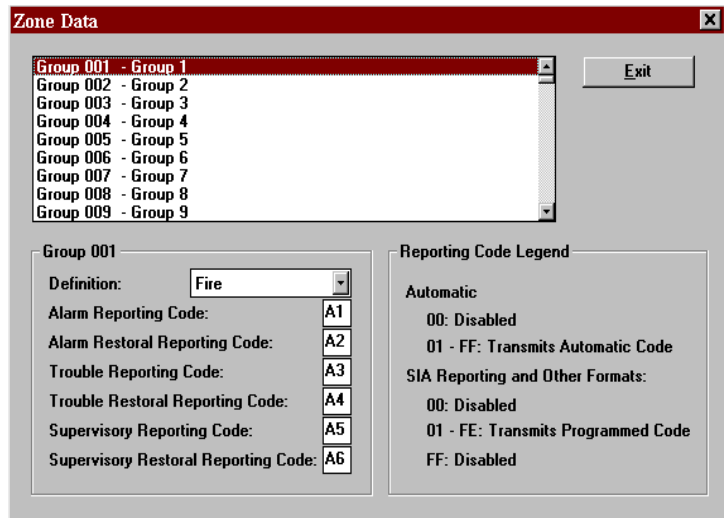


Figure 19: Zone Data

The *Dialer Maintenance and Common Reporting Codes* dialog (see **Figure 20**) contains maintenance and common reporting codes that the dialer will use to communicate those events.

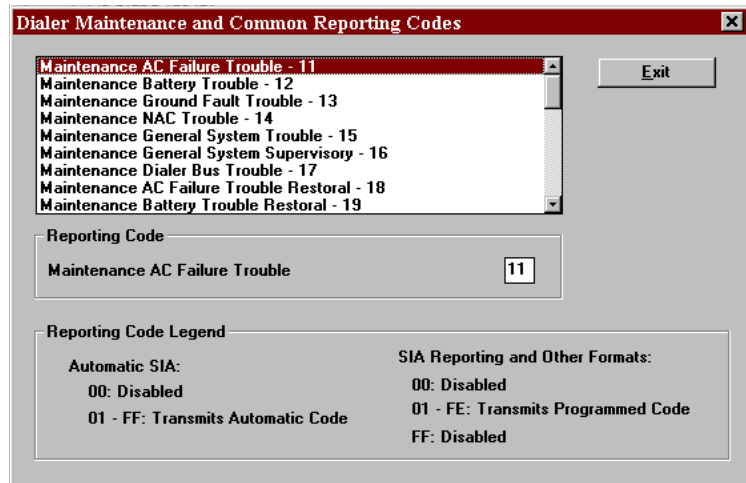


Figure 20: Circuits Window



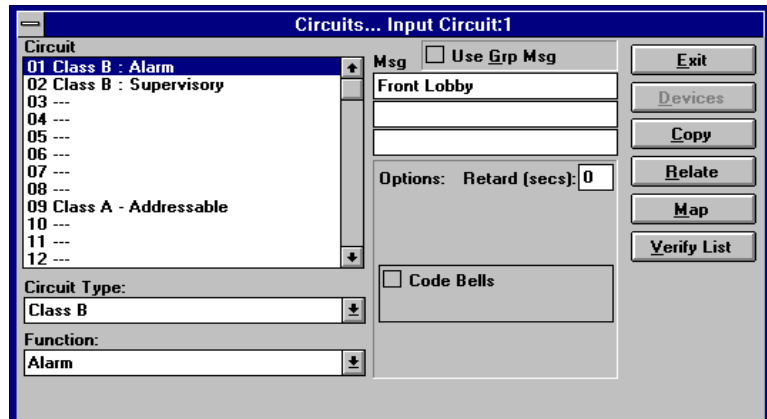
**Note:** Normally these values can be left as default. Change only if necessary.

The *Reporting Codes List* is a list of all available maintenance and common reporting codes. Select one to program its reporting code.

The Reporting Codes are used when SIA or Contact ID is set to Programmed, or when using BPS formats. There are many different reporting codes in this group.

## 2.6 Circuits and Devices Windows

The Circuits Window (see **Figure 21**) allows for the defining of conventional and addressable input circuits. The Devices Window (see **Figure 22**) allows for the defining of addressable devices, and for the smoke and contact type inputs of the Smoke Detector + N/O Contact Device circuit. These two windows are nearly identical. Most controls on one are found on the other with the few exceptions noted. The current Circuit or Device is shown in the Title Bar of the window.

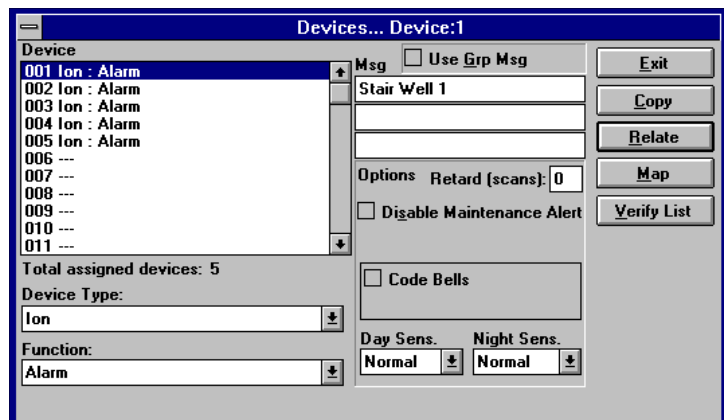


**Figure 21: Circuits Window**

The *Circuit List* is located in the top left corner of the window. It is shown on the Circuits Window only. This lists any defined circuits for the current panel. Each circuit shows the circuit number, type of circuit and function if applicable. The highlighted circuit is described in the title bar of the Circuits Window. Unused circuits are shown using three dashes. Use the <Backspace> key in order to quickly re-position the current selection to another circuit. The <Up> and <Down> Arrow keys change the current circuit. The <Right> and <Left> Arrow keys will change the type of the current circuit. The <Plus> and <Minus> keys will change the function of the current circuit.

The *Circuit Type Selector* is located below *Circuit List* on the left hand side. It is shown on the Circuit Window only. It is a drop down box used to assign the current circuit type. If the circuit is unused, select not assigned. Only options supported by the Input Circuit Modules programmed for the current panel will be assignable.

The *Device List* is located in the top left corner of the window. It is shown on the Devices Window only. It lists any defined addressable devices for the current addressable circuit, the two entries for a dual end-of-line circuit, and the separate smoke detector and n/o contract device for a Smoke Detector + N/O Contact circuit. For addressable devices, the type of device and its function are shown for each one. Unused addresses are shown with three dashes. Use the <Backspace> key in order to



**Figure 22: Devices Window**

quickly re-position the current selection to another device. The <Up> and <Down> Arrow keys change the current device. The <Right> and <Left Arrow> keys will change the type of the current device. The <Plus> and <Minus> keys will change the function of the current device.



**Note:** Both devices listed for Dual end-of-line and Smoke Detector + N/O Contact circuits must be defined.

The *Device Type Selector* is located below *Device List* on the left hand side. It is shown on the Device Window only. It is used to assign the current device type; Ion, Photo, Thermal, Acclimate, Dual Acclimate, or Laser. For addressable circuits, it displays sensors for addresses 1 to 99 and modules for addresses 101 to 199. If the address is unused, select not assigned. See 1.3 *Addressable Devices* on page 4 for a list of sensors. The following module types are available:

- **Monitor (Class B):** This is a standard monitor module using Class B (Style B) wiring and an end-of-line resistor. This must be chosen for MRI-M500DM, MRI-M501M and MRI-M503M modules.
- **Monitor (Class A):** This is a standard monitor module using Class A (Style D) wiring. This can be used only with the MRI-M500M and MRI-M502M modules.
- **Control (supervising):** This programs the MRI-M500S as a generic signalling circuit. It can be turned on by alarm or supervisory inputs. It will remain on until the system is reset.
- **Control (relay):** This is used for programming the MRI-M500R relay module.
- **Control (Bell):** This programs the MRI-M500S as a standard signalling circuit. It will turn on continuously when activated by an alarm. It will turn off when *Signal Silence* is pressed. It does not sound codes.
- **Control (Strobe):** This programs the MRI-M500S as a signalling circuit for use with strobes. It will be turned on continuously for both Alert and Evacuation mode operation until the system is reset (unless the strobe duration is programmed – see the *Options Dialog* section for *Strobe Duration*).
- **Control (C-Releaser):** This programs the MRI-M500S as a continuous releaser. It will remain on until an alarm is received on a zone activating the releaser. After the *Delay*, the releaser is turned off until the panel is reset. The *Delay* can be from 0 to 180 seconds.
- **Control (M-Releaser):** This programs the MRI-M500S as a momentary releaser. It is inactive until an alarm is received on a zone activating the releaser. After the *Delay*, the releaser is activated. The releaser is turned off after the *Duration* time, or the activating zone and panel are reset. Momentary releasers function normally during an AC power fail. The *Delay* can be from 0 to 180 seconds and the *Duration* can be up to 1800 seconds. 1800 seconds is 30 minutes. A *Duration* of zero (0) will cause the releaser to stay on until it is reset.

