

mi8

Installer Manual



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Introduction to the mi8

The mi8 is a state-of-the-art, microprocessor based, customisable eight-zone Alarm Panel. It is, with the addition of an expander module, expandable to a maximum of 16 zones. All features are programmable either directly via the keypad or the Finmon website (for authorised users only). Communication to the monitoring station is by means of an onboard GSM modem. Five programmable outputs are provided which may be used to operate peripheral devices or alternately activate a radio transmitter for dual technology monitoring applications. A dedicated fused siren output is provided. Each keypad has the option of one additional zone and one additional programmable output. The expander module provides an additional 8 zones and two programmable outputs.

For correct operation, the mi8 must be used in conjunction with the specified transformer/battery combination, appropriate signalling devices, and peripheral sensors.

1.1 Features of the mi8

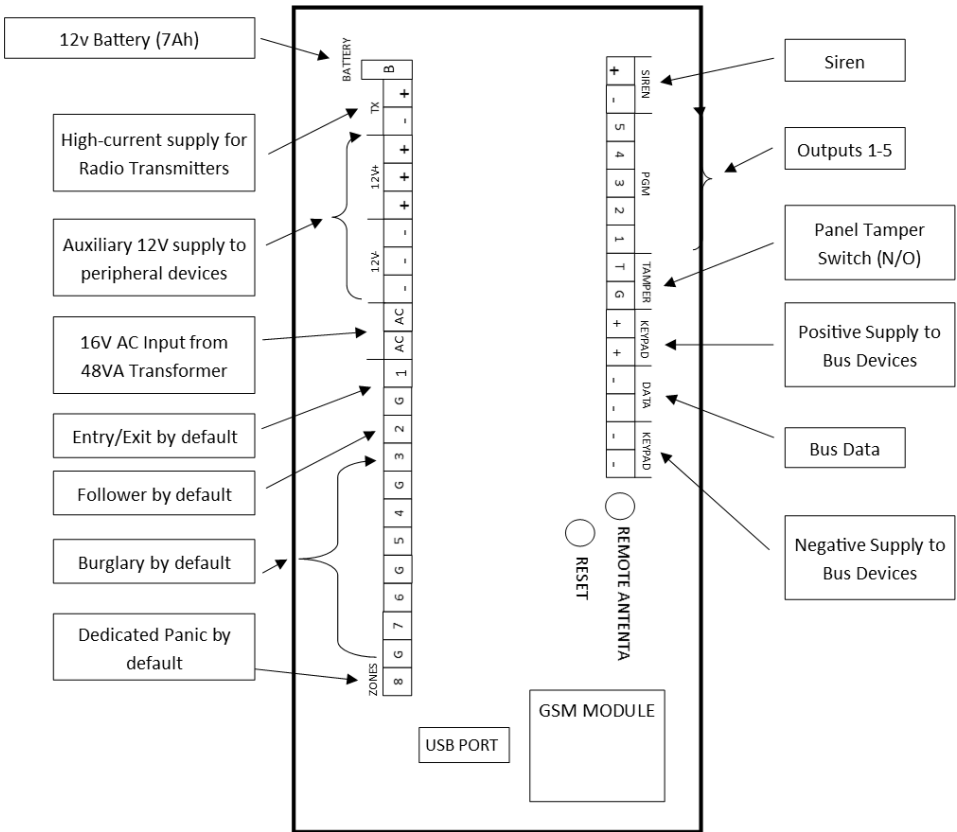
- 8 programmable, end-of-line supervised zone inputs.
- Expandable to 16 zones using an expander module and keypad zones (8 zones per expander module and 1 zone per keypad).
- 4 partitions.
- Optional tamper reporting per zone using double end-of-line resistors.
- Dedicated tamper zone.
- Five programmable outputs on the alarm panel, with an additional output per keypad and 2 outputs per expansion module.
- Flash memory retains all program and event log data in the event of a total power failure.
- Remote access to a timestamped event log.
- Zone loop response time programmable to either 100 ms or 16 ms.
- Up and downloadable from website.
- Auto arm/disarm capability per partition and by day of the week.
- Dynamic battery test.

- Low battery cut out.
- Remotely updateable firmware for panel, keypads, and expansion modules.
- Integral GSM modem. Optionally the panel is available without the GSM modem, but functionality is degraded.
- Reporting via the GSM module and/or trigger outputs.
- Wireless expansion using the Finmon remote receiver.

2 Installation and Wiring

Please see Figure 1 below.

Figure 1: Connection Diagram with EOL (End-of-Line) Resistor



2.1 EOL Resistors/Tamper per Zone

All zones are end-of-line supervised. Any unused zones must be terminated with a 3K3 resistor. The end-of-line resistor should be placed inside or as close to the sensor as possible. If the zones are NOT programmed to report tamper by zone, use the 3K3 end-of-line resistor.

If tamper reporting is enabled for a zone, the 5K6 and 8K2 end-of-line resistors must be connected for that zone as per Figure 2 below. **Note:**

Zone tamper is not a global setting but is enabled for individual zones. All zones programmed to report tamper must have dual end-of-line resistors.

Figure 2: Parallel EOL with Normally Open Contact

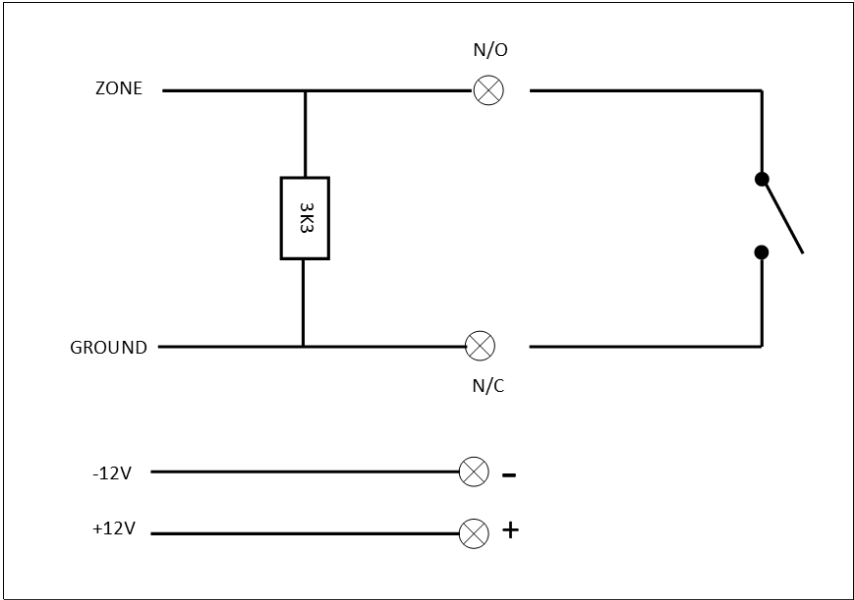


Figure 3: Serial EOL with Normally Closed Contact

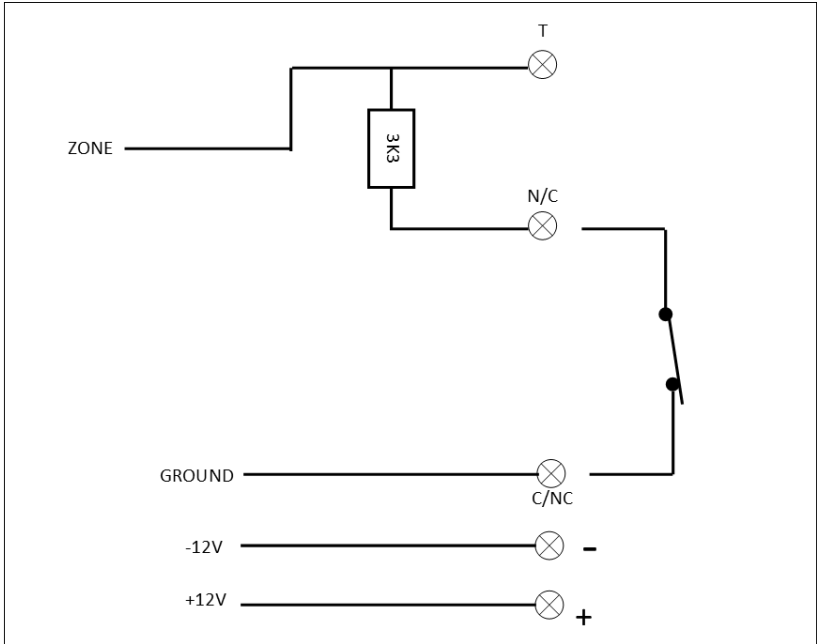


Figure 4: Connection: Tamper per Zone

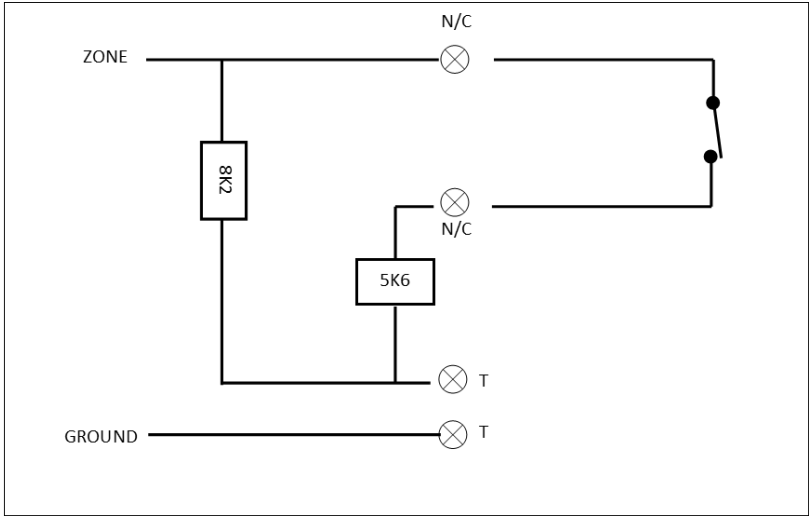
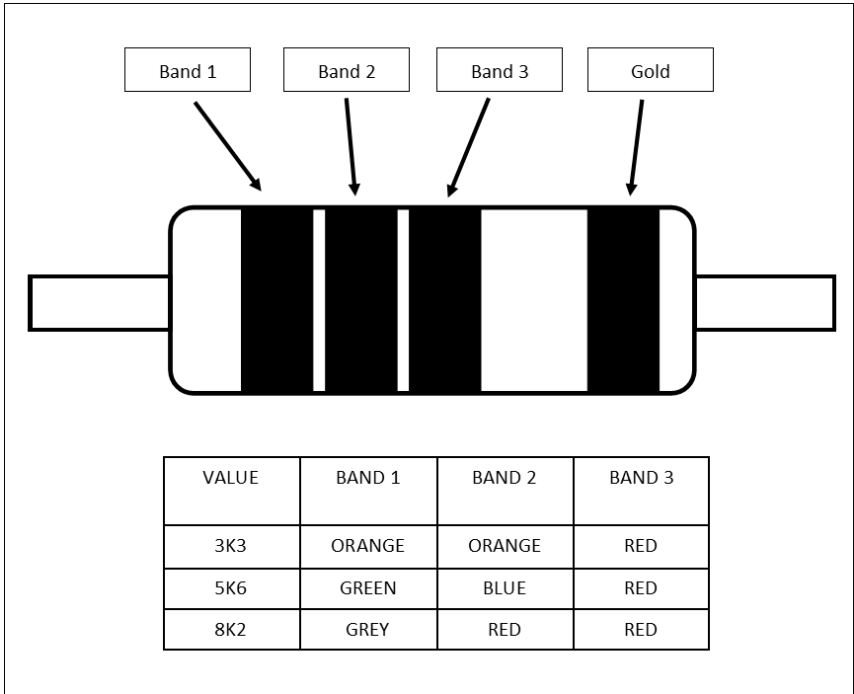


Figure 5: Resistors



2.2 Programmable Outputs

Current sink and source capability of the programmable outputs are as follows: Output high is a 12V source with a 56Ω series resistor. Output low is a 1000Ω resistor to negative. Any devices connected to a programmable output that require a high current must be connected via a relay board.

