Thank you for purchasing the PC5132-RS Wireless Receiver. This product is the result of several years of development and will allow you to connect up to 8 wireless detection devices to the PC580 and PC1555 and up to 32 detection devices to the PC5010.

The PC5132-RS uses 900 MHz, spread spectrum technology, which provides several advantages:

- supervisory transmissions are sent every 12 minutes, as opposed to every 50-60 minutes
- programmable supervisory window can be as little as 1 hour, or as long as 24 hours
- devices use standard alkaline batteries as opposed to specialized batteries
- orthogonal antenna arrangement for better RF reception

Version 3.0 of this product introduces **two new features**:

- **6 digit serial numbers for all wireless devices:** These new serial numbers include hexadecimal digits. *Please read Section 3.1 "A note on Electronic Serial Numbers (ESN)" for more information on enrolling older 5-digit and newer 6-digit devices.*
- **Identification of Wireless Keys (WLS909):** Wireless keys 1 to 16 can now be identified as access codes 17 to 32 (respectively) for identified openings/closings and command output activation. This feature is only supported on the following control panels: PC5010 v2.1, PC1555 v2.1 and PC580 v2.1 or higher. *For more information regarding this feature, see Section 3.4 "Identified Wireless Keys."*

We are confident you will find the PC5132-RS Wireless Receiver a unique and useful control panel enhancement.

Introduction

SECTION 1

This manual describes how to install, program and maintain the PC5132-RS.

Before you install the PC5132-RS module, you should have completed the following steps in your system installation:

1. Plan the installation and wiring of the security system (see your system Installation Manual)
2. Install the control panel, and install and enroll at least one keypad to use for programming.
3. Install and enroll any hardwired zone expander modules (PC5108) you plan to use.

***NOTE**: PC5108 zone expander modules occupy zones in 2 groups of 4 (e.g. zones 9-12 and zones 13-16). None of the zones assigned to a PC5108 module may be used for wireless devices.*

Program the PC5132-RS from a system keypad or using downloading software on a remote computer (e.g. DLS-1). Read your system Installation Manual for more information. Read this manual before you begin installing the PC5132-RS.

1.1 How to use this Manual

To install and set up the PC5132-RS and wireless devices, follow these steps:

1. Temporarily mount and wire the PC5132-RS module (see *Section 2*)
2. Enroll and program wireless devices using zones (see *Section 3*)
3. Enroll and program wireless keys and handheld keypads (see *Section 3*)
4. Complete zone and other programming on the system (see *Section 4*)
5. Test the placement of all the wireless devices *(see Section 5)*
6. Permanently mount the PC5132-RS receiver and wireless devices *(see Section 5)*

For information on troubles related to the PC5132-RS, see *Section 6.*

For help with troubleshooting, see *Section 7.*

1.2 Specifications and Features

- Current Draw: 130 mA
- Frequency: 922 to 926 MHz, Spread Spectrum
- Zones - receiver can receive signals from up to 32 wireless zones
- Antenna - orthogonal design for enhanced performance
- Supervisory - programmable supervisory window, one to 24 hours
- Location
  - can be wired up to 750 ft. / 230 m from the main panel with 22 gauge wire
  - connects to Keybus
  - for longer wire runs, thicker gauge wire must be used.
- Compatibility: The PC5132-RS v3.0 can be connected to the following panels: PC5010, PC1555, PC580

1.3 Compatible Wireless Devices

Please refer to the Installation Instruction sheets of the following devices for more information.

The PC5132-RS v3.0 can receive signals from the following devices:

- WLS904 Motion Detector
- WLS906 Smoke Detector
- WLS905 and WLS907 Universal Transmitters
- WLS908 Panic Pendant
- WLS909 Wireless Key
- WLS910 Handheld Keypad

1.4 Batteries

The wireless devices are designed to use Eveready Alkaline Energizer batteries only.

***NOTE**: Do not use other brands of batteries. Using any other brand voids UL and ULC approvals and may affect the system operation.*

PC5132-RS Set up & Wiring

S E C T I O N 2

This section describes how to set up and wire the PC5132-RS module.