The *Function Type Selector* is used to program the function of the current input point. The following function types are available:

- **Alarm:** This is a generic fire input. Displays **\*\*ALARM\*\*** in the Alarm List when activated.
- **Pull Station:** This is a fire input similar to Alarm. The differences are it displays **\*\*PULL STATION\*\*** in the Alarm List and may not have a retard time programmed.
- **Waterflow:** This is a fire input similar to Alarm except that it displays **\*\*WATERFLOW\*\*** in the Alarm List. Bell circuits can be made non-silenceable for waterflow type inputs (see section 2.2 **System Window**).
- **Supervisory:** This is used for such inputs as Low Water Pressure, Sprinkler Shut Off Valve Closed, etc.
- **Halt:** This causes the related outputs to not operate. The supervisory LED will be turned on by activation of this type of input.
- **Abort:** This causes the related outputs to have their associated timers to be stopped. The timers will start to run again when the input goes back to normal. The supervisory LED will be turned on by activation of this type of input.
- **Monitor:** This is used to monitor the action of items such as dampers, door, fans, etc. The supervisory LED is used. Monitor inputs can operate relays and control modules.
- **Non-reporting:** This is a non-latching type of input. They can only operate LEDs, function relays and control modules. The supervisory LED will be operated. Outputs operated by a Non-reporting input cannot be also operated by another type of input or switch.
- **Trouble:** This function type is used for various circuit types and for control modules. Trouble type inputs operate LEDs only, no other outputs are allowed. This function type is assigned by MHI automatically.

The *Message* is located in the middle of the top of the window. This 3 line by 20 character text message is displayed or printed for all signals originating from the current input point. Circuit types that use devices will have a default message created for them when defined. This message can be changed.

The *Use Grp Msg* check box is used if the input point is to use a group message. A text entry box will appear when the box is checked. Enter the ID of the group message to be used. Only one ID can be entered. If a group message is being used, it will be displayed in the Message area, but the message cannot be altered.

There are a number of options that can be used for each input circuit or device. Not all options apply to all inputs. MHI will only show those options that are currently usable. The following options are available:

- **Retard:** This is the amount of time the input must stay in an alarm state before it is treated as a valid alarm. This option is not valid with Pull Station function type inputs nor for Smoke Detector inputs. Conventional circuits are programmed for seconds of delay time. Addressable devices are programmed for a number of additional consecutive scans that must be in alarm before the panel will accept the alarm. The duration of a scan varies between 2.5 and 5 seconds.



**Note:** It is the responsibility of the person writing the database to ensure that the retard time chosen does not exceed any limits allowed by code. It is possible to generate long retard times that are in the two to three minute range if a large number of scans is chosen. For example, UL states that the system cannot take more than 50 seconds to report a waterflow condition. One has to ensure that the total delay of the waterflow detector and the input combined does not exceed 50 seconds.

- **Verify:** Select to have Smoke Detector inputs verified. Verification causes the smoke detector to be reset. If the detector goes into alarm again within the verification time, the alarm is considered valid.
- **Enable Fan Delay:** Controls the staggered turning off of Control Modules (relay). If checked, Control Modules (relay) on this circuit will be turned off in sequence, from the lowest address to the highest address, at a rate set by the *Fan Delay* option in the Panel Options Dialog, when *Reset* is pressed on the panel. The operation of Control Modules (supervising) is not affected by this setting.
- **Disable Maintenance Alert:** Disables the addressable smoke or heat sensor from reporting Maintenance Alert. Maintenance Alert is defined by the device staying at almost alarm threshold for an extended period of time. This is usually an indication that a smoke sensor requires cleaning. Heat sensors in high temperature areas may need the Maintenance Alert disabled to limit nuisance troubles. Standard room temperature (20°C) will not cause a Maintenance Alert on a heat detector.
- **Code Bells:** Checking this option will cause *only selected coded bells* to sound coded signals<sup>1</sup>. If coded bells are used the following options are then also shown:
  - **No Restore:** If checked, the panel will not sound the Code again when the input restores. If not checked, the panel will sound a single round of the Code when the input restores
  - **Code:** This is the sequence that will be sounded when an alarm is received on this input. It can be up to 4 digits long. Hexadecimal digits are used, thus each digit can be from 1 to F, where A=10, B=11, C=12, D=13, E=14 and F=15.
  - **Round:** This is the number of times the Code will be repeated. It can be 3 test rounds.
- **Night Sens. and Day Sens.:** Selects the Alarm threshold sensitivity for addressable smoke sensors. Heat sensors always use Normal sensitivity. Increased sensitivity will cause alarms at lower levels of smoke. Sensors not attached to a switch always use the

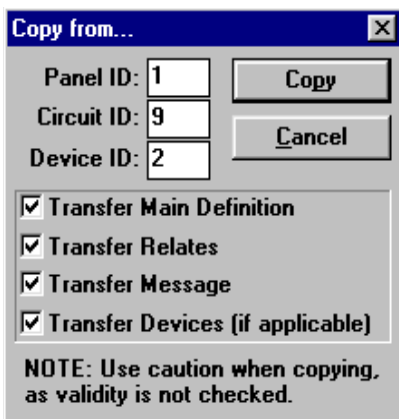
1. Regular bells will only sound their respective Alert or Evac tones regardless of the settings chosen in this area.

Night Sensitivity. Sensors attached to a switch will use Night Sensitivity while the switch is Off and Day Sensitivity while the switch is On. Night Sensitivity must always be equal to or more sensitive than the Day Sensitivity.

- **Manual Restart:** Check this to require that the control module not be reset by *System Reset* but by *Manual Restart*. Use of this option will require that there be a *Manual Restart* function key assigned to the panel.
- **Trigger Manual Restart:** Check this option to have a monitor module generate a Manual Restart when activated. The Module Restart must have Non-reporting function already chosen.

The push buttons located on the right hand side are:

- **Exit:** Closes the window and returns to the previous window.
- **Devices:** Opens the Devices Window for the current circuit (Circuits Window only).



• **Copy:** Copies the circuit/device information, relates and message from another input to the current input (see **Figure 23**). The current input does not have to be defined. Relates cannot be copied between conventional and addressable input points. The *Panel ID*, *Circuit ID* and *Device ID* (not always shown) list the circuit/device to be copied from. Marking *Transfer Main Definition* will copy the listed circuit/device type and function to the current circuit/device. There is no check at this time as to the validity of the values copied. **Unexpected results can occur if care is not taken.** For each database that is created, a warning about using copy is shown. Marking the check box in the warning will stop the box from appearing again for the database. This option can help speed up the creation of a database. By completely defining one input, these values can be copied to all other inputs, making any minor changes that are required after the copy.

**Figure 23: Copy Dialog Box**



**Note:** Not all inputs can be copied to all other possible inputs. Marking *Transfer Relates* will copy the relates from the listed circuit/device relates to the current one. This may cause some invalid relates. Marking *Transfer Message* will cause the message to be copied. Marking *Transfer Devices* (if shown) will copy any device definitions that the listed circuit contains. These devices will copy messages and relates as based on those settings above.

- **Relate** or **Trbl Relate:** Opens the Relate Window for the current circuit or device. This allows for the programming of outputs, LEDs, relays and control modules to be operated when the input goes into alarm. The **Relate** button will display all output types that are available depending on the function type of the input. The **Trbl Relate** button will display only LEDs that can be related.

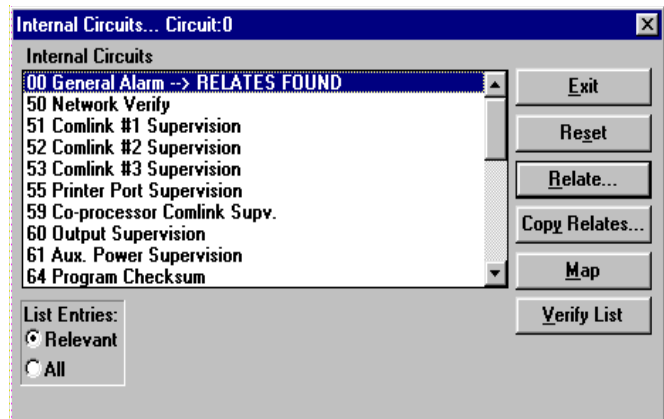


**Note:** All panel outputs and control modules to be operated must be defined before they can be included in the relates of an input.

- **Map:** Displays and/or updates the Map Window. See section 2.8 **Map Window** of the *Modul-R Human Interface Network Plus User Guide*.
- **Verify List:** Displays the Verify List. If there is no Verify List, a requester will appear asking whether you wish to perform a verification. See section 2.6.5 **Verify** of the *Modul-R Human Interface User Guide* for a full description of the Verify List and its uses.

## 2.7 Internal Circuits Window

The Internal Circuits Window (see **Figure 24**) allows for the programming of outputs, LEDs, etc. for the various internal circuits (functions) of the Control Panel. Internal circuits 0, 71, 72, 73, 75, 81, and 82 are fire alarm functions while all others are trouble functions. All internal circuits have specific meanings and are stored in the archive of the panel. MR-2944 and MR-2934 annunciators only use internal circuits 51 and 52. See *4.0 Appendix A: Condition Codes and Zone Numbers on page 44* for a list of all the internal circuits.