2.3 Key-Switch Arming/Disarming

The mi8 provides for arming and disarming using a momentary key-switch. The key switch must be a normally open spring-loaded type. If an external remote receiver is used it must provide a pulsed non-latching output.

When using a key-switch, the zone to which the key switch is connected must be programmed as an arm/disarm zone. Do not enable zone

tamper. By default, the arm zone will arm the panel immediately; however, an entry/exit delay may be enabled if required (see partition options).

2.4 Installing a Zone Expander Module

When installing a zone expander refer to the manual supplied with the module. **Note:** Only 1 expander module may be added to the mi8. The expander module provides 8 additional zones i.e., adding the expander module will provide zones 9-16. Each keypad provides 1 additional zone. A maximum of 8 keypads allows for 8 keypad zones. Keypad zones are disabled by default.

3 Additional Technical Data

- It is the installers responsibility to ensure a suitable transformer is used. For correct operation, a transformer with a full load output voltage of between 13 and 16VAC with a 32VA minimum power rating is required. Transformer regulation should be better than 10% from 0 to full load. A 48VA transformer is preferable for larger installations. If the combined current drawn from the Aux 12 V outputs and the battery boost current (0.5A) is in excess of the transformers current rating the transformer will fail.
- Use a 12V sealed lead acid battery with a minimum rating of 7AH. The backup period after mains failure will depend on the number of keypads, sensors, and peripheral devices attached to the system. The current drawn by the panel and 1 keypad (no indicators lit) excluding sensors is 250mA.
- The mi8's integral battery charger will charge the battery at a constant current of 0.4A. This constant current charge mode is indicated by the BOOST LED being illuminated. The battery charge mode changes from constant current to constant voltage when the battery voltage reaches 13.8V i.e., fully charged.
- The box tamper is not end-of-line supervised and a N/C contact indicates a closed box.

- If the keypad output is programmed as an ARM indicator, the output will be 12V when the panel is armed, 0V when disarmed, and flashing when an alarm has been activated.
- The auxiliary 12V outputs will provide a combined total of 1.5A. If this is exceeded the LED located closest to the heat sink marked I LIMIT will illuminate to indicate a current limit condition and the output voltage will become unstable. If this occurs, it is necessary to reduce the load presented to the panel.
- The siren output requires a self-driven 12-volt siren. The siren minus terminal is connected to ground. The positive terminal of the siren is connected to 12V via a relay during the siren period. This output is fused at 2A.
- If a radio transmitter is being used for monitoring purposes the power for the transmitter should be taken from the "TX+" terminal.
- **NOTE:** The TX+ terminal is protected by means of the battery fuse. If excessive current (2 amps max) is drawn from this terminal, battery power to the alarm may be lost.
- Low battery is reported when the battery voltage drops below 11.5V and restores when it rises above 12V. If the battery voltage drops below 10.5V the low battery cut-out is activated to prevent deep discharging of the battery.

4 Hardware Reset Switch

If the panel is powered up with the reset button pressed, the installer code will be defaulted to [9999]. This option is programmable and may be disabled (not recommended).

5 Remote Access

In order to access the alarm system remotely it is necessary to be registered as an authorised Finmon website user. Only alarm systems reporting to a monitoring company may be accessed by that monitoring company. On request, Finmon will issue a website username and password to authorised users. Upon gaining appropriate access to the alarm panel, full up/download functionality is provided. This provides for programming of various functions and features as well as retrieval of panel event history.

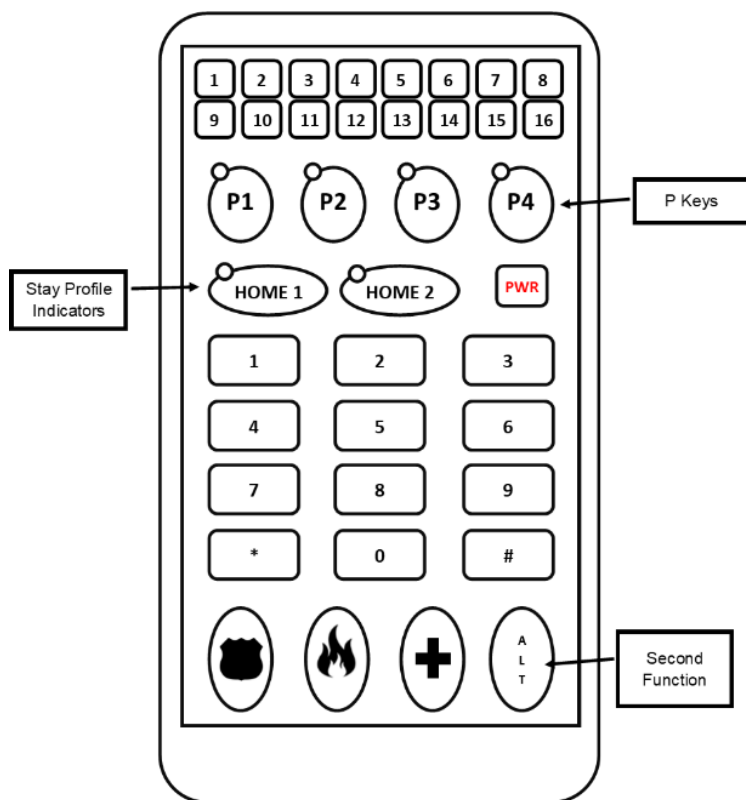
Additional download security may be enabled through programming mode.

(See Location 541.)

6 Enrolling Keypads

The mi8 supports up to eight keypads.

Figure 6: mi8 Keypad



Each keypad requires a unique address. This is achieved by setting the DIP switch on the keypad PC board. **NOTE:** Zero (all switches off) is not an allowable address.

6.1 Assigning a Keypad

- Set the keypad address using the DIP switches. See Figure 7 and Table 1.
- Wire the keypad to the keypad bus.

Figure 7: Location of Keypad DIP switch

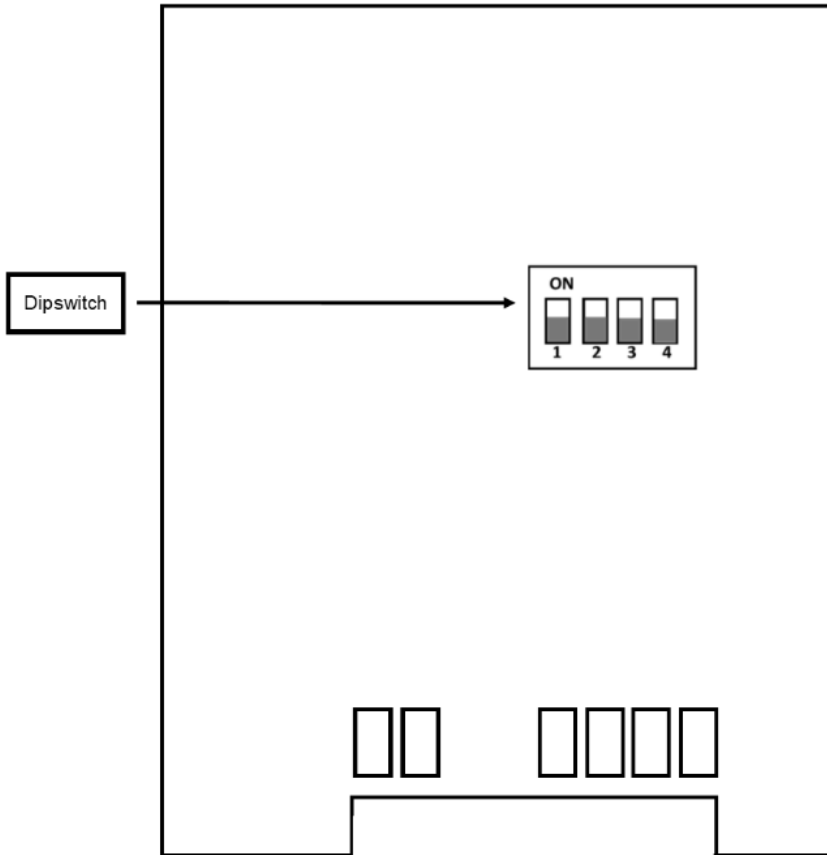


Table 1: Keypad Addresses

Keypad Address	Switches 0=Off 1=ON				Keypad Zone
	1	2	3	4	
1	1	0	0	0	57
2	0	1	0	0	58
3	1	1	0	0	59
4	0	0	1	0	60
5	1	0	1	0	61
6	0	1	1	0	62
7	1	1	1	0	63
8	0	0	0	1	64

6.2 Replacing Damaged Keypads

When replacing a damaged keypad:

- Remove the front of the keypad by loosening the locking screw. Insert a flat screwdriver to unlock the clips. Please note that the back cover of the keypad remains mounted.
- Make note of and set the new keypad to the same keypad address as the keypad being replaced.
- Clip the new keypad onto the back cover and tighten the locking screw.

7 Event Log

The mi8 maintains an internal history of alarm and related activity. The event log will retain in excess of 1000 events. Once the log is full the oldest events will be overwritten by newest event.

The event log may be retrieved by authorised users using the Finmon website.

8 Alarm Functionality

8.1 Keypad LED Indicators

Keys P1-P4 are partition selectors. At the top left of the partition selector is an associated status indicator. Keypads may be programmed to access any or all partitions. This must be programmed into location 6[P]00 (where [P] is the partition number). By default, all keypads may access all partitions. Only partitions with assigned zones will be displayed.

The partition status (indicated by the zone status indicators) will be displayed for all partitions; however, all other keypad indications apply to the selected partition only. The current selected partition's status indicator will be brighter than the others. Changing the partition is achieved by touching the appropriate [P] key.

Example: If P1 is the brightest green LED, you are viewing partition 1 and the zone status indicators will display the status of the zones that belong to partition 1. The overall status of the other partitions is indicated by the partition status indicator colour. To view the zone status of these partitions, touch the appropriate [P] key to select another partition.