2.1 Unpack the PC5132-RS

Check that the following parts are in your PC5132-RS package:

· PC5132-RS PCB
· PC5132-RS plastic cabinet
· 2 antennas

2.2 Choose a Mounting Location for the PC5132-RS

***NOTE**: Do not permanently mount the PC5132-RS now. Mount the PC5132-RS receiver after you have done placement tests with the wireless devices (see sections 5.1 and 5.2).*

Find a place that is:

- Dry
- Central to the proposed placement of all wireless devices
- As high as possible
- Far from sources of interference, including: electrical noise such as computers, televisions and electric motors in appliances and heating and air conditioning units; large metal objects like heating ducts and plumbing which may shield the antenna.

Make sure that electrical wires will not run over the antenna(s) of the module when it is mounted.

When mounting the PC5132-RS in a basement, place the module as high and as close to the underside of the first floor as possible. The range of the module will be reduced if the unit is mounted below ground level.

2.3 Installing the Antennas

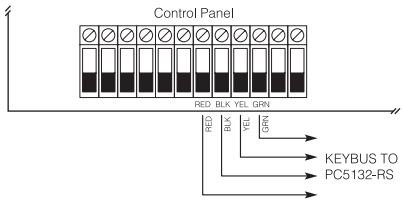
1. Ensure that about 1/4 inch of insulation is removed from the bottom of each antenna in order to ensure a good electrical connection with each terminal.
2. Attach both antennas to the terminals marked ANT1 and ANT2, (not GND1 and GND2). Install the antennas ONLY as shown in the following diagrams:

DO NOT install the antennas this way. The PC5132-RS will *not* be able to receive signals:

2.4 Connect the PC5132-RS Receiver

***CAUTION**: Remove all power from the system while connecting modules to the Keybus.*

Connect the PC5132-RS to the four-wire Keybus of the control panel according to the following diagram.



After you have completed the wiring, re-connect the power to the security system. Once power is restored, the system will automatically detect the presence of the new module.

Now that you have wired the PC5132-RS and installed the antennas, you should enroll and program the wireless devices. See section 3 for instructions.

Enroll & Program Devices

S E C T I O N 3

This section describes how to enroll and program:

- wireless devices using zones (WLS904, WLS905, WLS906, WLS907 and WLS908)
- wireless keys (WLS909)
- handheld keypads (WLS910).

For more information on these devices, read the instruction sheet included with each device.

3.1 A Note about Electronic Serial Numbers

An electronic serial number (ESN) is printed on the back of each wireless device. ESNs are used to enroll the wireless devices with the PC5132-RS receiver.

In order to reduce the occurrence of wireless devices with the same serial number, 6-digit serial numbers are now printed on the back of each wireless device.

***NOTE**: 6-digit serial numbers are only supported on the following control panels: PC5010 v2.x and higher, PC1555 and PC580.*

The 6-digit serial numbers include hexadecimal digits. For instructions on programming hexadecimal numbers, see your system Installation Manual, section 4: How to Program.

When connecting the PC5132-RS to a PC5010 v1.x panel, enter 5-digit serial numbers only. When connecting the PC5132-RS to a PC5010 v2.x and higher, PC1555 or PC580 panel follow the instructions below.

New Wireless Device ESNs

All new devices have both a 5-digit and a 6-digit serial number printed on them so that they can be used with all versions of the PC5132-RS wireless receiver. When enrolling devices with the PC5132-RS:

For PC5132-RS v2.x and lower: enter the 5-digit ESN

For PC5132-RS v3.0 and higher: enter the 6-digit ESN

Old Wireless Device ESNs

You can use older devices on all versions of the PC5132-RS receiver, even though they only have a 5-digit ESN. When using older wireless devices:

For PC5132-RS v2.x and lower: enter the 5-digit ESN

For PC5132-RS v3.0 and higher: enter [0] + 5-digit ESN

3.2 Enroll Wireless Devices Using Zones (WLS904, WLS905, WLS906, WLS907 and WLS908)

Enroll wireless devices which use zones (universal transmitters, motion detectors, smoke detectors, and panic pendants):

1. At a system keypad, enter [✶][8][Installer's code] to go the installer's programming section.
2. Enter programming section [804].
3. Enter the 2-digit number corresponding to the zone the device is to occupy ([01] to [32]).