**Figure 24: Internal Circuits Window**

Some of the internal circuits are:

- **Internal Circuit 0, General Alarm:** This is the *General Alarm* function. *General Alarm* can be received from an annunciator or from an SE 2000. It can be assigned to one of the Hot Keys of control panels. *General Alarm* causes all the bells and strobes on the panel to operate in Evacuation mode. Any additional outputs, LEDs, etc. that require operation are programmed using the **Relate** button.
- **Internal Circuit 51, Comlink #1 Supervision:** This is used for communications errors on COM1 port of the panel or annunciator.
- **Internal Circuit 52, Comlink #2 Supervision:** This is used for communications errors on COM2 port of the panel or annunciator.
- **Internal Circuit 81, 1st Stage Alarm:** This circuit is activated if the bells and strobes are activated in first stage by an alarm input. Any additional outputs, LEDs, etc. that require operation are programmed using the **Relate** button. If the bells have been disconnected on the panel, this circuit will not be generated.
- **Internal Circuit 82, 2nd Stage Alarm:** This circuit is activated if the bells and strobes are activated in the second stage mode by an alarm input or by a time-out. Any additional outputs, LEDs, etc. that require operation are programmed using the **Relate** button. If the bells have been disconnected on the panel, this circuit will not be generated.
- **Internal Circuit 96, Fire Pre-alarm:** This circuit is activated by any smoke detector in the auto-verify process or addressable device in alarm during the *Retard* period. It can be related to an LED to give a visual indication that an alarm is in the verification process.
- **Internal Circuit 98, Ground Fault:** This circuit is activated if a ground fault is detected by the panel.
- **Internal Circuit 99, Common Trouble:** This circuit is tripped by any internal circuit or trouble condition not associated with an internal circuit that turns on the Common Trouble LED on the panel. This circuit is used to annunciate common trouble conditions at a remote location. This circuit is not tripped by troubles generated by input circuits or addressable devices. This circuit is not recorded in the archive of the panel.

The *Internal Circuits List* displays all of the internal circuits for the current Control Panel. Each line includes the internal circuit number, its description and if relates have been assigned.



**WARNING:** Some of the internal circuits (e.g. checksum) do not have restore signals associated with them. They generally relate to a condition that requires either service work or a reboot of the panel. Any relates assigned to such an internal circuit will have no way to be reset short of re-booting the entire network.

**List Entries:** This is a set of radio buttons for a new feature that allows the user to control the information displayed. *Relevant* lists only items applicable to version 22. *All* lists all possible items so that relates made on previous versions may be removed.

The following push buttons are available:

- **Exit:** Closes the Internal Circuits Window and returns to the Panel Window.
- **Reset:** Clears all relates associated with the current internal circuit.
- **Relate:** Opens the Relate Window for the internal circuit. This allows for the programming of outputs, LEDs, relays and control modules to be operated by the internal circuit.
- **Copy Relates:** Copies the relates from another input to the current internal circuit (see **Figure 16**). The values of the panel and circuit are required. Press **Copy** to copy the information. If the function type of the two circuits is different, a requester is presented to confirm the copy.
- **Map:** Displays and/or updates the Map Window. See section 2.8 **Map Window** of the *Modul-R Human Interface User Guide*.
- **Verify List:** Displays the Verify List. If there is no Verify List, a requester will appear asking whether you wish to perform a verification. See section 2.6.5 **Verify** of the *Modul-R Human Interface User Guide* for a full description of the Verify List and its uses.

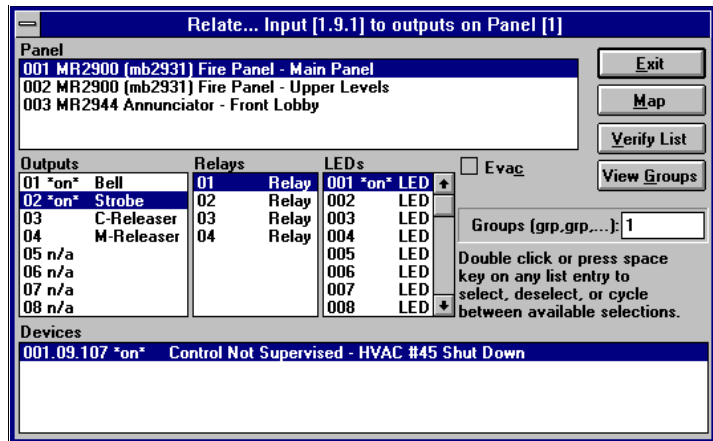
## 2.8 Relate Window

The Relate Window (see **Figure 25**) allows for the relating of inputs, switches and groups to outputs, LEDs, relays, etc. These relationships are used by the panel to determine which outputs to operate for alarm and trouble states. Inputs can operate bells/strobes, LEDs, relays, control modules on any panel in the system and continuous/momentary releasers on the same panel. Switches can operate relays, LEDs, control modules on any panel in the system and

control the day/night sensitivity change of any addressable detector on any panel. The title bar describes the current input point/switch/group and current output panel or annunciator.

*Groups* is a comma separated list of all the groups that the point is to use for relates. Up to ten groups can be listed. These groups are assigned to the point itself and does not change as the current output panel changes. Relates that are part of the groups are not shown in the Relate Window but can be shown on the Map Window if so desired.

The *Panel List* is a list-box located in the top left corner of the window. It lists all the panels, both Control and Annunciator, that are defined in the system along with their panel message. The highlighted entry in the list is the one that is being related to by the current input. When a different panel is selected, all the controls in the window will change to reflect this. Use the <Backspace> key in order to quickly re-position the current selection to another panel.



**Figure 25: Relate Window**

The *Outputs List* shows the programmable outputs of the panel. It is not shown for annunciators. It lists all outputs, along with their definition and current state. The states are *\*on\** for selected, *blank* for not selected, *act* if they are activated by default, and *n/a* for not available. A blank definition is for unused outputs. Bell and Strobe outputs can only be selected for Fire Alarm type inputs. If Complex Releasers are enabled, releasers can have three other states: *Fast* which operates the releaser immediately regardless of any delay that is programmed in; *\*A\** or *\*B\** which allow for AND logic. The releaser will not operate until both an A and a B input have been activated. Use the <space> key or double click on the entry to cycle between available selections. Use the <Backspace> key in order to quickly re-position the current selection to another output.

The *Relays List* shows the general purpose function relays of the panel. It is not shown for annunciators. Each is listed by number and state. The states are *\*on\** for selected and *blank* for not selected. Use the <space> key or double click on the entry to cycle between available selections. Use the <Backspace> key in order to quickly re-position the current selection to another relay.

The *LEDs List* shows the LED zones available on the panel or annunciator. This will not be shown if the panel has no LEDs. Each is listed by number and state. The states are *\*on\** for selected, *blank* for not selected and *n/a* for not available. Use the <space> key or double click on the entry to cycle between available selections. Use the <Backspace> key in order to quickly re-position the current selection to another LED. The actual number of LED zones varies depending upon the panel or annunciator.

The *Device List* shows the addressable devices that can be related to the current point. For system inputs and groups, it is displayed only if there are any control or relay modules defined for the panel; for switches, it is displayed if there are any addressable detectors, or any control or relay modules defined. Each entry shows the devices's address (panel.circuit.device), its state and its device message. The states are *\*on\** for selected and *blank* for not selected. If Complex Releasers are enabled, control modules programmed for releasers can have three other states: *Fast* which operates the releaser immediately regardless of any delay that is programmed in; *\*A\** or *\*B\** which allow for AND logic. The releaser will not operate until both an A and a B input have been activated. Devices that are not available or are invalid are not shown. Use the <space> key or double click on the entry to cycle between available selections.

The *Evac* check box is an option for Fire Alarm type inputs only. Selecting this option will cause all Bells and Strobes for this panel to operate in Second Stage (Evacuation) mode. If selected, Bell and Strobe type outputs for this panel will not be selectable. This will not affect the Bell and Strobe selection of other panels.

The *Msg Receive* check box is an option for annunciators with LCDs only. If marked, this annunciator will receive messages about this input point to display in its Alarm List. If not marked, the annunciator will not receive messages about this input point to display in its Alarm List.

The push buttons, located on the right side of the window, are:

- **Exit:** Closes the Relate Window and returns to the previous window.
- **Map:** Displays and/or updates the Map Window. See section 2.8 **Map Window** of the *Modul-R Human Interface User Guide*.
- **Verify List:** Displays the Verify List. If there is no Verify List, a requester will appear asking whether you wish to perform a verification. See section 2.6.5 **Verify** of the *Modul-R Human Interface User Guide* for a full description of the Verify List and its uses.
- **View Groups:** Displays the Groups Window. This is for reviewing the defined groups. No editing can be done to the groups. To edit the groups, return to the System Window. See section 2.4 **Groups Window**.

## 3.0 LCD Programming

### 3.1 General Comments

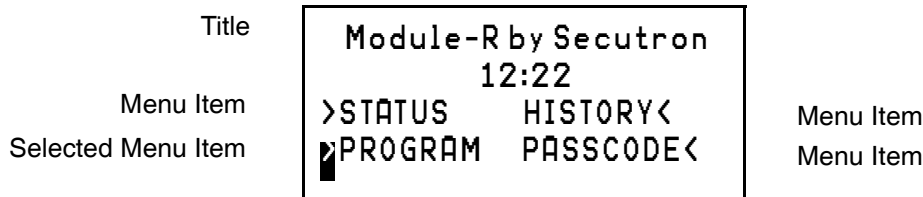
A number of items are programmed through the LCD and keypad. This is called the LCD menu. All options are under the PROGRAM option on the Main Menu of the panel. The Main Menu can be recalled to the LCD by pressing <Home>.