Each keypad is assigned to a default partition to which it will return after a timeout period of approximately 30 seconds. The default partition may be programmed in location 6[P]01 (where [P] is the partition number).

Table 2: Partition Status LED Indicators

Indicator Colour	Description
Steady green	Partition ready to arm
Steady orange	Partition disarmed but not ready to arm i.e., some zones are violated
Flashing orange	Entry/exit delay
Steady red	Partition armed
Flashing red	Partition in an alarm condition

8.2 Stay Profile Indicators

When a selected partition is stay armed, the relevant home indicator (Home 1 or Home 2) will illuminate red. This indicates the active home (stay) profile.

It is not necessary to disarm the panel to change home profiles, simply select the alternate home profile.

8.3 Zone Status Indicators

Table 3: Zone Status Indicators

Zone status indicator	Description
Extinguished	Indicates a zone is clear
Flashing red	Indicates a violated zone
Steady illuminated	Indicates a bypassed zone

By default, a keypad's zone status indicators will display the status of zones 1-16, however each partition may have its own customised selection of displayed zones. This is an advanced programming option and may be programmed using locations 5181-5496

8.4 User Codes

Up to 64 users are supported by the mi8. User codes must be 4 digits long. Each user may be assigned to one, or any combination of partitions. The default master user code (User 1) is 1234 which is assigned to all four partitions.

8.5 Programming User Codes

USEFUL NOTE: When programming the mi8 the [*] key is an enter key and the [#] is a clear key (deletes any previously pressed keys) or may be used to exit back to the previous mode.

To access User Programming:

- Touch the [Alt] key followed by the [*] key. The partition status indicators will flash as follows: P1-Orange, P2-Green, P3-Green, P4-Orange.
- Enter a Master User Code followed by the [*] key. The keypad will beep, and the partition status indicators will flash - Green, Orange, Orange, Green.
- Select an option from the following table and then press [*].

Value	Function	Partition Status Indicators
1	Add a new user	Green, Orange, Orange, Green
2	Edit an existing user	Orange, Orange, Green, Green
3	Delete a user code	Green, Red, Red, Green
4	Delete a user by number	Red, Green, Green, Red
5	Add remote without code	Green, Orange, Orange, Orange

To indicate which option has been selected the partition status indicators will cease flashing and display as per the table above.

- For Add, Edit or Delete options (option 1, 2 and 3 above) enter the relevant user code and touch the [*] key.
- For Delete by user number (option 4 above) enter the user code number and touch the [*] key.

When deleting by user code or user number (option 3 and 4) codes/users may be deleted sequentially i.e. After deleting a code/user touch [*] followed by the next code/user followed by [*] etc. alternately touch [#] to exit the mode.

When Adding or Editing codes a partition status indicator will flash to indicate the selected Programming Page. Change between pages by touching the relevant [P] key.

Table 4: Programming Pages

Page	Function	Description															
1	Partition assignment	Select the partition number followed by [*] to add or remove partitions to and from a user's profile. Only partitions belonging to the profile of the master code used to access programming mode may be added or removed.															
2	User options	<p>Press the option number followed by [*] to enable and disable the options as per the table below.</p> <p>Table 5: User Code Options</p> <table> <tr> <th>Number</th><th>Option</th><th>Description</th></tr> <tr> <td>1</td><td>Master</td><td>Can add/remove and edit user codes.</td></tr> <tr> <td>2</td><td>Duress</td><td>A duress code will disarm the panel normally and a duress signal will be sent to the alarm monitoring company. This signals that a user has been forced to disarm the panel under duress.</td></tr> <tr> <td>3</td><td>Arm to Disarm</td><td>This code will only disarm a partition if the same Arm to Disarm code was used to arm. This code may be given to a user who has limited access to the premises.</td></tr> <tr> <td>4</td><td>Global Arm/Disarm</td><td>A Global code will simultaneously arm and disarm all</td></tr> </table>	Number	Option	Description	1	Master	Can add/remove and edit user codes.	2	Duress	A duress code will disarm the panel normally and a duress signal will be sent to the alarm monitoring company. This signals that a user has been forced to disarm the panel under duress.	3	Arm to Disarm	This code will only disarm a partition if the same Arm to Disarm code was used to arm. This code may be given to a user who has limited access to the premises.	4	Global Arm/Disarm	A Global code will simultaneously arm and disarm all
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4	Global Arm/Disarm	A Global code will simultaneously arm and disarm all															

				partitions in a user's profile. All partitions will follow the status of the partition which was selected at the time the code was entered.
		5	Remote long press disable	Pressing of any remote button for 3 seconds will generate a panic. Disable this feature by selecting this option.
3	Add remote functionality	Press any button on an unused remote in order to enrol it to this user. Only 1 remote may be assigned per user code and only one user may be assigned to a remote.		
4	Change user code or view user number	If you need to edit an existing user code, enter the new code followed by [*]. The user code will have been updated. The user number is displayed in binary format.		

8.6 Adding a Web App User

The mi8 in conjunction with the mi alarm web application allows users the following remote functionality:

- Status display.
- Arming and Disarming.
- Bypassing zones.
- Setting and clearing of outputs.

To add a web app user:

- Go to the mi alarm website: www.mialarm.co.za.
- Register as a user and log on.
- Select 'add a device' on the app, enter the serial number of the panel. This can be found on the front cover of the main alarm housing. Enter a valid user code for that alarm.

Note: If a master user is already registered with the alarm system it will be necessary for the master user to authorise any additional users.

8.7 Arming a Partition

If the partition status indicator is Green the partition is ready to arm. An Orange partition status indicator indicates that there are violated zones which will prevent arming. Violated zones must either be cleared or bypassed (if arming with bypassed zones is allowed) before the partition may be armed.

Arming using a user code:

- If the keypad is currently displaying the partition to be armed enter a [valid user code], alternately touch the required partition key to select the desired partition then enter the code.
- The partition status indicator will flash orange and the keypad will beep for the duration of the exit delay.

During the exit delay, zones which are assigned to the entry/exit route may be triggered without causing an alarm. If the final entry/exit zone is not violated and the panel is programmed accordingly the system will “assume” you have remained on the premises and arm into the home mode.

Arming with a quick arm key:

- If this function is enabled, hold the relevant P key until it flashes orange and the exit beep will sound.
- Exit through the entry/exit route before the delay times out.

If the final entry/exit zone is not violated and the panel is programmed accordingly the system will “assume” you have remained on the premises and arm into the home mode.

Home Arming:

Home arming is an arm mode in which pre-programmed zones (known as home or stay zones) are automatically bypassed. This allows access to

predetermined areas without activating an alarm. Two different home profiles may be set for each partition.

Partitions may be programmed to automatically stay arm if no entry/exit zone violation is detected during the exit delay. In this case entering a user code and not leaving the premises will result in stay arming using the last stay profile used. The relevant partition status indicator will illuminate red as will one of the home status indicators. This indicates which home profile is active.

Alternatively, ensure the correct partition is selected, as indicated by the partition status indicators then touch and hold the home key (approximately 2 seconds) relating to the required profile. The relevant home status indicator will illuminate red. If a partition is armed in Stay Mode holding the other Home key will change the profile without the need to disarm.

8.8 Disarming a Partition

Violating an entry/exit zone will start the entry delay allowing access to the keypad via the entry route. The partition status indicator will flash orange and the keypad will beep until a valid code is entered to disarm the partition. If the code is not entered before the delay ends, or a zone that is not part of the entry route is violated, the siren will sound, and an alarm will be reported to the monitoring company.

8.9 Alarms

When an alarm is registered either while the panel is armed, or by activating a 24hr zone (panic), the siren will sound, and the partition status indicator will flash red. The keypad zone/s indicator corresponding to the violated zone/s will be flashing. The alarm condition is cancelled by entering a user code on any keypad displaying the alarmed partition. The user code must be valid for the indicated partition.

Once the alarm has been cancelled, the zones which caused the alarm may be viewed by accessing the alarm memory. This is done by:

- Touching [Alt] followed by [0].
- To exit the alarm memory mode touch [#].
- A partition's alarm memory is overwritten each time that partition is armed.

8.10 Keypad Zone LEDs

By default, LEDs 1-16 display zones 1-16, however this may be programmed per partition under advanced options.

When programming Stay, Warning, Chime, or Bypassing zones, entering the zone indicator number will add or remove the zone assigned to that zone to or from the profile.

8.11 Setting up Stay Profiles

The mi8 provides two stay/home profiles per partition (Home 1 and Home 2).

Violation of a home zone will not activate an alarm while a partition is stay armed. Violation of a warning zone will cause the keypad to “buzz” for a period before triggering an alarm. If a valid user code is entered during the “warning buzz period” an alarm will not be registered. The warning zone function is only active when a partition is stay armed.

Programming stay and warning zones:

- Ensure the keypad is displaying the appropriate partition.
- Touch [ALT] and then the appropriate Home key [Home 1] or [Home 2].
- The Home key indicator will illuminate green, P1 status indicator will flash orange, P2, P3 and P4 status indicators will flash green indicating the selected home profile is ready for programming.
- The zone indicators which are programmed as home zones will illuminate. Zone indicators corresponding to zones programmed as warning zones will be flashing.
- Add and remove home zones from the profile by entering the [zone number] followed by [*].
- To program warning zones touch [P2], P2 status indicator will flash orange. Zone indicators corresponding to zones programmed as

warning zones will illuminate and zone indicators programmed as home zones will flash. Add and remove warning zones by entering the [zone number] followed by [*].

- [#] to exit mode.

8.12 Chime Zones

When a partition is not armed, and a chime zone is violated the keypad/s will beep e.g., a door may be programmed as a chime zone for an audible alert on opening. The keypad zone indicator will indicate which zone caused the chime for 30 seconds after the event.

Programming chime zones:

- Touch [ALT] and then [2].
- Enter the zone number corresponding to the zone to programme as a chime zone then [*].
- The zone indicator will illuminate.
- A chime zone may be cleared in the same way, enter the zone number then [*].
- Press [#] to exit the mode.

8.13 Bypassing Zones

To bypass a zone:

- Select [ALT] and then [9].
- Enter the zone number corresponding to the zone to be bypassed then [*].
- The zone indicator will illuminate.
- A bypassed zone may be cleared in the same way, enter the zone number then [*].
- Press [#] to exit the mode.

8.14 Fault Conditions

When the alarm system detects a fault condition the power indicator will change from green to red.

To view the fault:

- Touch [ALT] then [7].
- An illuminated zone indicator/s will indicate the fault condition/s. Refer to the table below.

Table 6: Fault Conditions

Zone Status Indicator	Fault Conditions
1	Siren Tamper
2	Auxiliary 12V Tamper
3	Box Tamper
4	AC Loss
5	Communication Fail
6	Low Battery
7	Device Tamper
8	Device Loss
9	Network Trouble

9 Programming Instructions

9.1 Introduction

The mi8 can be programmed either using the keypad or via the Finmon website. While all programming can be achieved using the keypad however it is recommended that all advanced programming be done using the Finmon website. Programming the panel by means of the keypad is explained in the following sections of this manual. For information on programming the panel using the website, please log into www.finmon.co.za and follow the instructions.