***NOTE**: Hardwired and wireless devices cannot be assigned to the same zone. PC5108 zone expander modules occupy zones in 2 groups of 4 (e.g. zones 9-12 and zones 13-16). None of the zones assigned to a PC5108 module may be used for wireless devices. For more information on zone assignment, consult your system Installation Manual.*

4. Enter the device's ESN. The entry *must* be six digits. If an older device with a 5-digit ESN is being enrolled, add the digit [0] to the beginning of the ESN. (E.g. ESN=21234, enter 021234)
5. The device is now enrolled on the system. Record the serial number and the assigned zone number in the programming worksheets in the back of this manual.
6. Continue with steps 3 - 5 until you have enrolled all wireless devices.
7. To exit press [#].

***NOTE**: The devices will not work properly until you complete zone and partition programming (see section 4).*

3.3 Enroll & Program Wireless Keys (WLS909)

For wireless keys to work on the system, you need to enroll them and then program the function buttons. Wireless keys are not assigned to zones and require no zone programming. You can enroll up to 16 wireless keys on the system.

Enroll Wireless keys

1. At a system keypad, enter [✶][8][Installer's code] to go to the Installer's Programming section.
2. Enter programming section [804].
3. Enter a 2-digit number [41]-[56] to assign the wireless key a slot. These numbers correspond to wireless key numbers 01-16.
4. Enter the key's ESN. The entry *must* be six digits. If an older key with a 5-digit ESN is being enrolled, add the digit [0] to the beginning of the ESN. (E.g. ESN=61234, enter 061234)
5. The key is now enrolled on the system. Record the serial number and the assigned slot number in the programming worksheets in the back of this manual.
6. Repeat steps 3 - 5 until all wireless keys have been enrolled.
7. **(PC5010 only)** By default, all wireless keys are assigned to Partition 1. To assign keys to Partition 2, enable the appropriate options in programming sections [91] and [92].

***NOTE**: A wireless key can only be assigned to one partition.*

8. To exit press [#].

Program the WLS909 Function Buttons

WLS909 wireless keys have four programmable function buttons. You must program a set of four functions for the buttons before any keys will work. After the functions are programmed, when you press and hold one of the four buttons for two seconds, the system will execute the programmed function.

For systems not using partitions: program the function buttons in section [59]. All wireless keys will have the same four functions.

For systems using 2 partitions (PC5010 only): all wireless keys assigned to Partition 1 will have the four functions programmed in section [59]. All wireless keys assigned to Partition 2 will have the four functions programmed in section [60]. For example, if function button 1 in Section [59] is programmed for Stay arming, then pressing the first button on wireless keys assigned to Partition 1 will Stay arm Partition 1.

***NOTE**: Wireless keys will not work when the partition they are assigned to is being accessed for zone bypassing or programming.*

1. At a system keypad, enter [✶][8][Installer's code].
2. Enter programming section [804].
3. Enter programming section [59] for keys assigned to partition 1, or [60] for keys assigned to partition 2.

4. For each of the 4 function buttons, enter the 2-digit number of the function you want to select. See the programming worksheets for a list of function key options.
5. Record your programming choices in the worksheets in the back of the manual.
6. To exit press [#].

3.4 Identified Wireless Keys

Reporting by the system of openings/closings by individual wireless keys and command output [✶][7] activation by wireless key buttons may be supported on certain control panels. To do this, the system will reserve access codes 17 – 32 for wireless keys 01-16 respectively. You must program one access code for each wireless key (using [✶][5] access code programming) for this feature to work correctly.

***NOTE**: Program these access codes on the system* after *you have connected the PC5132-RS to the Keybus (see section 2.4).*

Refer to your system Installation Manual for information on access code programming.