**Note: The only item that must be programmed from the LCD menu is the Panel ID. This must be done before the database is downloaded.**

There are multiple levels of program access. Privilege Level 0 is the base level of operation. Privilege Level 1 allows access to privileged Hot Key functions and limited programming. Privilege Level 2 allows programming of almost all system parameters. Higher Privilege Levels are reserved for Secutron's own use and are not discussed here. Certain functions can be assigned to different privilege levels. These functions default to the higher of the two privilege levels.

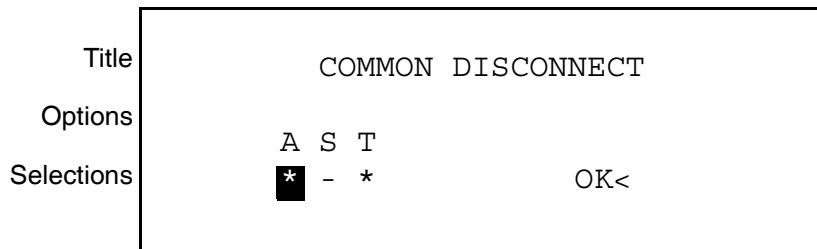
While programming through the LCD menu, the panel will beep once when a valid key is pressed and beep three times if an invalid key is pressed. Programming is done through a series of menus and requester screens. The menus present options to display other menus, show information, or request information (see **Figure 26**). Menus have a ">" or "<" next to the description of each item. Use the arrow keys on the keypad to move the cursor and press <Enter> to select. In **Figure 26**, pressing <Enter> will bring up the Program Menu.



**Figure 26: Typical Menu**

A menu option of **more** will display further menu options that do not fit on the current screen. All the screens of a menu will loop around continuously. The default option, i.e. the option next to the cursor, is the one to the upper left of the screen. Generally, but not always, **more** is the default option.

Selector screens (see **Figure 27**) are screens where options are toggled on or off. Options that are on are marked by an asterisk(\*) while options that are off are marked with a dash (-). Use the left and right arrow keys to move the cursor to the desired option and press <Enter> to change it. Move the cursor to OK and press <Enter> to save any changes, or press <Clear> to lose any changes. In **Figure 27**, the alarm and trouble relays are selected and the supervisory relay is not selected to be disconnected when the Common Disconnect hotkey is pressed. Pressing <Enter> will cause the alarm relay to be not selected.



**Figure 27: Typical Selector**

For all screens, <Clear> returns to the previous menu level without changing any information and <Home> returns to the Main Menu without changing any information.

## 3.2 Clock

This menu has the following options:

- **Date:** View or change the date. The date is entered in MM.DD.YY format. Each section of the date must be separated by a dot. Press <Enter> to accept date typed. <Clear> will remove any digits typed. If no digits are displayed, <Clear> will return to the Clock Menu. The new date will be sent to all other panels on the Network, if used. All panels will assume this date. The date change will be recorded in the Archive.
- **Time:** Change the time. The time is entered in HH.MM.SS format. Each section of the time must be separated by a dot. All times are in 24 hour format. Press <Enter> to accept time typed. <Clear> will remove any digits typed. If no digits are displayed, <Clear> will return to the Clock Menu. The new time will be sent to all other panels on the Network, if used. All panels will assume this time. If <Enter> is pressed with no time entered, the current time will be sent to all panels on the network. If a change of greater than 5 minutes occurs, the new time will be recorded in the archive.



**Notes:** 1. The Master Panel in a network will synchronize all clocks in the network at 03:30 every day, sending both date and time.  
2. Changing the time while the panel is calibrating will abort the calibration.

- **Calibrate:** Calibrates the clock so that it keeps correct time. Calibration takes 2 to 45 days. Waiting longer will give more accurate results. The panel will function normally while calibrating. When sufficient time has passed, re-selecting this function will ask for the correct time. The calibration will then be reported. In a network, only the master panel needs to be calibrated.



**Note:** Changing the time using the **Time** option will abort the calibration. If a panel is currently in a calibration, it will ignore time changes sent over the network.

## 3.3 Common Relays

This function is restricted to Privilege Level 2. The menu has the following options:

- **Disconnect:** View or change the relays that can be disconnected by the *Common Disconnect* hot key. Selected relays will be marked by an asterisk (\*). To change the selection, move the cursor to the desired relay A(larm), S(upervisory) or T(rouble) and press <Enter> to change. Select OK when done. <Clear> will return to Program Menu without making changes.
- **Test Inhibit:** View or change whether common relays are disconnected during Test Mode or not. <Clear> will return to Program Menu without making changes.

## 3.4 Switches

This function can be set to Privilege Level 1 or 2. View or change the status of any switches. These switches can be set to On, Off or Auto. The Auto state only applies to switches that have a timer associated with them. The Auto state allows the switch to follow the timer settings. Any changes made are broadcast to the network so that all panels have the same state. Settings are retained by the panel if it is re-booted and the Master Unit will broadcast its settings to the network upon start up. See section 2.3 **Switches Window** for information on programming what the switch affects.

The menu has the following options:

- **Individual:** View or change the status of an individual switch. Each switch will be shown in turn. If a switch has no timer, the Auto option is not shown.
- **All Off:** Force switches into the Off mode. The number displayed is the number of timers that are switched On. This option is shown only if no switches have timers associated with them.

- **All Auto:** Force all switches with timers to Auto mode. All switches with timers will go into the state dictated by the time. The number displayed is the number of switches with timers forced On or Off. This option has no effect on switches without timers. This option is not shown if no timers are associated with the switches.

### 3.5 Battery

Displays the current battery status and charger calibration. The display shows:

Line 1: Screen Title

Line 2: AC State and Battery Charger Calibration Numbers (diagnostic use only)

Line 3: Current State of the Battery and Menu Option (see below)

Line 4: Menu Options (listed below)

The menu has the following options:

- **OK:** Return to Program Menu.
- **Calibrate:** This function is restricted to Privilege Level 2. This calibrates the Battery Charger. The batteries must be disconnected before beginning calibration. No keypad control is provided during calibration. The calibration display will return when calibration is over. Calibration only needs to be done when the main circuit board/power supply board pair is changed, or when the configuration is erased. All Battery Chargers come calibrated from the factory.
- **Test:** Force an immediate battery test.

### 3.6 Conventional

This menu provides for the testing and bypassing of conventional circuits. Each function will present each zone in turn for selection. Press <Clear> to return to this menu without making changes. The menu has the following options:

- **Test:** Select which zones to test. Test Mode must be on to select zones for testing. All zones selected are automatically deselected when Test Mode is turned off.
- **Bypass:** This function can be set to Privilege Level 1 or 2. Select conventional circuits to bypass. A bypassed circuit will be ignored by the panel. Bypasses are retained when the panel is re-booted. Bypasses are annunciated by a common trouble condition.

### 3.7 Addressable

The menu has the following options<sup>1</sup>:

- **Reset Max/Min:** Clears the stored values for the maximum and minimum values returned by the addressable devices. These values are automatically cleared when the panel reboots.
- **Duplicates Check:** This will cause an immediate check to see if more than one device is using an address. The panel automatically does this check on the hour.
- **LED Mode:** This controls how the LEDs on the devices are used. There are three options:
  - OFF/FLASH: The device LEDs are normally off and will flash when an alarm is reported. The flashing LED will be reset when *System Reset* is pressed.
  - FLASH/ON: The device LEDs flash each time they are polled. They will latch on in Alarm. The LEDs will be reset when *System Reset* is pressed.



**Note:** Due to current draw limitations, only the first 5 detectors<sup>a</sup> on a circuit will latch their LEDs. This has no effect on other panel operation.

1. Panels with 64K EEPROM will not retain Bypass, Sensitivity or Control Module forced states when restarted.  
a. BRK programs dated before 2 April 1999 limit the number of LEDs on to 3 per circuit.

- OFF/ON: The LEDs are normally off and will latch on in Alarm. The LEDs will be reset when *System Reset* is pressed. This option will not be shown if the addressable co-processor cannot support this mode.



**Note:** Due to current draw limitations, only the first 5 detectors on a circuit will latch their LEDs. This has no effect on other panel operation.

- RESET: This functions resets the LEDs to their off state.
- **Sensitivity:** This function is restricted to Privilege Level 2. This allows for the manual adjustment of the sensitivity of addressable detectors. All devices have a default sensitivity assigned in the database. The detector can be set to the database default value or to one of the pre-defined levels replacing the database values. These manual values are retained if the panel is re-booted.
  - SELECT: Change the manual sensitivity of addressable detectors. The first screen asks for a circuit and device number. Enter the circuit and device or press <Enter> without entering any number to view the first detector in the database. Each detector will be displayed in turn, showing the current sensitivity and allowing for it to be changed or the next detector to be displayed. Press <Clear> to stop viewing the detector list.
  - PRINT: Print a list of all detectors that have a sensitivity other than the one selected in the database. This option is not shown if no manual sensitivities have been set.
  - ALL DEFAULT: Change all manual sensitivity settings to the default values set in the database.
- **Monitor:** Allows you to select between all Class A monitor modules and individually selected ones in MHI.
- **Bypass:** This function can be set to Privilege Level 1 or 2. This selects devices to be bypassed. A bypassed device will be ignored by the system. Addressable bypasses are retained when the panel is re-booted. Only devices included in the database can be bypassed. Bypasses are annunciated by a common trouble condition. The Bypass menu has the following options:
  - ON: Select devices to be bypassed. Enter the circuit and device number. Press <Enter> to accept the device and to enter the next one. Pressing <Clear> will remove any numbers entered. Pressing either <Enter> or <Clear> with no numbers displayed will end the input mode.
  - OFF: Select bypassed devices to be returned to normal operation. Each bypassed device is listed in order. Select next to keep the bypass on or select OFF to remove the bypass. After the last device, display returns to the Bypass menu. Press <Clear> to return to the Bypass Menu. This option is not available if there are no devices bypassed.
  - ALL OFF: Remove all bypasses, if any, from the system. The number of bypassed devices is displayed next to this option.
- **Test:** Select devices to be tested. Test Mode must be active for this selection to be available. All devices selected for testing are automatically deselected when Test Mode is turned off. The Test Menu has the following options:
  - ON: Select devices for testing. Enter the circuit and device number, or enter the circuit number only to select all devices on the circuit. Press <Enter> to accept the device and to enter the next one. Pressing <Clear> will remove any numbers entered. Pressing either <Enter> or <Clear> with no numbers displayed will end the input mode.