9.2 Location Values

In certain locations the zone indicators will display the contents of the location in binary format. In others, each LED indicates an option that is either enabled or disabled (bitmapped locations). The table below indicates how to interpret binary format.

Table 7: Value Represented by Each Zone Indicator

LED	Value
Zone 1	1
Zone 2	2
Zone 3	4
Zone 4	8

To read a binary value, add the values represented by each lit LED. The total value is the number being represented. For example, if zone indicators 1, 3 and 4 are illuminated, the value would be 13 as shown in the table below.

LED	Value
Zone 1 ON	1
Zone 2 OFF	0
Zone 3 ON	4
Zone 4 ON	8
Total	13

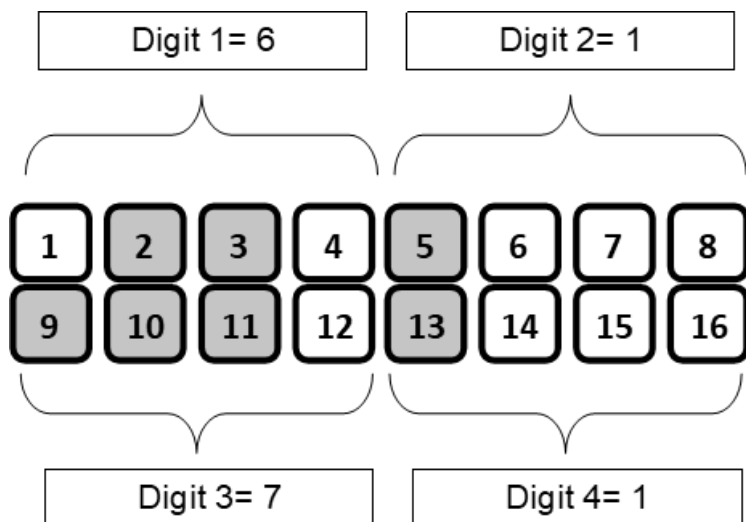
Table 8: Binary Representation

0=LED extinguished X=LED illuminated

Value	0	1	2	3	4	5	6	7	8	9
Zone 1 Indicator	0	x	0	x	0	x	0	x	0	x
Zone 2 Indicator	0	0	x	x	0	0	x	x	0	0

Zone 3 Indicator	0	0	0	0	x	x	x	x	0	0
Zone 4 Indicator	0	0	0	0	0	0	0	0	x	x

Example: If viewing a four-digit account code - digit 1 would be represented by LED 1-4, digit 2 by LED 5-8, digit 3 by 9-12, and digit 4 by 13-16.



10 Programming the Panel

For all programming procedures:

- The [*] key functions as the enter key.
- The [#] key functions as a clear key, backspace key, and to exit programming mode.

If an error is made e.g., an incorrect value is entered, the keypad will beep three times. The incorrect entry will be automatically disregarded and will allow the correct entry to be made without the [#] being pressed to clear the entry.

10.1 Entering Installer Mode

- Ensure that the panel is disarmed (all partitions).
- Touch the [#] key followed by the [INSTALLER CODE].
- The default installer code is 9999.
- Touch the [*] key, a long beep will confirm program mode entry, the partition status indicators will display red, green, green, red.

10.2 Programming Locations

The following procedure must be used to program locations:

- Enter the Installer Mode then enter the [LOCATION NUMBER] of the program location that you wish to change.
- Touch the [*] key.
- The partition status indicators will now change to green, red, red, green.
- The zone status indicators will now display the content of the selected program location. The contents may be in either binary or bitmapped format depending on the location selected.
- Enter the required value/make the selection then touch the [*]. **Note:** The new information is not entered until the star key is touched. If you do not wish to change the location value, touch the [#] key.
- If the data value has been changed, the buzzer will give a long beep indicating that a valid entry has been stored.
- Enter the next location number or press [#] to exit programming mode.
- On exiting programming mode, the keypad will once again display the panel status.

10.3 Programming Paged Locations

This procedure applies to programming time locations, setting up programmable output functionality and option locations where there are more options than zone indicators.

The following procedure should be used to program pages:

- After entering the location number, the partition 1 status indicator will flash indicating the first page is currently being displayed and is available to edit.
- The zone indicators will now display the relevant information for that page.
- To select another page, touch the associated partition key. The partition status indicator will now flash indicating that you have successfully entered this page. If the newly selected partition status indicator does not flash when selected, the selected page does not exist for this location.
- Entering information on the first page of the time and output locations will automatically advance the programming mode on to the next page, indicated by the relevant flashing partition status indicator. After completion of all programming pages touch [*].
- Alternatively press the [#] to exit.

10.4 Option Locations (Bitmapped Locations)

These locations are used for programming various panel options, and an illuminated zone indicator indicates that an option corresponding to that zone number is enabled.

- Enter the option number using the keypad numbers followed by the [*] key to toggle the status of each option.
- The corresponding zone indicator will illuminate or extinguish on the keypad. If the zone indicator is illuminated the option is selected. If the indicator is extinguished the option is not selected.
- If there are more than 16 options. Option 1-16 will be displayed on page 1, options 17-32 will be displayed on the second page. The second page is accessed by touching [P2].
- Touching the [*] key will save the displayed configuration.
- Touching the [#] key will exit the location.

10.4.1 Time Locations

Time locations are programmed as either minutes and seconds (mm:ss) or hours and minutes (hh:mm). All time locations consist of 2 pages accessed by touching either the P1 key (for page 1) or P2 key (for page 2). If the

location is a minutes and seconds page, page 1 is for programming minutes and page 2 is for seconds. Similarly, if the location is an hours and minutes page, page 1 is for programming hours and page 2 is for minutes.

- After entering the location number, the contents of the first page will be displayed.
- Enter a new value then [*].
- The second page will be displayed, enter a new value then touch [*].
- The value will be saved, and the unit will be ready for a new location number.
- Alternately, to view without changing values touch the relevant [P] keys to swap between pages and press the [#] key to exit.

10.4.2 Day Schedule Locations

These are 'Option Locations' where zone indicators correspond to days as per the following table.

Zone Indicator	Day
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

10.4.3 String Values

When programming account codes or custom Contact ID strings enter the values sequentially and then press [*].

11 Program Location Summary

Following is a detailed description of all locations.

11.1 Location 0: Defaulting Options

Programming Location 0 with a value from the table below will perform the action described:

Value	Action
0	Default all alarm settings
1	Default only the master user code and its properties
2	Default all user codes and their properties
3	Default the download code

11.1.1 Zone Types

For adding zones to partitions refer to Partition Options.

The following table indicates which locations correspond to which zones:

Table 9: Zone Locations

Zone	Locations
Onboard zones	1-8
Expander zones	9-16
Keypad Zones	91-98 – see notes below

NOTE:

Keypad zones will not be displayed on the keypad. Only the zones 1 to 16 i.e., zones on the main mi8 board and the expander board will be displayed by the keypad.

While all zones 1 to 16 will be reported with their corresponding zone number keypad zones will be reported as follows:

Keypad number	Reports as zone
1	57
2	58
3	59
4	60
5	61
6	62
7	63
8	64

Table 10: Programmable zone types

Value	Zone Type
0	Zone Disabled The zone will be disabled, and violation of this zone will be ignored.
1	Primary Entry/Exit For an armed partition, the violation of a Primary Entry/Exit zone will initiate the primary entry delay. The duration of this delay is programmed under partition options. If a valid code is not entered before the entry delay period expires, an alarm condition will be registered. Violations of entry/exit zones are ignored during an exit delay.
2	Secondary Entry/Exit For an armed partition, the violation of a Secondary Entry/Exit zone will initiate the secondary entry delay. The duration of this delay is programmed under partition options. If a valid code is not entered before the entry delay period expires, an alarm condition will be registered. Violations of Entry/Exit zones are ignored during an exit delay.

Value	Zone Type
3	<p>Follower</p> <p>Violation of a Follower zone during the exit delay will not activate an alarm. If the partition is armed, violation of a Follower zone without violating an entry/exit zone will cause an immediate alarm activation. If an Entry/Exit zone is violated, thereby starting an entry delay, violations of Follower zones during the entry delay will not cause an alarm activation.</p>
4	<p>Arm</p> <p>Violation of an Arm zone will cause the partition to which the zone is assigned to arm or disarm depending on its current status. To use this zone type, connect a momentary key-switch or a non-latching remote-control unit to this zone. An end-of-line resistor will still be required.</p>
5	<p>Panic</p> <p>Violation of a Panic zone will report a panic condition regardless of whether the panel is armed or disarmed. By default, the siren output will activate. This may be disabled (silent panic) in the corresponding zone option location.</p>
6	<p>Burglary</p> <p>If the panel is armed, the violation of a Burglary zone will cause the control panel to report an alarm condition. The behaviour of the siren will depend upon the value programmed into the corresponding zone option location. When the panel is disarmed, a violation of a Burglary zone is ignored.</p>
7	<p>24hr</p> <p>Regardless of whether the panel is armed or not, a violation of a 24-Hour Alarm zone will cause the panel to register a burglary condition.</p>
8	<p>Tamper</p> <p>Violation of a Tamper zone will be reported regardless of whether the panel is armed or not. By default, the siren will be triggered if the partition is armed and a Tamper zone is violated. If the partition is not armed and a Tamper zone is</p>

Value	Zone Type
	violated the tamper condition will be reported, however the siren will not sound.
9	Guard Monitor Violation of a Guard zone will report with the guard monitoring code and will not cause an alarm condition. Reporting of this zone violation is not dependant on the armed status of the partition.
10	Outdoor An Outdoor zone will behave as per a burglary zone; however, an outdoor alarm will be reported. This contact ID reporting code is different to a burglary zone.
11	Fire A violation will report a Fire condition regardless of the arm status. The fire output will be activated, and the siren will pulse on and off at 1 second intervals.
12	Silent Panic Violation of a Silent Panic zone will report a panic condition regardless of whether the panel is armed or disarmed. There will be no audible or visual indication of the zone being violated, but the panic condition will be reported.

Table 11: Zone Defaults

Location	Zone	Default Option	Zone Type
1	1	1	Entry/Exit
2-3	2-3	3	Follower
4-15	4-15	6	Burglary
8	8	5	Panic

11.2 Location 201-298: Zone Options (Advanced option)

Digit 2 and 3 of the location number correspond to the zone number i.e., location **201** is zone 1 options, **202** is zone 2 options, and **216** is zone 16 options. Keypad zone locations location begin at location 291 i.e., keypad 1 zone option is programmed at location 291.

It is generally not necessary to change these locations. This is an advanced option to be used if customising zone types. Each zone type has a default set of pre-programmed options. If a zone type is changed i.e., from an entry/exit zone to a follower zone or reprogrammed i.e., a fire zone is reprogrammed as an alarm zone, the default zone options for that zone will be reloaded.