Opening/Closing By Wireless Key Reporting

***NOTE**: The Identified Wireless Key Opening/Closing option is only available with PC5010, PC1555 and PC580 v2.1 and higher.*

To enable the reporting of *openings* by identified wireless keys:

- Make sure the control panel is v2.1 or higher
- Program a valid access code for each key
- Program an opening reporting code for each key's access code
- Disable the **Unidentified Wireless Key Disarming** option in section [017]: [1]

To enable the reporting of *closings* by identified wireless keys:

- Make sure the control panel is v2.1 or higher
- Program a valid access code for each key
- Program a closing reporting code for each key's access code
- Disable the **Quick Exit** option in section [015]: [4]

Command Output Activation

***NOTE**: The Identified Wireless Key Command Output Activation feature is only available with the PC5010, PC1555 and PC580 v2.0 and higher.*

To enable command output activation by wireless keys, ensure that:

- Make sure the control panel is v2.0 or higher
- Program a valid access code for each key
- Enable the PGM output attribute **Requires Access Code** for each PGM output programmed as [✶][7][1-4] in sections [141] to [154].

3.5 Enrolling & Programming Handheld Keypads (WLS910)

For handheld keypads to work on the system, you need to enroll them and then program the function buttons. You can enroll up to 4 handheld keypads on the system.

Enroll Handheld Keypads

1. At a system keypad, enter [✶][8][Installer's code] to go to the Installer's Programming section.
2. Enter programming section [804].
3. Enter a 2-digit number (33-36) to assign the handheld keypad a slot. These numbers correspond to handheld keypad numbers 1-4.
4. Enter the keypad's ESN. The entry *must* be six digits. If an older keypad with a 5-digit ESN is being enrolled, add the digit [0] to the beginning of the ESN. (E.g. ESN=21234, enter 021234)
5. The keypad is now enrolled on the system. Record the serial number and the assigned slot number in the programming worksheets in the back of this manual.
6. Repeat steps 3 - 5 until all handheld keypads have been enrolled.
7. **(PC5010 only)** By default, all handheld keypads are assigned to Partition 1. To assign a keypad to Partition 2, enable the appropriate options in programming section [90].

***NOTE**: A handheld keypad can only be assigned to one partition.*

8. To exit press [#].

Program the WLS910 Function Buttons

WLS910 handheld keypads have four programmable function buttons. You must program a set of four functions for the function buttons to work.

For systems not using partitions: program the function buttons in section [57]. All handheld keypad buttons will have the same four functions.

For systems using 2 partitions (PC5010 only): all handheld keypads assigned to Partition 1 will have the four functions programmed in section [57]. All handheld keypads assigned to Partition 2 will have the four functions programmed in section [58]. For example, if function button 1 in Section [57] is programmed for Stay arming, then pressing the first button on handheld keypads assigned to Partition 1 will Stay arm Partition 1.

1. At a system keypad, enter [✶][8][Installer's code] to go to the Installer's Programming section.
2. Enter programming section [804].
3. Enter programming section [57] for partition 1 function buttons, or [58] for partition 2 function buttons.
4. For each of the 4 function buttons, enter the 2-digit number of the function you want to select. See the programming worksheets for a list of function button options.
5. Record your programming choices in the worksheets in the back of the manual.
6. To exit press [#].

3.6 Deleting Wireless Devices

To remove a wireless device from the system, follow the guideline for adding a wireless device. Program the ESN as [000000]. The wireless device for the zone will be removed.

***NOTE**: You may need to remove power from the panel in order to clear troubles caused by deleted zones.*

Now that you have enrolled all the wireless devices, you will need to program the system to work properly with the devices. See section 4 for more information.

Other Programming

S E C T I O N 4

4.1 Program Zones and Partitions

Now that you have enrolled the wireless devices, you should complete all zone programming on the system. Although the exact programming required varies depending on which control panel the PC5132-RS is connected to, you should check that the following programming areas are completed correctly for each wireless zone:

- Enable zones and/or assign zones to one or more partitions (programming sections [201]-[209]).
- Program the definition for each zone(programming sections [001]-[004]).

***NOTE**: WLS906 wireless smoke detectors must be assigned to zones defined as Delay 24-hr fire (wireless) [87] or Standard 24-hr fire (wireless) [88] for proper supervision.*

- Enable the wireless zone attribute for each wireless zone (PC580, PC1555, PC5010 v2.0 and up only)(programming sections [101]-[132]).