- OFF: Select devices under test to be returned to normal operation. Each device under test is listed in order. Select next to keep the device under test or select OFF to remove the test mode. After the last device, display returns to the Test menu. Press <Clear> to return to the Test Menu. This option is not available if there are no devices selected for testing.
- ALL OFF: Remove all devices being tested, if any, from the test mode. The number of devices being tested is displayed next to this option.
- **Control Modules:** This function can be set to Privilege Level 1 or 2. Allow for the manual operation of the control and relay modules included in the database. There are three states available: Automatic (controlled by device inputs), Manual On, and Manual Off. This mode is retained if the panel is re-booted. Manually controlled modules are annunciated by a common trouble condition. The menu has the following options:
  - SELECT: Change the Auto/On/Off state of control modules. The first screen asks for a circuit and device number. Enter the circuit and device or press <Enter> without entering any number to view the first control module in the database. Each control module will be displayed in turn, showing the current state and allowing for it to be changed or the next control module to be displayed. Press <Clear> to stop viewing the control module list.
  - ALL AUTO: Change any control modules that are forced on or off back to automatic mode.

### 3.8 Archive

This function is restricted to Privilege Level 2. View and change the settings for the recording of optional entries into the history. The following items can be included or not included in the history:

- **Test:** View or change whether Test signals should be recorded in the history. The current setting is shown in the upper right corner. Test signals will be marked as such.
- **Non-Reporting:** View or change whether non-reporting signals are recorded in the history or not. Non-reporting signals are recorded by default.
- **Network:** Local causes only the local panel's events to be stored in its archive. Global causes all panel's events to be stored in this panel's archive. This option is shown only for the master panel in a network.

### 3.9 Relays

This function can be set to Privilege Level 1 or 2. This function allows for the manual operation of the relays. There are three possible states: Automatic (state determined by inputs), Forced On, or Forced Off. This mode will be retained if the panel is re-booted.

- **Individual:** Change the Auto/On/Off state of relay. Each relay will show the current state and allow it to be changed or the next relay to be displayed. Press <Clear> to stop viewing the relay list.
- **All Auto:** Change any relays that are forced on or off back to automatic mode. The number after All Auto is the number of relays in a forced on or off state.

### 3.10 Ports

This menu has the following options:

- **Network:** Allows for the setting of parameters related to the network. If the downloaded database indicates that there is no network, the only option is **Panel ID**. The Network Menu has the following options:
  - **Panel ID:** This function is restricted to Privilege Level 2. Set the Network ID number. This is between 1 and 254.

- **Reboot:** Cause all panels on the network to do a Hard reboot, i.e. equivalent to pressing the Hard Reboot button on the top of the Inner Door. Each panel will record in the history the time it received the Network Reboot command.
- **Global Commands:** Sends the selected key to all Control and Annunciator Units on the Network. Each unit, including the sending unit, will respond as if that key has been pressed.
- **Verify:** Enable or disable Network Verify reporting troubles. If disabled, the panel will not report a Network Verify trouble (no common trouble sequence), but will still display the error information in the Misc. Troubles.
- **Retry:** Set the number of times to try to resend a message before giving up. If this number of retries are attempted without success, the other panel or annunciator is considered to be off-line. The default value is 8. This would be increased only if the communications line cycles between on-line and off-line.
- **Baud:** Set the communications baud rate for Com Port 1. Since each installation is different, this value will need to be chosen by trial and error. If the default rate does not work, chose the next slower rate. Continue this process until a rate that works is chosen. The available baud rates are: 9600, 4800, 2400, 1200, 600 and 300. The recommended rates are: 4800, 2400, and 1200.

Baud Rate	Maximum Capacitance
9600	100 nF
4800	220 nF
2400	470 nF
1200	680 nF

- **Port 3:** The options available vary depending upon the *Port 3* setting in the database and the operating program installed:
  - Digital Protocol 1 (MR2-7 Programs): Allows for the setting of parameters related to the connection to the SE-2000. It has the following options:
    - **ID:** Select the panel ID number for the central station/city-tie connection communications port. Valid ID numbers are 1 to 16.
    - **Mode:** Select whether circuits 1 to 24 or LEDs 1 to 24 are transmitted. Transmitting the LED numbers allows for zone information to be sent when addressable devices are used.
    - **Baud:** Set the communication baud rate. Select Auto to have the panel automatically choose the SE 2000 baud rate. If required a fixed baud rate can be used. The available fixed baud rates are 9600, 4800, 2400, 1200, 600 and 300.
    - **Disconnect:** If enabled, the *Common Disconnect* hot key will shut down Port 3. The SE 2000 will report the panel as offline.
  - Digital Protocol 2 (MR2-7B Programs): Allows for the setting of parameters related to the connection to the SE-2000. The panel will use the Network ID for identification. If more than one signal needs to be sent, new alarms take precedence. It has the following options:
    - **Master:** This option is available only on the master panel of a network. GLOBAL causes the master to transmit all signals in the network. LOCAL causes the master to transmit only its own signals.
    - **Mode:** Selects how information is sent to the SE 2000. There are the following options:

DEVICE (default): Send the device address or internal circuit number without translation.

ZONE: Send the LED number turned on for input circuits and devices and send the internal circuit for internal circuits.

GROUP: Send the associated Group ID(s) for all conditions. Anything not associated with a specific group will send a group number of 0.

-- **Baud:** Set the communications baud rate. Enter a value of 0 (zero) to have the panel to automatically choose the SE 2000 baud rate. If required a fixed baud rate can be used. The available fixed baud rates are 9600, 4800, 2400, 1200, 600 and 300.

-- **Disconnect:** If enabled, the *Common Disconnect* hot key will shut down Port 3. The SE 2000 will report the panel as offline.

PC Connect (MR2-7G Programs): Allows for the configuration of the communications to a GRID package. If more than one signal needs to be sent, new alarms take precedence.

-- **ON/OFF:** Allows for enabling or disabling of the port. The master panel will report for all panels in the network.

-- **Baud:** Sets the communications baud rate. The available fixed baud rates are 9600, 4800, 2400, 1200, 600 and 300.

-- **Delay:** Sets the length of time the panel will wait before reporting the GRID package off-line. This can be set from 10 to 255 seconds.

-- **Disconnect:** If enabled, the *Common Disconnect* hot key will shut down Port 3. The GRID package will report the panel as offline.

Annunciator Connect (MR2-7A Programs): Allows for the configuration of the communications to MR-2614, MR-2644, MR-2801-MR and Dialler.

-- **Baud:** Sets the communications baud rate. The available fixed baud rates are 4800 and 1200.<sup>1</sup>

Voice Evac. System (MR2-7E Programs): Allows for setting parameters related to the connection to the MV2700 voice evacuation panel.

-- **Mode:** Selects how information is sent to the MV2700. There are the following options:

DEVICE (default): Send the device address or internal circuit number without translation.

ZONE: Send the LED number turned on for input circuits and devices and send the internal circuit for internal circuits.

GROUP: Send the associated Group ID(s) for all conditions. Anything not associated with a specific group will send a group number of 0.

-- **Retry:** Set the number of times to try to resend a message before giving up. If this number of retries are attempted without success, the other panel is considered to be off-line. The default value is 8. This would be increased only if the communications line cycles between on-line and off-line. (Range: 2 – 99)

-- **Disconnect:** If enabled, the *Common Disconnect* hot key will shut down Port 3.

-- **Baud:** Set the communications baud rate. The available fixed baud rates are 9600, 4800, 2400, 1200, 600 and 300.

- **Terminal:** Select ANSI or TeleVideo protocol. Most terminals and terminal emulator programs support ANSI protocol.

- **Printer:** MR1-1 and MRx-2 Programs: Select the baud rate for the printer port. The available rates are 9600 (default), 4800, 2400, 1200, 600, and 300.

MRx-3 and MRx-7 Programs: There are two options for configuring the Port 6 serial printer port:

---

1. Only MR-2614 v2.1 and up support 4800 baud. Previous versions only support 1200 baud.

- **Size:** Set the width of the lines sent to the Port 6 printer or disable the printer. Options are None, 20 and 80. The default is None, which disables this feature. Use 20 when using an MR-2920 printer.
- **Baud:** Select the baud rate for the printer port if the size is 80 columns. The available rates are 9600 (default), 4800, 2400, 1200, 600, and 300.