Table 12: Zone Options

Page	Zone Option Number	Zone Option
P1	1	Entry 1 Options
P1	2	Entry 2 Options
P1	3	Entry/Exit Route
P1	4	Report Armed
P1	5	Report Always
P1	6	Alarm Armed
P1	7	Alarm Always
P1	8	Tamper Monitor
P1	9	Alarmed Arm Tamper
P1	10	Alarm Disarmed Tamper
P1	11	Cross Zone
P1	12	Shutdown Enabled
P1	13	Short-Loop Response
P1	14	Warning (buzz)
P1	15	Chime
P1	16	Arm
P2	1	Priority

Page	Zone Option Number	Zone Option
P2	2	Fire
P2	3	Tamper
P2	4-16	Reserved*

Table 13: Zone Option Descriptions

Zone Option	Description
Entry 1	An Entry/Exit zone using the primary entry delay.
Entry 2	An Entry/Exit zone using the secondary entry delay.
Entry/Exit Route	Follower zone.
Report Armed	Violation of this zone will be reported when the panel is armed.
Report Always	Violation of this zone will report all violations whether the panel is armed or not.
Alarm Armed	If the panel is armed and this zone is violated the siren will sound, the strobe output will activate, and the partition LED will flash red.
Alarm Always	Regardless of the arm status, if the zone is violated the siren will sound, the strobe output will activate, and the partition LED will flash red.
Tamper Monitor	The zone is monitored for tamper (using dual end-of-line resistors). The tamper will always be reported regardless of whether the panel is armed or not.
Alarmed Arm Tamper	The siren will activate if the zone is tampered in an armed state.
Alarm Disarmed Tamper	The siren will activate if the zone is tampered in a disarmed state.

Zone Option	Description
Cross Zone	Zones programmed as Cross zones will not immediately generate an alarm when violated. A number of violations must be registered within a specified time before the alarm is activated and the zone violations are reported. The violations may be in the same zone or any other zones programmed as Cross zones. The Cross zone time will be set in minutes. The Cross zone count and time is programmed for each partition. By default, a count of 2 within 5 minutes will activate the alarm.
Shutdown Enabled	If set, this zone will be included in the swinger shut down group.
Short-Loop Response	This zone will register a violation after 16 ms. If this option is disabled a violation will be registered after 100 ms.
Buzz	When a partition is stay armed, violating a buzz zone will cause the keypads to beep for a period corresponding to the primary entry delay. No alarm will be reported during this period. If the partition is disarmed during this time no alarm will be registered. If the partition is not disarmed during the delay period, an alarm will be activated.
Chime	Violating a Chime zone when the panel is disarmed will cause the keypad to beep for a short time.
Arm	Violating an Arm zone will arm or disarm the partition depending on its status.

Zone Option	Description
Priority	A Priority zone will activate the panic output rather than the burglary output.
Fire	A zone with this option set will trigger the fire output and cause the siren to pulse rather than sound continuously.

11.3 Location 3011-3926: Zone Reporting Codes (Advanced option)

Although it is not recommended, provision is made for customising zone reporting codes. Select the location number and enter the four-digit Contact ID string required followed by [*], the panel will automatically append the appropriate zone and partition numbers when sending the code.

Zone Number	Location for Violation Code	Location for Restoral Code
1 (onboard zone)	3011	3012
2 (onboard zone)	3013	3014
3 (onboard zone)	3015	3016
4 (onboard zone)	3017	3018
5 (onboard zone)	3019	3020
6 (onboard zone)	3021	3022
7 (onboard zone)	3023	3024
8 (onboard zone)	3025	3026
9 (expander zone)	3171	3172
10 (expander zone)	3173	3174
11 (expander zone)	3175	3176

Zone Number	Location for Violation Code	Location for Restoral Code
12 (expander zone)	3177	3178
13 (expander zone)	3179	3180
14 (expander zone)	3181	3182
15 (expander zone)	3183	3184
16 (expander zone)	3185	3186
57 (keypad 1 zone)	3911	3912
58 (keypad 2 zone)	3013	3914
59 (keypad 3 zone)	3915	3916
60 (keypad 4 zone)	3917	3918
61 (keypad 5 zone)	3919	3920
62 (keypad 6 zone)	3921	3922
63 (keypad 7 zone)	3923	3924
64 (keypad 8 zone)	3925	3926

11.4 Location 400-453: General Setup Options

These are settings that do not affect a specific partition but affect the entire alarm system.

11.5 Location 400: General Setup (Bitmapped Location)

To enable or disable the following functions toggle the appropriate zone indicator on or off. This is achieved by selecting the zone number followed by [*]. A selected function is enabled if the corresponding zone indicator is illuminated.

Zone indicator	Option	Description	Default
1	Global Siren Cancel	Enables a user to cancel a siren which has been activated in another partition.	Enabled
2	Siren Tamper	Enables siren tamper monitoring. This will indicate if the siren wires have been either shorted or cut.	Enabled
3	Device Tamper	Enables the monitoring of devices connected to the RS485 bus.	Enabled
4	Disable Installer Reset	Set this option to disable the hardware reset switch.	Enabled
5	Shutdown Re-enable	Enabling this function means that any swinger shutdown zones will be reactivated daily.	Enabled
6	Siren (relay) output function	This option selects whether the siren (relay) output is used as a siren output or a programmable output (output 24)	Siren output (disabled)

11.5.1 Location 401: Keypad Display of Fault Conditions (Bitmapped Location)

Selects which fault conditions will be displayed on the keypad. Fault conditions will always be reported, and a fault condition will be indicated on the keypad by means of a red PWR indicator (and an optional keypad beep). By default, all fault conditions will be displayed.

To enable or disable the display of following fault conditions toggle the appropriate zone indicator on or off. This is achieved by selecting the

zone number followed by [*]. A selected fault condition will be displayed if the corresponding zone indicator is illuminated.

Note: Fault condition indications will automatically clear once the fault condition is remedied.

Table 14: Fault Condition Descriptions

No.	Fault Condition	Description	Default
1	Siren Tamper	Indicates if the siren is open or short circuited.	Enabled
2	Aux 12V	Indicates an over current condition of the auxiliary 12V.	Enabled
3	Box tamper	Indicates when the alarm box is opened.	Enabled
4	AC loss	Indicates AC failure. This is only indicated after the AC failure delay.	Enabled
5	Communications fail	Indicates when the alarm system is unable to communicate with any of the IP addresses, no GSM connection or no more SMS's available. The condition will clear on a successful communication.	Enabled
6	Low battery	Low battery is indicated when the battery voltage drops below 11.5V and restores when it reaches 12V. If the battery voltage drops below 10.5V the low battery cut-out is activated to prevent deep discharging of the battery.	Enabled

No.	Fault Condition	Description	Default
7	Device tamper	A device tamper is indicated when a keypad, or expander tamper condition occurs. Viewing of this trouble condition will clear the indication.	Enabled
8	Device loss	This indicates when the panel detects that a device connected to the RS485 bus is no longer communicating. Viewing of this trouble condition will clear the indication.	Enabled
9	Network failure	Network failure is indicated when the modem is unable to establish a connection to the alarm server.	Disabled

11.6 Location 402: AC Fail Delay (Time Location)

A time location programmed in minutes and seconds which sets the delay before an AC Fail condition is registered. The default delay is 15 minutes. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

11.7 Location 403: Siren Timeout (Time Location)

A time location programmed in minutes and seconds which sets the time for which the siren will sound when an alarm is registered and not cancelled. The default siren time is 30 seconds. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

11.8 Location 404: Auto Test Interval (Time Location)

A time location programmed in days and hours to set the time between Auto Test Reports. The default auto test interval is 1 day and the shortest programmable time is 1 hour. When programming this location enter the location and select [P1] then select the number of days, touch [P2] then enter the number of hours then press [*] to enter the selection.

11.9 Location 405: Auto Test Time (Time Location)

A time location programmed in hours and minutes which sets the time at which the Auto Test will be reported. **The hours location of the auto test interval (location 404 P2) must be set to zero for this location to take effect.** The default auto test time is randomised but will be reported at the same time each day. When programming this location enter the location and select [P1] then select the hour, touch [P2] then enter the minutes of the test time then press [*] to enter the selection.

11.10 Location 406: Auto Test Reporting Code (String Location, Advanced Option)

This is a string location containing the nine characters that follow the account code and format identifier in the Contact ID string. The default is a standard periodic test string consisting of account code followed by 181 602 000. When programming this location enter the location then enter all 9 characters sequentially then press [*] to enter.

11.11 Location 407: Invert Outputs (Bitmapped Location, Advanced Option)

This is an option location to select the outputs to invert.

By default, the panel outputs are positive trigger. When cleared the output is at 0 volts and 12 volts is present when the output is triggered. Invert the output for the opposite result, i.e., an output that is at 12V in the clear state and 0V when triggered.

In order to program an output with inverted logic:

- Enter program mode, select location 407.
- Zone indicators corresponding to outputs which are **NOT** inverted will **NOT** be illuminated.
- To invert a given output select the required output from the table below by pressing the corresponding number on the keypad.
- Then touch [*].

Table 15: Outputs to Invert

Zone Indicator	Page 1 (P1)	Page 2 (P2)
1	Output 1	Keypad 2 Output
2	Output 2	Keypad 3 Output
3	Output 3	Keypad 4 Output
4	Output 4	Keypad 5 Output
5	Output 5	Keypad 6 Output
6	Output 6 (Expander)	Keypad 7 Output
7	Output 7 (Expander)	Keypad 8 Output
8	Not Used	Output 24 (Relay Output)
9	Not Used	Not Used
10	Not Used	Not Used
11	Not Used	Not Used
12	Not Used	Not Used
13	Not Used	Not Used
14	Not Used	Not Used
15	Not Used	Not Used
16	Keypad 1 Output	Not Used

Example: Assume the output on keypad 4 is to be inverted, enter program mode, select location 407, using the table above select page 2 by touching the [P2] key, touch the [3] key (Zone indicator 3 will illuminate) then touch [*].

11.12 Location 408: Shutdown Count (String Location)

This location determines the number of times a zone may be violated during an arm cycle before automatic bypassing. This count applies to all zones that have shutdown enabled. The default count is 10.

11.13 Location 410-423: Output Functions (Combination Page and String Location)

An output may be programmed to perform a specific action if a certain event occurs. For each action location the output number is programmed on page 1 (partition 1 status indicator flashing), and the action on page 2 (partition 2 status indicator flashing). To disable a function set its action to 0.

Table 16: Output Numbers

Output Device	Output Number	Description
Panel Onboard Outputs	1-5	These are the onboard outputs labelled PGM1-PGM5
Expander 1	6-7	6: PGM 1 on expander 1 7: PGM 2 on expander 1
Relay (Siren Output)	24	Siren Output
Keypad Outputs	16-23	16: Keypad 1 output 17: Keypad 2 output 18: Keypad 3 output 19: Keypad 4 output 20: Keypad 5 output 21: Keypad 6 output 22: Keypad 7 output 23: Keypad 8 output

Table 17: Output Actions

Value	Output Action	Description
0	None	No action.
1	Set	The output will be set high (+12V)*.
2	Clear	The output will be set low (0V)*.
3	Pulse	The output will be set high (+12V) for a period (as programmed in advanced locations 70100 to 72400) and then return to 0V. The period may be programmed per output. The default pulse period is 3 seconds.