See your system Installation Manual, for more information on each of the above programming sections.

4.2 Enable PC5132-RS Supervision

The control panel will automatically supervise the PC5132-RS receiver via the Keybus one-minute after at least one device has been enrolled on the module. The system will generate a General System Supervisory trouble if the module is removed from the Keybus. If you need to remove the PC5132-RS module from an existing system, you will have to disable supervision of the PC5132-RS.

To disable PC5132-RS supervision:

1. Disconnect the PC5132-RS from the Keybus
2. Enter [✶][8][Installer Code]
3. Enter [902]. The control panel will clear all supervision and re-scan the system for connected modules. The scan will take approximately one minute.
4. To exit press [#].

To review which modules the control panel is currently supervising:

1. Enter [✶][8][Installer's Code]
2. Enter [903] to display all modules. On LED keypads, light [17] will indicate that the PC5132-RS is present on the system. On keypads, scroll until the module name appears on the display.
3. To exit press [#].

If the PC5132-RS module does not show on the keypad, one of the following conditions may be present:

- the module is not connected properly to the Keybus
- there is a problem with the Keybus wiring run
- the module does not have enough power
- no devices have been enrolled on the PC5132-RS

4.3 Enable Supervision of Wireless Zones

***NOTE** (for PC5010 v1.x control panels only): In order for wireless zones to be supervised, you must enable Double End of Line supervision in the PC5010 control panel. For more information, refer to your PC5010 v1.x Installation Manual.*

***NOTE** (PC5010 v2.0 and higher, PC1555, PC580 only): For wireless supervision to work, you must enable the wireless zone attribute on all wireless zones (sections [101] to [132], option [8] ON).*

Wireless Supervisory Window

Each wireless zone (WLS904, WLS906, WLS906, or WLS907) will send a supervisory signal every 12 minutes. If the receiver does not receive a signal within the time programmed for the **Wireless Supervisory Window**, it will generate a supervisory fault.

To program the wireless supervisory window:

1. Enter [✱][8][Installer Code] to enter Installer Programming.
2. Enter [804] to enter the PC5132-RS Module Programming.
3. Enter sections [81].
4. Enter the time period for the supervisory window (valid entries are 01-24 hours).
5. To exit press [#].

WLS908 Panic Pendant

The panic pendant does not transmit a supervisory signal. This is so that the user will be able to take it away from the premise. You must disable wireless supervision for each zone a panic pendant is assigned to.

Disable/Enable Zone Supervision

All wireless zones have supervision enabled by default. To disable supervision for any zone, enter the following at any system keypad:

1. Enter [✱][8][Installer Code] to enter Installer Programming.
2. Enter [804] to enter the PC5132-RS Module Programming.
3. Enter sections [82], [83], [84] and [85]. Disable or enable supervision for each wireless zone by turning each relevant option on or off.
4. To exit press [#].

4.4 PC5132-RS Software Default

Returning the PC5132-RS programming to factory default settings is a quick way to remove all the enrolled devices from the system and reset all the programming in section [804].

***NOTE**: Performing this procedure will not change any programming sections except [804]. Resetting the control panel to factory default settings will* not *return the PC5132-RS module to factory default settings.*

To restore the PC5132-RS programming to the factory default settings, perform the following:

1. Enter [✱][8] [Installer's Code].
2. Enter programming section [996].
3. Enter the Installer's Code, followed by [996] again. The software for the PC5132-RS will be restored to its factory default settings.

For instructions on restoring the default programming of the control panel or any other connected module, see your system Installation Manual.

Now that you have completed all PC5132-RS related programming, you can test and mount the receiver and devices. See section 5 for more information.

Testing & Mounting

SECTION 5

5.1 Test the placement of WLS904, WLS905, WLS906 and WLS907 devices

It is very important to test the proposed placement of each wireless device before it is mounted. Following these steps will test the placement of the wireless motion detectors (WLS904), wireless smoke detectors (WLS906) and wireless door/window contacts (WLS905 & WLS907), based on the signal strength between the PC5132-RS and the device.