### 3.11 Alarm List

This menu controls the operation of the Alarm List. This function is restricted to Privilege Level 2. It has the following options:

- **Reset:** Select when entries are taken out of the Alarm List. AUTO removes entries as soon as the condition restores. MANUAL requires that *Reset* be pressed before they are removed. Conditions that have restored will be shown as a restored condition in the Alarm List.
- **Remote:** Routes the messages for events from the panel to annunciators. The options are:
  - ALL: All messages are sent to all annunciators.
  - SELECT: Messages are sent as directed in the database.

### 3.12 Passcode

Allows for the changing of passcodes. The Privilege Level 2 can change both the Level 1 and 2 passcodes, while Level 1 can only change the Level 1 passcode. Passcodes are four digit numbers in the range 1000 to 9999. Type in the new passcode and press <Enter> to accept. Asterisks will be displayed instead of the numbers. <Clear> will remove any digits typed. If no digits are displayed, <Clear> will return to the Program or Passcode Menu.

The default Level 2 passcode is 2222. The default Level 1 passcode is 1111. These passcodes should be changed to prevent unauthorized access.

There is a special Level 2 passcode that is variable from day to day. It can be obtained from Secutron if the Level 2 passcode is forgotten.

### 3.13 Memory

This function is restricted to Privilege Level 2. This menu has the following options:

- **Erase Configuration:** This will erase all initiating circuit, bell, relay, releaser and privilege values entered from the keypad and LCD menu, and replace them with default values. With MR2 programs, this has no effect on information contained in the downloaded database. Confirmation is asked before erasure. After the Configuration has been erased, the panel must be reset using the reset button at the top of the Main Circuit Board, if the panel does not do this automatically. The following items are not erased: Serial Number, Clock Calibration, Level 1 Passcode, Level 2 Passcode, Main Board Type, Terminal Board Type, Input Circuit Modules.



**Note:** The battery charger will need to be re-calibrated (see Section 3.5, page 39) after erasing the configuration.

### 3.14 Buzzer

This function is restricted to Privilege Level 2. This sets the length of the Trouble Buzzer Inhibit time. This is the length of time that a new trouble will not cause the buzzer to sound after it has been silenced for a trouble. The time can be set to 0 or from 15 to 255 seconds. If 0 is chosen, the buzzer will sound for every trouble.

## 4.0 Appendix A: Condition Codes and Zone Numbers

The Alarm List and Archive use the following formats for condition codes and zone numbering.

### Condition Code

Archive	Alarm List	Description
A	ALARM	Alarm
B	bypass	Bypassed Circuit/Device
C	com	Comlink
D	dupl	Duplicate Addressable Device
E	alert	Maintenance Alert
G	ground	Ground Fault
H		Hot Key Pressed
I	ilgl	Illegal Addressable Device
J		Switch
M	msg	Missing Addressable Device
N	nofire	Non-Fire
P	M.PULL	Pull Station Alarm
S	spv	Supervisory
T	trbl	Trouble or Parameter Change
U	wrong	Wrong Device Type
W	WFLOW	Waterflow Alarm
X	warn	Pre-Alert

A plus sign (+) refers to a new or on condition, a minus sign (-) refers to a restoral or off condition, and an equal sign (=) refers to a one time event.

**Zone Number**

PPP:ZZ.SSS Format:

PPP     Control Panel Number

ZZ       Panel Zone

Panel Zone	Description	Panel Zone	Description
0	General Alarm	54	Comlink 6
1	Initiating Circuit 1	55	Printer Port
2	Initiating Circuit 2	56	Dialer/City-tie
3	Initiating Circuit 3	59	Addressable Modules Comlink
4	Initiating Circuit 4	60	Output (bell/releaser) Supervision
5	Initiating Circuit 5	61	Auxiliary Power Supervision
6	Initiating Circuit 6	64 <sup>1</sup>	Program Checksum
7	Initiating Circuit 7	65 <sup>1</sup>	Database Checksum
8	Initiating Circuit 8	66	AC Power
9	Initiating Circuit 9	67	Low Battery
10	Initiating Circuit 10	69 <sup>1</sup>	Program Restart
11	Initiating Circuit 11	70	Battery Charger
12	Initiating Circuit 12	80 <sup>2</sup>	Privilege Level
13	Initiating Circuit 13	81	1st Stage Alarm
14	Initiating Circuit 14	82	2nd Stage Alarm
15	Initiating Circuit 15	83	Switch
16	Initiating Circuit 16	84	Test Mode
17	Initiating Circuit 17	85 <sup>1</sup>	Erase Configuration
18	Initiating Circuit 18	86 <sup>3</sup>	Change Configuration
19	Initiating Circuit 19	87	Passcode Tamper
20	Initiating Circuit 20	88 <sup>1</sup>	Database Loaded
21	Initiating Circuit 21	89 <sup>1</sup>	Time/Date Change
22	Initiating Circuit 22	90 <sup>1</sup>	Hot Key Activation
23	Initiating Circuit 23	91 <sup>1</sup>	Memory Overflow
24	Initiating Circuit 24	92 <sup>1</sup>	Network Reboot
25		93 <sup>1</sup>	New Program
50	Network Verify	94 <sup>1</sup>	Network Reboot Required who
51	Comlink 1	95 <sup>1</sup>	Network Reboot Required why
52	Comlink 2	96	Fire Pre Alarm
53	Comlink 3	98	Ground Fault



- Note:**
1. These zones do not restore.
  2. Privilege Level 0 generates a restore signal; all others generate a trouble signal.
  3. This zone does not restore and is not repeated sequentially in the archive.

**SSS Sub-Zone Number**

<b>Zone</b>	<b>Meaning of SubZone Number</b>
Addressable Circuit	000 - Wiring Fault All Others - Device Number
Dual End-of-Line Circuit:	000 - Wiring Fault 001 - Switch #1 002 - Switch #2
Smoke Detector and Contact Device Circuit:	000 - Wiring Fault 001 - Smoke Detector 002 - Contact Device
Comlink 1 (Zone 51)	Unit Network ID number
Comlink 3 (Zone 53)	Unit ID number if relevant, 000 otherwise
Comlink 6 (Zone 54)	Unit ID Number 1-8 MR-2614 9-16 MR-2644 239 City-tie 240 MRDL/City-tie
Dialer/City-tie (Zone 56)	Trouble Condition 001 - Line 1 Trouble 002 - Failure to Communicate (FTC) Account 1 003 - Line 2 Trouble 004 - Failure to Communicate (FTC) Account 2
Addressable Module Comlink (Zone 59)	001 - Circuits 1 to 8 002 - Circuits 9 to 16 003 - Circuits 17 to 24
Output Supervision (Zone 60)	Output Circuit Number
Auxiliary Power Supervision (Zone 61)	Auxiliary Power Circuit Number
Program Re-start (Zone 69)	000 - Power On/Hard reboot 001 - Watchdog 002 - Clock Monitor 003 - Illegal Instruction 004 - Unused Interrupt 005 - Orphan Interrupt
Privilege Level (Zone 80):	Level Set
Switch (Zone 83):	Switch Number
Time Change (Zone 89)	0: Time Changed from 1: Time Changed to 2: New Date 3: Daylight Savings Time Change

Zone	Meaning of SubZone Number
Hot Key Activation (Zone 90): Function Number of the Hot key pressed	001 - Fire Drill 002 - Lamp Test 003 - Releaser Disconnect 004 - Relay Disconnect 005 - Test Mode 006 - Signal Disconnect 007 - Acknowledge 008 - Signal Silence 009 - Reset 010 - Common Disconnect 011 - General Alarm 012 - Halt 013 - Abort 014 - 2nd Stage Inhibit 016 - Switch 1 On 017 - Switch 2 On 018 - Switch 3 On 019 - Switch 4 On 020 - Switch 5 On 021 - Switch 6 On 022 - Switch 7 On 023 - Switch 8 On 024 - Switch 9 On 025 - Switch 10 On 026 - Switch 11 On 027 - Switch 12 On 028 - Switch 13 On 029 - Switch 14 On 030 - Switch 15 On 031 - Switch 16 On 032 - Switch 1 Off 033 - Switch 2 Off 034 - Switch 3 Off 035 - Switch 4 Off 036 - Switch 5 Off 037 - Switch 6 Off 038 - Switch 7 Off 039 - Switch 8 Off 040 - Switch 9 Off 041 - Switch 10 Off 042 - Switch 11 Off 043 - Switch 12 Off 044 - Switch 13 Off 045 - Switch 14 Off 046 - Switch 15 Off 047 - Switch 16 Off 051 - Manual Restart

Zone	Meaning of SubZone Number
Memory Overflow (Zone 91)	000 - MR-2900 panel 001 - CoProcessor for circuits 1..8 002 - CoProcessor for circuits 9..16 003 - CoProcessor for circuits 17..24
Network Reboot (Zone 92):	Unit ID of panel broadcasting the command
Network Reboot Required Who (Zone 94):	Unit ID of panel generating the Network Reboot Required trouble
Network Reboot Required Why (Zone 95)	003 - port 3 006 - negative counter 008 - memory overflow 009 - co-processor memory overflow 010 - network 011 - network 012 - network 013 - network
All Others:	Always 000

## 5.0 Appendix B: Service Terminal

The MR-2900 Control Unit, MR-2909 Addressable Input Module and MR-2919 Addressable Input Module will display information and accept commands via the service terminal port. The information includes initiating circuit configuration, current status of bell, relays, etc., diagnostic information, the archive, etc. The commands allow for the selection of the information to view, limited programming and basic operation. Certain Control Unit commands are available only at certain privilege levels. Units will beep once when a valid character is received and three times if an invalid character is received. If a command is not finished within about 10 seconds, the unit will beep three times and will lose any information sent.