NOTE: The opposite voltages will apply if the output has been programmed to be inverted in location 407.

Table 18: Output Events

Location	Event to be assigned to an Output	Default Output (P1)	Default Action (P2)
410	AC fail	4	1 (set)
411	AC restore	4	2 (clear)
412	Low battery	5	1 (set)
413	Battery restore	5	2 (clear)
414	Auto test	0 (Not Assigned)	0 (disabled)
415	Siren trouble	0	0
416	Aux 12 V trouble	0	0
417	Expansion module tamper	0	0
418	Expansion module loss	0	0
419	Box tamper	0	0
420	Communications failure	0	0
421	RF jamming	0	0
422	RF jamming restore	0	0
423	Network trouble	0	0

Example: Program expansion module tamper to pulse keypad 1 output. Enter program mode and select location 417. Touch [P1] enter [9][1] (Keypad 1 output from table 16 above), touch [P2] enter [3] (pulse from table 17 above) touch [*] to enter the selection.

11.14 Location 450 – Installer Code (String Location)

The default installer code is [9999].

- To change the installer code, enter location 450.
- A binary representation of the current installer code will be displayed.
- Enter [NEW 4 DIGIT CODE] followed by [*].

11.15 Location 451 - Download Options (String Location)

Enter the value for the remote access security level required. The default download code is [5678].

Table 19: Download Options

Value	Action
0	No download code required. The panel may be accessed via the Finmon website without a download security code. This can only be done if the panel is assigned to a customer and the user has valid access.
1 Default	A download code must be entered from the customers webpage before access is granted.
2	A download code must be entered from the customers web page and the master user code must be entered on the keypad before access is granted.
3	No download access allowed.

11.16 Location 452 – Download Code (String Location)

The default download code is [5678].

- To change the download code, enter location 452.
- A binary representation of the current download code will be displayed.
- Enter [NEW 4 DIGIT CODE] followed by [*].

11.17 Location 453 – Set Time (Time Location)

NOTE: Only program this location if the mi8 is NOT connecting via an internal GSM modem. If the mi8 has an installed GSM modem network time will automatically synchronise the panel clock, thereby ensuring the internal clock is always correct.

A time location programmed in hours and minutes (24-hour clock). When programming this location enter the location and select [P1] then enter the hour in 24-hour format, touch [P2] then enter the minutes then press [*] to enter the selection.

11.18 Location 454 - Set Date (String Location)

NOTE: Only program this location if the mi8 is NOT connecting via an internal GSM modem. If the mi8 has an installed GSM modem network date will automatically synchronise the panel calendar, thereby ensuring the internal calendar is always correct.

This is a string location entered in the following format: ddmmyyyy.

12 Partition Set Up

The mi8 makes provision for up to four partitions.

When entering partition location numbers replace 'P' with the relevant partition number e.g. The account code for Partition 1 will be programmed into location 5100 and partition 2 into location 5200.

12.1 Location 5[P]00: Account Codes (String Location)

These 4 locations are string locations into which a four-digit account code is programmed. The [P] in the location number must be replaced by the partition number i.e., to program the account number for partition 3 the location number would be 5[3]00. This account number will be reported to the alarm monitoring company and is programmed per partition. It is not necessary to program account numbers for unused partitions. The default account code for all four partitions is 9998.

12.2 Location 5[P]01: Assigning Zones to the Partition (Combination Page and Bitmapped Location)

This option location has two pages. The [P] in the location number must be replaced by the partition number i.e., to assign zones to partition 3 the location number would be 5[3]01. To assign zones to a partition enter program mode then select the location for the partition to which the zones will be assigned followed by [*]. Select the relevant page from table 20 below, then select the required zone using the number keys followed by [*].

Example: Assign zone 10 and Keypad 2 zone (zone 57) to partition 4:

- Enter [5401][*] to enter the location for assigning zones to partition 4.
- Touch [P1] to select page 1 (from table 20 below).
- Enter [10] to select zone 10.
- Touch [P4] to select page 4 (from table 20 below).
- Enter [9]. Notice in table 20 below, zone 9 on page 4 corresponds to zone 57 (keypad 2 zone).
- Enter [*].

Table 20: Assigning Zones to Partition

Zone Indicator	Page 1 (P1)	Page 4 (P4)
1	Zone 1 (Main PCB)	Not Used
2	Zone 2 (Main PCB)	Not Used
3	Zone 3 (Main PCB)	Not Used
4	Zone 4 (Main PCB)	Not Used
5	Zone 5 (Main PCB)	Not Used
6	Zone 6 (Main PCB)	Not Used
7	Zone 7 (Main PCB)	Not Used
8	Zone 8 (Main PCB)	Not Used
9	Zone 9 (Expander PCB)	Zone 57 (Keypad 1 Zone)
10	Zone 10 (Expander PCB)	Zone 58 (Keypad 2 Zone)
11	Zone 11 (Expander PCB)	Zone 59 (Keypad 3 Zone)
12	Zone 12 (Expander PCB)	Zone 60 (Keypad 4 Zone)
13	Zone 13 (Expander PCB)	Zone 61 (Keypad 5 Zone)
14	Zone 14 (Expander PCB)	Zone 62 (Keypad 6 Zone)
15	Zone 15 (Expander PCB)	Zone 63 (Keypad 7 Zone)
16	Zone 16 (Expander PCB)	Zone 64 (Keypad 8 Zone)

12.3 Location 5[P]02: Partition Options (Combination Page and Bitmapped Location)

This option location has two pages. The [P] in the location number must be replaced by the partition number i.e., to select options for partition 3 the location number would be 5[3]02. To selection options for a partition enter program mode then select the location for the partition to be configured followed by [*].

Select the relevant page from table 21 below, then select or deselect the options as required using the number keys. An illuminated zone indicator indicates an option is enabled and an extinguished zone indicator indicates a disabled option. Once the selection is complete touch the [*] key to enter the options as selected.

Example: Set the following options for partition 1, deselect quick away arm, enable stay arm reporting, and enable stay arm siren toot.

- Enter [5101][*] to enter the location for selecting and deselecting options for partition 1.
- Touch [P1] to select page 1 (from table 21 below).
- Zone 3 indicator will be illuminated indicating that quick away arm is enabled, touch [3]. Zone 3 indicator will extinguish showing quick away arm has been disabled.
- Touch [16], zone 16 indicator will illuminate indicating the option has been selected.
- Touch [P2] to select page 2 (from table 21 below).
- Touch [5] to enable siren toot when away arming or disarming.
- Enter [*] to commit the changes to memory.

Table 21: Partition Options

Page	ZONE LED	Option	Description	Default
P1	1	Instant User Code Arm	If enabled there is no exit delay when a partition is armed.	Disabled
P1	2	Instant Arm when Zone Arming	If enabled there is no exit delay when arming using an Arm zone.	Enabled
P1	3	Quick Away	Enables the Quick Away Arm keys.	Enabled
P1	4	Quick Stay	Enables the Quick Stay Arm keys.	Enabled
P1	5	Auto User Code Stay	The partition will stay arm when the partition is armed from a keypad and no Exit zone is violated during the exit delay.	Enabled

Page	ZONE LED	Option	Description	Default
P1	6	Auto Arm Zone Stay	Enables auto stay arm detection when arming using an Arm zone.	Disabled
P1	7	Forced Arm	If enabled, the partition may be armed with violated zones. When the partition is armed, any violated zones are automatically bypassed. If the zone subsequently clears during the arm cycle it will become active.	Disabled
P1	8	Bypass	This option must be enabled to allow bypassing of zones assigned to this partition.	Enabled
P1	9	Arm with violated exit route zones	If this option is enabled the panel may be armed with follower zones and entry/exit zones violated.	Enabled
P1	10	Arm/Disarm Siren Toot	If enabled the siren will sound for a short period when the partition is armed and two short pulses when disarmed.	Enabled
P1	11	Entry Keypad Beep	If enabled the keypad will beep during the entry delay.	Enabled
P1	12	Exit Keypad Beep	If enabled the keypad will beep during the exit delay.	Enabled

Page	ZONE LED	Option	Description	Default
P1	13	Auto Disarm	Unless this option is enabled the time and days programmed in the Auto Disarm Schedule will be ignored.	Disabled
P1	14	Common Bypass	This option allows bypassing of zones which are shared by more than 1 partition.	Disabled
P1	15	Report Quick Arm	If enabled the panel will report when this partition is quick armed. If you wish to monitor opening and closings for this partition, this option should be enabled.	Enabled
P1	16	Report Stay Arm	If enabled the panel will report when this partition is stay armed.	Disabled
P2	1	Silent Keypad Panic	If enabled, keypad panics, remote panics, and incoming GPRS panics will be reported - however the siren will not be activated, and the alarm condition will not show on the keypad.	Disabled
	2	Home Key Disarm	Selecting this option allows the panel to be disarmed using the same home key that was used to home arm the panel. It only applies to home keys when home armed.	Disabled

Page	ZONE LED	Option	Description	Default
	3	Home Arm Entry/Exit Enable	Selecting this option will cause an entry/exit zone which is programmed as a warning zone to sound the keypad intermittently (entry delay sound).	Disabled
	4	Silent App Arm	If enabled the keypad will not sound when the panel is armed or disarmed using the App.	Disabled
	5	Stay Arm/Disarm Siren Toot	If enabled the siren will sound for a short period when the partition is home armed and two short pulses when disarmed.	Disabled

12.4 Location 5[P]10: Primary Entry Delay Time (Time Location)

This time location is used for programming the primary entry delay time. This timer begins when a primary Entry/Exit zone is violated. If a valid code is not entered prior to expiry of the delay or an alarm zone is activated the siren will sound. The default entry delay period is 2 minutes.

The program format is minutes and seconds. The [P] in the location number must be replaced by the partition number i.e., to select the entry delay for partition 3 the location number would be 5[3]10. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

12.5 Location 5[P]11: Secondary Entry Delay Time (Time Location)

This time location is used for programming the secondary entry delay time. This timer begins when a secondary Entry/Exit zone is violated. If a valid code is not entered prior to expiry of the delay or an alarm zone is activated the siren will sound.

The program format is minutes and seconds. The [P] in the location number must be replaced by the partition number i.e., to select the entry delay for partition 3 the location number would be 5[3]10. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

12.6 Location 5[P]12: Exit Delay Time (Time Location)

This time location is used for programming the exit delay time. This timer begins when the panel is armed either by entering a valid code or the quick arm key is pressed.

The program format is minutes and seconds. The [P] in the location number must be replaced by the partition number i.e., to select the exit delay for partition 3 the location number would be 5[3]12. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

12.7 Location 5[P]20 to 5[P]23: Partition Specific Output Events (String Location)

Enter the output number required to perform the following functions, or 0 to disable the function. Note that all of these functions are disabled by default. The [P] in the location number must be replaced by the partition number i.e., to select output 5 to trigger when partition 2 chime zone is activated. use table 22 below using the column under location for

partition 2. Find this function (last row) then program a 5 into location 5[2]23. A list of output numbers assigned to the main board, expander module and keypads can be found in table 23 below.