***NOTE**: You cannot test the Panic Pendant (WLS908), Wireless Key (WLS909), and Handheld Keypad (WLS910) in this mode. See section 5.2 for instructions on testing these devices.*

1. Temporarily place the device you want to test in the place you want to mount it.
2. At a system keypad, enter [✶][8][Installer Code].
3. Enter programming section [904].
4 Enter the 2-digit zone number for the device to be tested.
5. Activate the device being tested until a result is displayed on the keypad or sounded by the keypad or bell.

   WLS904: Remove the detector from its backplate, wait for 5 seconds, then reattach the detector to its backplate.

   WLS906: Hold the supplied magnet near the raised line on the outer rim of the bracket.

   WLS905 & WLS907: Open and close the contact by moving the magnet away from the unit. If the unit is attached to a door or a window, open and close the door or window to activate the device.
6. Read the test results at the keypad:

Result	LED Keypad	LCD Keypad	Buzzer/Bell
Good	Light 1 On Steady	“Good”	1 Beep/Squawk
Fair	Light 2 On Steady	“Fair”	2 Beeps/Squawks
Bad	Light 3 On Steady	“Bad”	3 Beeps/Squawks

   Activate the device until you get 3 good or fair results in a row. Wait 10 seconds between each test on the same device.

   You may mount wireless devices where results were good or fair.

   Devices indicating a bad result must be moved to another location. You may only have to move the device a few inches to correct a bad result.

***NOTE**: Do not mount any device where a “bad” test result was indicated.*

   If several wireless devices produce BAD test results, you may need to move the PC5132-RS to a better location. (See section 2.2 for tips on finding a location for the PC5132-RS.)
7. To test another device, press [#] once, then repeat steps 4 - 6. Continue to test the devices until both the PC5132-RS and the devices are in good locations.
8. To exit installer programming, press [#] twice.

5.2 Test WLS908, WLS909 and WLS910 Reception

The panic pendant (WLS908), wireless key (WLS909) and handheld keypad (WLS910) cannot be tested using the module placement test described above. To ensure that the PC5132-RS is receiving transmissions from these devices, conduct the following tests:

WLS908: Activate the Panic alarm at several different points in the installation.

***NOTE**: The PC5132-RS v2.0 and lower will activate an alarm when the "test" button is pressed on the WLS908.*

WLS909: Use the function keys to arm and disarm the system at several different points in the installation.

WLS910: Use the keypad to arm and disarm the system from several different points in the installation.

If these devices do not operate from all points in the installation, you will need to move the PC5132-RS receiver. Moving the PC5132-RS higher will usually improve the reception.

If you move the PC5132-RS, repeat the tests described in sections 5.1 and 5.2 on all the wireless devices. Continue to test the devices until you have found satisfactory locations for the PC5132-RS and the WLS904, WLS905, WLS906 and WLS907 devices, and there is good reception between the PC5132-RS and the WLS908, WLS909 and WLS910 devices.

5.3 Mount the PC5132-RS and Wireless Devices

Do not permanently mount the PC5132-RS until you have tested reception with all the wireless devices (see sections 5.1 and 5.2).

Once you have a good location, mount the PC5132-RS:

1. Remove the four screws that attach the PC5132-RS to the plastic cabinet.
2. Pull the Keybus wires through the hole at the back of the cabinet.
3. Mount the cabinet securely to the wall.
4. Reattach the PC5132-RS to the mounted cabinet using the four mounting screws.

Mount the WLS904, WLS905, WLS906 and WLS907 Devices

If you have conducted the placement test described in section 5.1 and got 3 "Good" or "Fair" results in a row for each device, you can mount the wireless devices. See the Installation sheet for each device for mounting instructions.

5.4 Battery Test for WLS908 Panic Pendants

You cannot test Panic Pendant batteries using the methods described in sections 5.1 and 5.2. You must program panic pendant zones before you can test the panic pendants.