The service terminal program provides the information on a number of different screens. When the terminal is first connected, it will be viewing whatever screen was the last viewed. To view Screen 0, which lists all the screens that are available, press 0<Tab>. Press <Delete> to refresh the screen. Press the <Tab> key to view the next screen. See below for a complete description on the <Tab> key commands. Certain Control Unit screens are available only at higher privilege levels.

The service terminal of the addressable modules, if any installed, is available through the Control Unit's service terminal.

### 5.1 Control Unit

#### Screens

The Control Unit uses 8 data bits, no parity, 1 stop bit for communication over the serial port. The fixed baud rate is 9600 bps.

All screens have a common status line across the top. It shows, from left to right, the current time, the current date, the current privilege level, the panel number, the current screen number and name. All available screens are listed and described below along with any key commands valid only on that screen. To view a particular screen, enter *n*<Tab> where *n* is the screen number. Those screens marked with an asterisk (\*) are useful in trouble shooting the panel.

Screen	Name	Description
0*	Index	A list of all the available screens.
1	LCD	Display and control the panel LCD. This is useful for training sessions since more people can view the terminal screen than can view the LCD directly. All keypad keys are mapped to the equivalent key board key, with the keypad <Clear> being mapped to the key board <End>. <b>Note:</b> The control feature does not work over a network.
2	Misc	A list of the program version, boards installed in the system and other information not listed elsewhere.
3	Battery	Displays the current battery level, and the current status of the battery and AC power. Also shows the timer for the battery test. <u>Commands</u> <Ctrl-B>            Print battery calculation 0<Ctrl-B>            Execute a dynamic battery test once and end continuous testing if on. 9900<Ctrl-B>        Start continuous dynamic battery testing.
4	AC	Display the current status of the AC power and the delay timer for report AC fail.

Screen	Name	Description
5*	Bells	Displays the current status of the bell circuits. Also shows the timers and settings for the cut-off. See screen 11 for acceptable supervision values. See screen 39 for addressable bells.
6	Function Relays	Displays the current settings and timers for the 4 function relays.
7	Releasers	Displays the current settings and timers for the releasing circuits (if any). See screen 40 for addressable releasers.
8	Common Relays	Displays the current status of the 3 common system relays. Also shows which relays may be disconnected by the <i>Common Disconnect</i> hot-key.
9*	Alarm List	Shows the current alarm list. This is the same list that is displayed on the LCD menu. Each screen in the LCD corresponds to one line on the terminal screen. See Appendix A for a description of the condition codes and zone numbers. <u>Commands</u> J Page down 0 J Go to the end of the list K Page up 0 K Go to the beginning of the list
10*	Miscellaneous Troubles	Display a list of all the troubles currently displayed by the STATUS/MISC. TROUBLES selection from the LCD.
11*	Output Supervision	Shows the current supervision readings and status for the bells and auxiliary power circuits. These values should be in the range 130 to 150 for Vhi, and 10 to 20 for Vlo (low gain) or around 100 for Vlo (high gain). If the numbers are jumping all over the place, there is a hardware fault with the terminal board.
12	Relay Summary	Displays which relays and functions have been activated: O Bell Circuits 1 to 8, MRx-3 & MRx-7 F Function Relays 1 to 4 A Common Alarm S Common Supervisory T Common Trouble G Ground Fault W Walk Test L LCD Back Light
13*	Archive	Displays the Archive History List. This is the list of the last 900 (approximate) events that happened. See Appendix A for a description of the condition codes and zone numbers. <u>Commands</u> J Page down 0 J Go to the end of the list K Page up 0 K Go to the beginning of the list
14	Printer	A copy of everything sent to the printer. This is useful for capturing print-outs to a file. <b>Note:</b> Status line updating is disabled while on this screen.

Screen	Name	Description
15	Printer Status	Displays the current printer status.
16	Network	Displays information about network communications. This includes frames sent and received, frames in error and orphan messages. <u>Commands</u> 0 V Clear network counters
17	Port 1	Displays information about the primary network port. Includes the status of the panels that are and should be online. <u>Commands</u> 0 V Clear network counters
18	Port 2	Displays information about the secondary network port. A question mark appears in front of the baud rate when the port is off-line. <u>Commands</u> 0 V Clear network counters
19	Port 3	Shows the current status ID, frame count and baud rate for the central station communications link. A question mark will appear in front of the baud rate when the port is offline. <u>Commands</u> 0 V Clear counters on screen
21	Conventional Database	Displays the current alarm and trouble status of each of the installed conventional input circuits.
22	Conventional Analog	Displays the current supervision readings of each of the installed conventional input circuits.
23	Conventional Detail	Displays the programming and status for a single conventional input circuit. This includes any timers that are connected to smoke detector operation. <u>Commands</u> C Display next initiating circuit (1-24)C Display specified initiating circuit
27	Misc. Outputs	Displays the status of follow trouble, follow supervisory and aux power output types.
29	System Reset	Displays a list of resettable items. These are the items that are reset when <i>System Reset</i> is pressed.
30	Port 9 (addressable)	Shows the current condition of the three possible addressable boards and the status of the communications to the boards. Also displays information about screens 31 to 33.
31	Addressable 1..8	Connect to the Addressable Module controlling circuits 1 to 8 if it exists. Press <ESC> to return to the Control Panel screens. This is for a future use.
32	Addressable 9..16	Connect to the Addressable Module controlling circuits 9 to 16 if it exists. Press <ESC> to return to the Control Panel screens.

Screen	Name	Description
33	Addressable 17..24	Connect to the Addressable Module controlling circuits 17 to 24 if it exists. Press <ESC> to return to the Control Panel screens.
<b>Notes for Screens 31 to 33:</b> <ol style="list-style-type: none"> <li>The keyboard commands (see below) are not available.</li> <li>The Addressable Module will display "Co-processor Screen #" on the status line to distinguish its screens from the Control Panel's screen.</li> </ol>		
34	Addressable Relays	Displays the automatic and force states for all the control modules on a circuit. <u>Commands</u> C            Display next initiating circuit (1-24)C    Display specified initiating circuit
35	Sensitivity	Displays the Day/Night status, the default and manual sensitivities of all sensors on an addressable circuit. Dots will be shown for any value that is not used. <u>Commands</u> C            Display next initiating circuit (1-24)C    Display specified initiating circuit
36	Sensitivity List	Displays the value each sensitivity setting represents.
37	Bypass & Test	Displays the Bypass and Test status of all devices on an addressable circuit. <u>Commands</u> C            Display next initiating circuit (1-24)C    Display specified initiating circuit
38	Switches	Show the current on/off status of each switch and list the timer associated with each one.
39	Addressable Bells	Displays a grid for one addressable circuit of the modules programmed as a bell or strobe. A B is shown for control modules programmed as a bell and an S for control modules programmed as a strobe. The second character is the current status. See Screen 5 for the panel's bell outputs.
40	Addressable Releasers	Displays 10 consecutive address. Each control module that is programmed as a releaser will have an asterisk shown in either the continuous or momentary line as required. Each column will show the current state at the top and programmed settings at the bottom. See screen 7 for the panel's releaser outputs.
49	Clock	Shows the status of the Daylight Savings Time option & clock calibration.
50	Tasks	This screen is restricted to Privilege Level 1 and above. This screen is for factory use only.

Screen	Name	Description
51*	FIFO	This screen is restricted to Privilege Level 1 and above. Displays the FIFO memory usage of various system tasks. This diagnostic screen needs to be consulted if the panel has a Memory Overflow trouble. The first line shows the total FIFO space and the largest amount any one task has used. For each task, the first number is the current usage and the second is the maximum usage. If a task uses a large amount of FIFO memory, this means that task is having difficulty in operating. The task "SPI comlink" is the one that handles the addressable co-processor(s).
52	Memory	Displays the type and amount of extended memory installed in the system.
60	Annunciator	Displays the states of the 24 LED zones on the front panel.
68*	Remote Terminal	Displays the service terminal screens for another panel in the network. This allows for the trouble shooting of a system from a single location. This screen automatically disconnects the remote connection if memory gets low or if no communication is received for 15 seconds. The remote panel stops sending data after 15 minutes. <u>Commands</u> (id) N Display the service terminal for Panel id <ESC> Disconnect remote connection
69*	Network Verify	Displays the current status of the network verify feature.

These keyboard commands are available on all screens except when the service terminal is connected to an Addressable Module (Screens 31 to 33).

Command	Description
<Del>	Clear and redisplay screen.
<Tab>	View next available screen. Unused/unavailable screens are skipped over.
<Backspace>	View previous available screen. Unused/unavailable screens are skipped over.
0<Tab>	View Index screen showing the numbers of all available screens.
0-127<Tab>	View Selected Screen. If selected screen is unused/unavailable, the next available screen is shown.
0.0<Tab>	TeleVideo cursor control mode.
0.1<Tab>	VT100 cursor control mode.
A	Silence buzzer.
D	Print the date and time.
(month).(date) D	Enter the date.