Table 22: Partition Specific Output Events

Description	Location for Partition 1	Location for Partition 2	Location for Partition 3	Location for Partition 4
Arm Output: This output will be set when the partition is armed, cleared when it is disarmed, and flashing when an alarm has been triggered.	5120	5220	5320	5420
Siren Output: This output is set when an alarm is triggered in this partition and clears after the siren timeout or when the alarm is cancelled by a user.	5121	5221	5321	5421
Strobe Output: This output is set when an alarm is triggered in this partition and is only cleared when the alarm is cancelled, or the partition disarmed.	5122	5222	5322	5422

Description	Location for Partition 1	Location for Partition 2	Location for Partition 3	Location for Partition 4
Chime Output: This output pulses when a chime zone is triggered.	5123	5223	5323	5423

Table 23: Output Numbers

Output Device	Output Number	Description
Panel Onboard Outputs	1-5	These are the onboard outputs labelled PGM1-PGM5
Expander 1	6-7	6: PGM 1 on expander 1 7: PGM 2 on expander 1
Relay (Siren Output)	24	Siren Output
Keypad Outputs	16-23	16: Keypad 1 output 17: Keypad 2 output 18: Keypad 3 output 19: Keypad 4 output 20: Keypad 5 output 21: Keypad 6 output 22: Keypad 7 output 23: Keypad 8 output

12.8 Location 5[P]30-5[P]46: Partition Output Options (Combination Page and String Location)

An output may be programmed to perform a specific action if certain partition related events occur. For each action location the output number is programmed on page 1 (partition 1 status indicator flashing), and the action on page 2 (partition 2 status indicator flashing). To disable a function set its action to 0.

Refer to table 23 for the output numbers.

Table 24: Output Actions

Value	Output Action	Description
0	None	No action.
1	Set	The output will be set high (+12V)*.
2	Clear	The output will be set low (0V)*.
3	Pulse	The output will be set high (+12V) for a period (as programmed in advanced locations 70100 to 72400) and then return to 0V. The period may be programmed per output. The default pulse period is 3 seconds.

* The opposite voltages will apply if the output has been programmed to be inverted in location 407.

The program defaults for 'Open' and 'Close' are for Partition 1. These functions are disabled for the other partitions. All other defaults apply to all partitions.

Table 25: Partition Output Event Table

Description	Partition 1 Location and (default)	Partition 2 location and (default)	Partition 3 location and (default)	Partition 4 location and (default)
Close Output	5130 (output 3 set)	5230	5330	5430
Stay Close Output	5131	5231	5331	5431
Open Output	5132 (output 3 clear)	5232	5332	5432
Cancel Output	5133	5233	5333	5433
Alarm Restoral Output	5134	5234	5334	5434

Description	Partition 1 Location and (default)	Partition 2 location and (default)	Partition 3 location and (default)	Partition 4 location and (default)
Bypass Output	5135	5235	5335	5435
Forced Arm Output	5136	5236	5336	5436
Zone Tamper Output	5137	5237	5337	5437
Zone Tamper Restoral Output	5138	5238	5338	5438
Shutdown Output	5139	5239	5339	5439
Shutdown Restoral Output	5140	5240	5340	5440
Medical Output	5141	5241	5341	5441
Duress Output	5142 (output 1 pulse)	5242 (output 1 pulse)	5342 (output 1 pulse)	5442 (output 1 pulse)
Burglary Output	5143 (output 2 pulse)	5243 (output 2 pulse)	5343 (output 2 pulse)	5443 (output 2 pulse)
Panic Output	5144 (output 1 pulse)	5244 (output 1 pulse)	5344 (output 1 pulse)	5444 (output 1 pulse)
Fire Output	5145	5245	5345	5445
Tamper Zone Output	5146	5246	5346	5446

12.9 Location 5[P]50: Outputs to Clear on Open or Cancel (bitmapped location)

This option location has two pages. The [P] in the location number must be replaced by the partition number. If latching outputs are used for reporting these outputs may be cleared when the partition is disarmed, or an alarm is cancelled. Outputs corresponding to illuminated zone indicators will be cleared when the partition is disarmed, or an alarm is cancelled. Use the corresponding number keys on the keypad to toggle. For example, to illuminate zone 3 indicator, press number key [3] followed by [*].

Example: Clear output 16 (keypad 1 output) when partition 4 is disarmed:

- Enter [5450][*] to enter the location for clearing outputs when cancelling an alarm or opening partition 4.
- Touch [P1] to select page 1 (from table 26 below).
- Enter [16] to select zone 16 (representing output 16). Zone 16 indicator will illuminate.
- Enter [*] to commit the selection to memory.

Table 26: Outputs to Clear on Open or Cancel

Zone Indicator	Page 1 (P1)	Page 4 (P4)
1	Output 1 (Main PCB)	Output 17 (keypad 2 Output)
2	Output 2 (Main PCB)	Output 18 (keypad 3 Output)
3	Output 3 (Main PCB)	Output 19 (keypad 4 Output)
4	Output 4 (Main PCB)	Output 20 (keypad 5 Output)
5	Output 5 (Main PCB)	Output 21 (keypad 6 Output)
6	Output 6 (Expander PCB)	Output 22 (keypad 7 Output)
7	Output 7 (Expander PCB)	Output 23 (keypad 8 Output)
8	Not Used	Output 23 (Relay Output)
9	Not Used	Not Used
10	Not Used	Not Used
11	Not Used	Not Used

Zone Indicator	Page 1 (P1)	Page 4 (P4)
12	Not Used	Not Used
13	Not Used	Not Used
14	Not Used	Not Used
15	Not Used	Not Used
16	Output 16 (keypad 1 Output)	Not Used

12.10 Location 5[P]51: Outputs Remotely Controlled by User (Bitmapped location)

This location allows users to remotely trigger, set, or clear an output using the mobile app. An example of this function would be the remote opening or closing of a gate, activating security lighting, etc. By default, outputs 1 to 5 are disabled for remote control. All other outputs are enabled.

This is an option location where the [P] in the location number must be replaced by the partition number. Using table 23 use the number keys to enable or disable the output control followed by [*] to commit the selection to memory.

In order to enable mobile app control of an output:

- Select the location number for the appropriate partition followed by [*].
- Outputs enabled to be set/cleared/triggered from the app are shown by an illuminated LED. Each LED represents the corresponding output as shown in Table 26. **Example:** if LED 6 on Page 1 and LED 1 on Page 2 are illuminated, users assigned to this partition are able to control output 1 of expander 1 and the keypad 2 output.
- Select the outputs to be enabled or disabled by toggling the appropriate zone indicator using the number keys.
- Then touch [*].

NOTE: All users assigned to this partition will be able to trigger the enabled outputs.

Example: Allow users assigned to partition 3 to trigger, set, or clear output 5 using the mobile app.

- Enter [5351][*] to enter the location for allowing triggering, setting, or clearing an output for users of the mobile app assigned to partition 3.
- Touch [P1] to select page 1 (from table 26).
- Enter [5] Zone 5 indicator will illuminate (representing output 5).
- Enter [*] to commit the selection to memory.

12.11 Location 5[P]61: Auto Arm Delay (Time Location)

This location sets the time for which the keypad will beep prior to auto arming. The location is a 'Time Location' program format in minutes and seconds. The [P] in the location number must be replaced by the partition number. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

12.12 Location 5[P]62: Auto Arm Days (Option Location)

This is an option location. The [P] in the location number must be replaced by the partition number.

In order to select the days on which the partition will Auto Arm:

- Select the location number for the appropriate partition.
- Using table 27 below select the days by toggling the zone indicator using the number keys i.e., touching the [1] key will set zone 1 status indicator and change Sunday.
- Then touch [*].

Table 27: Auto Arm Days

Zone Status Indicator	Day
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

12.13 Location 5[P]63: Auto Arm Time (Time Location)

A time location programmed in hours and minutes (24-hour clock) which sets the time at which the partition will arm automatically. The [P] in the location number must be replaced by the partition number. When programming this location enter the location and select [P1] then select the hour, touch [P2] then enter the minutes of the test time then press [*] to enter the selection.

12.14 Location 5[P]64: Auto Disarm Days (Option Location)

This is an option location. The [P] in the location number must be replaced by the partition number.

In order to select the days on which the partition will Auto disarm:

- Select the location number for the appropriate partition.
- Using table 27 above, select the days by toggling the zone indicator using the number keys i.e., touching the [1] key will set zone 1 status indicator and change to Sunday.
- Then touch [*].

12.15 Location 5[P]65: Auto Disarm Time

A time location programmed in hours and minutes (24-hour clock) which sets the time at which the partition will disarm automatically. The [P] in the location number must be replaced by the partition number. When

programming this location enter the location and select [P1] then select the hour, touch [P2] then enter the minutes of the test time then press [*] to enter the selection.

NOTE: This function will only be active if the Auto Disarm option in the Partition Options location (Location 5[P]02) has also been enabled.

12.16 Inactivity Auto Arm

A partition may be programmed to arm automatically on certain days and times if no zone violations are detected for a programmable period.

12.17 Location 5[P]66: Inactivity Auto Arm Days (Option Location)

This is an option location. The [P] in the location number must be replaced by the partition number.

In order to select the days on which the partition will Auto Arm if no activity is detected:

- Select the location number for the appropriate partition.
- Using table 27 above, select the days by toggling the zone indicator using the number keys i.e., touching the [1] key will set zone 1 status indicator and change to Sunday.
- Then touch [*].

12.18 Location 5[P]67: Inactivity Auto Arm Time (Time Location)

A time location programmed in hours and minutes (24-hour clock) which sets the time at which the partition will automatically arm if no activity is detected. The [P] in the location number must be replaced by the partition number. When programming this location enter the location and select [P1] then select the hour, touch [P2] then enter the minutes of the test time then press [*] to enter the selection.

12.19 Location 5[P]68: Inactivity Period (Time Location)

This is a 'Time Location' programmed in minutes and seconds which sets the period for which in the absence of any zone violations (quiet period) will initiate auto arming. The [P] in the location number must be replaced by the partition number. When programming this location enter the location and select [P1] then enter minutes, touch [P2] then enter the seconds then press [*] to enter the selection.

12.20 Cross Zone Setup

A single violation of a cross zoned zone will not activate an alarm. A specified minimum number of violations of the same zone or other cross zones must be detected within a specified time before the alarm is activated. Cross zones are enabled under cross zone properties in the Zone Options Location.

12.21 Location 5[P]71: Cross Zone Time (Time Location)

A time location programmed in minutes and seconds which sets up the period during which the violation count programmed in location 5[P]72 must be reached. The [P] in the location number must be replaced by the partition number. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

12.22 Location 5[P]72: Cross Zone Count (String Location)

The number of violations of 'crossed zones' required, during the cross zone period, in order to register an alarm. The default value is 2. Use the number keys to input the required violations in order to register an alarm. The [P] in the location number must be replaced by the partition number.