Command	Description
(month).(date).(year) D	Enter the date and year. The year may be entered as 00 to 99 in a two-digit format, or as 1991 to 2090 in a four-digit format.
(hours).(minutes) T	Set the time.
(hours).(minutes).(seconds) T	Set the time.
<Ctrl-V>	Clear privilege (Set to User Privilege.)
(code)<Ctrl-V>	Set privilege. (code) is either the Level 1 or Level 2 passcode programmed into the panel.
0 ?	Print downloaded database.
90 ?	Print archive.
99 ?	Print configuration.
<Esc>	Stop Printout.
<Enter>	Advance printer (paper feed).

## 5.2 Addressable Module

The Addressable Module's service routines can be accessed through the Control Panel's service terminal using screens 31, 32 and 33. While the service terminal is accessing the Addressable Module, all Control Panel Commands are unavailable. Press <ESC> to return to the Control Panel service routines.

All screens have a common status line across the top. It shows, from left to right, the current time, a diagnostic number, the current screen number and name. All available screens are listed and described below. Screens useful for trouble shooting are marked with an asterisk (\*).



**Note:** The Addressable Module will display "Co-processor Screen #" on the status line to distinguish its screens from the Control Panel's screens.

Screen	Name	Description
0*	Index	A list of all the available screens.
2	Misc	A list of the program version, boards installed in the system and other information not listed elsewhere.
10*	Miscellaneous Troubles	Display a list of all the troubles.
15	Comlink	Displays the status of communications between the panel and the addressable module.
19*	Read Me	List of all the keyboard commands.
20*	Totals	Lists for all circuits the number of devices assigned, on-line, missing, etc. Also lists the total number of devices in alarm, supervisory or trouble conditions. Also lists current wiring supervision status for each loop.

Screen	Name	Description
21	Detail	For a single device, shows all the programming, analog values, status and commands sent.
22	Type On-Line	For a single circuit, shows a grid displaying all the devices that are actually on the circuit.
23	Type Assigned	For a single circuit, shows a grid displaying all the devices that are programmed to be on the circuit.
24*	Errors	For a single circuit, shows a grid displaying all the incorrect, missing and mismatched devices. This shows the differences between what is expected to be on the circuit and what actually is on the circuit.
25	Alarms	For a single circuit, shows a grid displaying the current Alarm, Early Warning, Supervisory and Trouble conditions for all devices on the circuit.
26	Function	For a single circuit, shows a grid displaying the Alarm and Supervisory initiating devices. Control modules are neither type and are displayed as a dash (-).
27	Control Modules	For a single circuit, shows a grid displaying the current status of all the Control modules.
28	Bypass	For a single circuit, shows a grid displaying all the devices that are currently bypassed.
29	Test Mode	For a single circuit, shows a grid displaying all the devices that are currently under test.
30	Analog	Displays the analog values of 10 consecutive addresses for a single circuit.
50	Tasks	This screen is for factory use only.
51	FIFO	Displays the FIFO memory usage of various system tasks. This diagnostic screen needs to be consulted if the panel has a Memory Overflow trouble. The first line shows the total FIFO space and the largest amount any one task has used. For each task, the first number is the current usage and the second is the maximum usage. If a task uses a large amount of FIFO memory, this means that task is having difficulty in operating.

The Addressable Module supports the following key board commands:

Command	Description
<Del>	Clear and redisplay screen.
<Tab>	View next available screen. Unused/unavailable screens are skipped over.
<Backspace>	View previous available screen. Unused/unavailable screens are skipped over.

Command	Description
0<Tab>	View Index screen showing the numbers of all available screens.
0-127<Tab>	View selected screen. If selected screen is unused/unavailable, the next available screen is shown.
A	Display next address.
(0-199)A	Display selected address.
C	Display next circuit.
(1-24)C	Display selected circuit.
0M	Reset minimum/maximum values.

The MR-2919 Class A Addressable Module also supports the following commands:

Command	Description
0P	Energize all circuits
1P	Energize odd circuits only
2P	Energize even circuits only

## 6.0 Appendix C: Table of Reporting Codes

The following tables contain automatic Contact ID and SIA format reporting codes.

**Contact ID:** The first digit (in parentheses) will automatically be sent by the control. The second two digits are to indicate specific information about the signal. For example, if zone 1 is a fire zone, you could program the event code as [1A]. The central station would receive the following:

\*FIRE\* - FIRE ALARM - 1 where the "1" indicates which zone went into alarm.

**SIA Format – Level 2:** The SIA format used in this product follows the Level 2 specifications of the SIA Digital Communication Standard – October 1997. This format will send the account code along with its data transmission. The transmission would look similar to the following at the receiver:N  
Ri00 FA 01

N = New Event  
Ri00 = System Event  
FA = Fire Alarm  
01 = Zone 1

**Table 1: Automatic Contact ID/SIA Reporting Codes**

Reporting Code	Code sent when...	Dialer Direction*	Contact ID Auto Rep. Codes	SIA Auto Rep. Codes
Zone Supv./Rest.	zone goes into supervisory/ restore (2)	S/R	AA	See Table 4
Zone Alarms/ Rest.	zone goes into alarm/ alarm condition has been restored	A/R	(1) 3A	See Table 4
Zone Trouble/ Rest.	zone exhibits a trouble condition/ zone trouble condition has been restored	T/R	(3) 73	See Table 4
AC Fail Trouble/ Rest.	AC power to control panel is disconnected or interrupted/AC power restored; both codes follow the AC Trouble Delay=	MA/R	(3) A1	AT-000/ AR-000
Battery Trouble/ Rest.	control panel battery is low/battery restored	MA/R	(3) A2	YT-000/ YR-000
Ground Fault Trouble/Rest.	Earth Ground Fault is detected/ restored	MA/R	(3) 1A	UT-000/ UJ-000
NAC Trouble/ Rest.	NAC circuit is opened/restored	MA/R	(3) 21	YA-000/ YH-000
Dialer Bus Trouble/ Rest.	Dialer Bus connection is lost/restored	MA/R	(3) 33	NT-000/ NR-000
Line 1 or 2 TLM Trouble/Rest.	connection via Telephone Numbers 1 or 2 is lost/restored	MA/R	(3) 51	LT-XXX/ LR-XXX**
Phone # 1 or 2 FTC Trouble/ Rest.	communication is restored after a failure to communicate trouble has occurred; events not communicated during lapse will be sent	MA/R	(3) 54	YC-XXX/ YK-XXX**

Reporting Code	Code sent when...	Dialer Direction*	Contact ID Auto Rep. Codes	SIA Auto Rep. Codes
Walk Test Start/ Stop	control panel has entered/exited walk test mode; no events will be communicated	MA/R	(6) A7	TS-000/ TE-000
Test Transmission Normal/ Off-Normal	test transmission reports system normal or off-normal (alarm, supervisory or trouble) control panel condition	T	(6) A2	RP-000/ RY-000

\* Call directions: A/R = alarm/restoral; T/R = trouble/restoral; MA/R = maintenance alarm/restoral; S/R = supervisory/restore; T = test transmission

\*\* Line number/telephone number is identified (XX)

**Table 2: Contact ID Zone Alarm/Restore Event Codes**

Program any of these codes for zone alarms/restorals when using the standard (i.e. not automatic) Contact ID reporting format:

<b>Medical Alarms</b>	(1)18 Near Alarm	<b>24 Hour Non Fire</b>
(1)A1 Emergency	<b>Panic Alarms</b>	(1)51 Gas Detected
(1)A2 Fail to Report In	(1)2A Panic	(1)52 Refrigeration
<b>Fire Alarms</b>	(1)21 Duress	(1)53 Loss of Heat
(1)1A Fire Alarm	(1)22 Silent	(1)54 Water Leakage
(1)11 Smoke	(1)23 Audible	(1)55 Foil Break
(1)12 Combustion	<b>General Alarms</b>	(1)56 Day Trouble
(1)13 Water Flow	(1)4A General Alarm	(1)57 Low Bottled Gas Level
(1)14 Heat	(1)4A General Alarm	(1)58 High Temp
(1)15 Pull Station	(1)43 Expansion module failure	(1)59 Low Temp
(1)16 Duct	(1)44 Sensor tamper	(1)61 Loss of Air Flow
(1)17 Flame	(1)45 Module Tamper	

**Table 3: SIA Format Automatic Zone Alarm/Restore Codes**

Zone Definition	Alarm/Rest Rep. Codes*	Supervisory/Rest. Rep. Codes*	Trouble/Rest. Rep. Codes*
Fire	FA-ZZZ/FH-ZZZ	FS-ZZZ/FR-ZZZ	FT-ZZZ/FJ-ZZZ
Sprinkler	SA-ZZZ/SH-ZZZ	SS-ZZZ/SR-ZZZ	ST-ZZZ/SJ-ZZZ
Heat	KA-ZZZ/KH-ZZZ	KS-ZZZ/KR-ZZZ	KT-ZZZ/KJ-ZZZ
Water	WA-ZZZ/WH-ZZZ	WS-ZZZ/WR-ZZZ	WT-ZZZ/WJ-ZZZ
Untyped	UA-ZZZ/UH-ZZZ	US-ZZZ/UR-ZZZ	UT-ZZZ/UJ-ZZZ

ZZZ = zones 01-250, 256









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