12.23 Location 5[P]81-5[P]96: Assigning Zones to Zone Indicators (Advanced Option Location)

Any zone indicator may be customised to display any zone. The [P] in the location number must be replaced by the partition number. By default, keypad zone indicators 1-16 show the status of zones 1-16, however zone indicators may be reassigned to indicate the status of zones relevant to individual partitions i.e. If zone indicator 1 of a keypad in partition 2 is to be programmed to indicate the status of Keypad 1 zone, program 91 (taken from table 29) into location 5290 (From table 28).

Table 28: Assigning Zones to Zone Indicators

Zone Indicator	Partition 1	Partition 2	Partition 3	Partition 4
1	5181 (default zone 1)	5281 (default zone 1)	5381 (default zone 1)	5481 (default zone 1)
2	5182 (default zone 2)	5282 (default zone 2)	5382 (default zone 2)	5482 (default zone 2)
3	5183 (default zone 3)	5283 (default zone 3)	5383 (default zone 3)	5483 (default zone 3)
4	5184 (default zone 4)	5284 (default zone 4)	5384 (default zone 4)	5484 (default zone 4)
5	5185 (default zone 5)	5285 (default zone 5)	5385 (default zone 5)	5485 (default zone 5)
6	5186 (default zone 6)	5286 (default zone 6)	5386 (default zone 6)	5486 (default zone 6)
7	5187 (default zone 7)	5287 (default zone 7)	5387 (default zone 7)	5487 (default zone 7)

Zone Indicator	Partition 1	Partition 2	Partition 3	Partition 4
8	5188 (default zone 8)	5288 (default zone 8)	5388 (default zone 8)	5488 (default zone 8)
9	5189 (default zone 9)	5289 (default zone 9)	5389 (default zone 9)	5489 (default zone 9)
10	5190 (default zone 10)	5290 (default zone 10)	5390 (default zone 10)	5490 (default zone 10)
11	5191 (default zone 11)	5291 (default zone 11)	5391 (default zone 11)	5491 (default zone 11)
12	5192 (default zone 12)	5292 (default zone 12)	5392 (default zone 12)	5492 (default zone 12)
13	5193 (default zone 13)	5293 (default zone 13)	5393 (default zone 13)	5493 (default zone 13)
14	5194 (default zone 14)	5294 (default zone 14)	5394 (default zone 14)	5494 (default zone 14)
15	5195 (default zone 15)	5295 (default zone 15)	5395 (default zone 15)	5495 (default zone 15)
16	5196 (default zone 16)	5296 (default zone 16)	5396 (default zone 16)	5496 (default zone 16)

Table 29: Zone Numbers

	Value
Onboard zones	1-8
Expander 1 zones	9-16
Keypad Zones	91: Keypad 1 Zone 92: Keypad 2 Zone 93: Keypad 3 Zone 94: Keypad 4 Zone 95: Keypad 5 Zone 96: Keypad 6 Zone 97: Keypad 7 Zone 98: Keypad 8 Zone

13 Keypad Setup

When programming keypad locations [K] represents the keypad number as set on the DIP switch on the keypad PC board.

13.1 Location 6[K]00: Assigning Partitions (Bitmapped Location)

The [K] in the location number must be replaced by the keypad number as set on the keypad DIP switch. An 'Option Location' to select partitions which may be accessed from this keypad. Toggle the partitions using the number keys on the keypad, followed by [*]. By default, all keypads may access all partitions.

Example: Allow keypad 3 to access partitions 3 and 4 and not allow access to partitions 1 and 2.

- Enter [6300][*] for assigning partition to keypad 3. It will be noted that the default setting is to access all partitions indicated by zone indicators 1 to 4 being illuminated.
- Touch [1] followed by [*] then [2] followed by [*] to deselect partitions 1 and 2.
- Enter [*] to commit the selection to memory.

13.2 Location 6[K]01: Default Partition (String Location)

Selects the partition the keypad displays by default, if a different partition is selected the keypad will return to displaying the default partition approximately 30 seconds after the last key entry. The [K] in the location number must be replaced by the keypad number as set on the keypad DIP switch. The value entered in this location is 1 to 4 corresponding to partitions 1 to 4.

Example: Set keypad 3 to default to partition 4.

- Enter [6301][*] to select the location for keypad 3 default partition. By default, keypad is set to default to partition 1 indicated by zone 1 indicator being illuminated.
- Touch [4] to select partition 4.
- Enter [*] to commit the selection to memory.

13.3 Location 6[K]02: Keypad Options (Option Location)

The [K] in the location number must be replaced by the keypad number as set on the keypad DIP switch.

An option location to set up keypad functionality. Toggle the options using the number keys on the keypad, followed by [*].

Table 30: Keypad Options

LED	Option	Default	Description
1	Partition Timeout	Enabled	The keypad returns to its default partition after accessing another partition. The time out is 30 seconds
2	Keypad Sleep Enable	Enabled	Keypad indicators will extinguish when no activity has been registered on the keypad after the keypad sleep timeout.

LED	Option	Default	Description
3	Keypad Zone Enable	Disabled	Changes detected on the keypad zone are reported to the alarm panel.
4	Global Keypad Enable	Enabled	A global keypad will display all zones for all partitions. A keypad that is NOT a global keypad will only display zones for the selected partition.
5	Trouble Beep Enable	Disabled	The keypad will beep when a new trouble condition is detected.
6	Coms. Indication Enable	Disabled	The PWR indicator will extinguish briefly on a successful communication.
7	Chime Enable	Enabled	The keypad will beep when a chime zone is triggered.
8	Beep All	Enabled	The keypad will beep for all conditions in all partitions. If deselected the keypad will only beep for events within the partition to which it is assigned.

13.4 Location 6[K]03: Keypad Sleep Timeout (Time location)

The [K] in the location number must be replaced by the keypad number as set on the keypad DIP switch. A time location is programmed in minutes and seconds. This sets the time after which all keypad indicators will extinguish. The timeout begins after the last change in either the indicator status or key entry. Any change in keypad indicator status or any keypress will reactivate the keypad. The default keypad sleep time is 5 minutes. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

14 Output Setup

In the output setup locations [OO] represents the output number. Note output 1 must be programmed as 01 (two digits).

Table 31: Output Numbers

Output Device	Output Number	Description
Panel Onboard Outputs	01-05	These are the onboard outputs labelled PGM1-PGM5
Expander 1	06-07	6: PGM 1 on expander 1 7: PGM 2 on expander 1
Relay (Siren Output)	24	Siren Output
Keypad Outputs	16-23	16: Keypad 1 output 17: Keypad 2 output 18: Keypad 3 output 19: Keypad 4 output 20: Keypad 5 output 21: Keypad 6 output 22: Keypad 7 output 23: Keypad 8 output

14.1 Location 7[OO]00: Pulse Time (Time Location)

A time location programmed in minutes and seconds. These locations set the period for which the output is set when it is pulsed. The [OO] in the location number must be replaced by the output number from table 31 above. When programming this location enter the location and select [P1] then select the number of minutes, touch [P2] then enter the number of seconds then press [*] to enter the selection.

14.2 Output Schedules (Advanced Locations)

Outputs may be programmed to perform certain actions at a specified time and day. Two such schedules may be programmed for each output. By default, no actions or schedules are assigned to any output.

Table 32: Output Actions

Value	Output Action	Description
0	None	No action.
1	Set	The output will be set high (+12V)*.
2	Clear	The output will be set low (0V)*.
3	Pulse	The output will be set high (+12V) for a period (as programmed in advanced locations 70100 to 72400) and then return to 0V. The period may be programmed per output. The default pulse period is 3 seconds.

14.3 Location 7[OO]10: Schedule 1 Days (Option Location)

The [OO] in the location number must be replaced by the output number from table 31.

An option location selects the days on which the action for the first scheduled action occurs. To program the Schedule days, select the location number for the appropriate output then select the days by toggling the zone indicator using the number keys (touching the [1] key will select or deselect Sunday) then touch [*].

Table 33: Schedule 1 Days

Zone Status Indicator	Day
1	Sunday
2	Monday
3	Tuesday
4	Wednesday

Zone Status Indicator	Day
5	Thursday
6	Friday
7	Saturday

14.4 Location 7[OO]11: Schedule 1 Time (Time Location)

The [OO] in the location number must be replaced by the output number from table 31.

A time location programmed in hours and minutes sets the time (24-hour clock) at which the first scheduled action will occur, on the days selected in location 7[OO]10. When programming this location enter the location and select [P1] then select the hour, touch [P2] then enter the minutes of the test time then press [*] to enter the selection.

14.5 Location 7[OO]12: Schedule 1 Action (Option Location)

The [OO] in the location number must be replaced by the output number from table 31 above.

Enter a number from the Output Action Table 34 below to select the action required for the first schedule.

Table 34: Output Action

Value	Output Action	Description
0	None	No action.
1	Set	The output will be set high (+12V)*.
2	Clear	The output will be set low (0V)*.
3	Pulse	The output will be set high (+12V) for a period (as programmed in advanced locations 70100 to 72400) and then return to 0V. The period may be programmed per output. The default pulse period is 3 seconds.

14.6 Location 7[OO]20: Schedule 2 Days (Option Location)

The [OO] in the location number must be replaced by the output number from table 31.

An option location to select the days on which the action for the second scheduled action occurs. To program the Schedule days, select the location number for the appropriate output then select the days by toggling the zone indicator using the number keys (touching the [1] key will select or deselect Sunday) then touch [*].

Table 35: Schedule 2 Days

Zone Status Indicator	Day
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

14.7 Location 7[OO]21: Schedule 2 Time (Time Location)

The [OO] in the location number must be replaced by the output number from table 31.

A time location programmed in hours and minutes sets the time (24-hour clock) at which the second scheduled action will occur, on the days selected in location 7[OO]10. When programming this location enter the location and select [P1] then select the hour, touch [P2] then enter the minutes of the test time then press [*] to enter the selection.

14.8 Location 7[OO]22: Schedule 2 Action (Option Location)

The [OO] in the location number must be replaced by the output number from table 31.

Enter a number from the Output Action Table 64 below to select the action required for the second schedule.

Table 36: Output Action

Value	Output Action	Description
0	None	No action.
1	Set	The output will be set high (+12V)*.
2	Clear	The output will be set low (0V)*.
3	Pulse	The output will be set high (+12V) for a period (as programmed in advanced locations 70100 to 72400) and then return to 0V. The period may be programmed per output. The default pulse period is 3 seconds.

15 Expander Setup

15.1 Location 8[E]00: Monitoring Options (Option Location)

The [E] in the location number must be replaced by the expander number as set by the DIP switch on the relevant expander module.

When an expander has an independent power supply the AC and battery may be monitored and appropriate fault conditions reported. The Auxiliary 12V fuse may also be monitored.

This is an option location, use the number keys followed by [*] to toggle the options.

Trouble Condition Number	Fault Condition	Default Setting
1	AC Loss	Off
2	Low Battery	Off
3	Auxiliary 12V	Off