***NOTE**: The PC5132-RS v2.0 and lower will activate an alarm when the "test" button is pressed on the WLS908.*

Follow these steps to test panic pendants:

1. Begin testing when your system is in the ready state and the keypad Ready light is on.
2. Go to an LCD keypad.

***NOTE**: If your system is partitioned, you can only view the Panic Pendant test result on a partition LCD keypad. To view the test result on a global LCD keypad, you must "loan" the keypad to the partition before you begin the test. See your Installation Manual for information on global and partition keypads.*

3. Press and hold the "Test" button on the pendant for two seconds.
4. If the pendant's battery condition is *normal*, the Ready light on the LCD keypad will turn OFF for 30 seconds or until the [#] key is pressed. On the PC5010 v2.x or higher, PC1555 and PC580: If the pendant's battery condition is normal, the keypad will beep and the LCD keypad will display "System Test in Progress."
   If the pendant's battery is *low*, the LCD keypad's Trouble light will turn ON and the keypad will give a series of continuous beeps.

Instruct the user(s) to perform this test when they perform the weekly system test.

***NOTE**: If a low battery condition is detected, you must immediately replace the unit.*

Replacing a Pendant with a Low Battery

You should immediately replace a pendant when a low battery is indicated. To replace a pendant on the system, follow these steps:

From the keypad:

1. Enter [✱][8][Installer Code].
2. Enter programming Section [804].
3. Enter the 2-digit zone number of the pendant to be replaced (01-32).
4. Enter serial number [000000].
5. Re-enter the 2-digit zone number for the pendant being replaced.
6. Enter the ESN of the new pendant.
7. To exit press [#] twice.

Through downloading:

1. Connect to the control panel through downloading.
2. Upload window contents of the zone serial numbers in the wireless expansion section of downloading.
3. Change the serial number of the pendant to be replaced to [000000].
4. Download window contents.
5. Enter the ESN of the new pendant.
5. Download window contents.

Additional Notes

S E C T I O N 6

6.1 Trouble Conditions

The control panel always watches for possible trouble conditions. If a trouble condition occurs, the keypad "Trouble" light will turn on and the keypad will beep. Press [✶][2] to display the trouble conditions.

The following trouble conditions apply to the PC5132-RS and/or any enrolled devices. For a description of all troubles, please see your system Installation Manual.

- General System Tamper
- Zone Fault
- General System Supervisory
- Device Low Battery
- Zone Tamper

Wireless Zone Low Battery Transmission

Within the supervisory transmission, the device will indicate the status of the battery. If a battery is low, the system will indicate a Device Low Battery trouble.

***NOTE**: Since the WLS908 does not send supervisory transmissions, a low battery on this device will not cause a Device Low Battery trouble. The user should be instructed to test this device every week. See section 5.4 for testing instructions.*

The system will delay reporting the event to the central station for the number of days programmed for **Zone Low Battery Transmission Delay** in section [370]. This will prevent unnecessary reporting of the event if the user has been instructed on how to replace batteries.

Replacing Batteries in Wireless Devices

1 Remove the cover of the device from its back plate. This creates a tamper condition on the zone.

2 Refer to the battery installation instructions on the installation sheet of each component. Be sure to note the proper orientation of the batteries as you install them.

3 When the fresh batteries are in place, re-attach the cover to the back plate. The tamper is restored and the zone sends a battery trouble restoral signal to the PC5132-RS. The battery trouble is now clear and the device should function normally.

***NOTE**: When batteries in one device need to be replaced, the batteries in all devices should be replaced at the same time.*

Troubleshooting

S E C T I O N 7

1. When I enter the 2-digit zone number when adding a wireless device, the keypad gives me a long beep.
You cannot enter ESNs unless a PC5132-RS wireless receiver is connected to the Keybus. See section 2 for instructions on setting up and wiring the PC5132-RS module.

2. I have entered the ESN for the device but when I violate the device, the zone does not show open on the keypad.
Check the following:

- Ensure the ESN has been entered correctly
- Ensure that the zone is enabled for the partition (if partition programming is used).
- Ensure that the wireless zone is not assigned to a zone used by PC5108 modules.
- Ensure that the zone is programmed for something other than "Null Operation." Wireless smoke detectors must be assigned to zones defined as type [87] or [88].

3. When I try a module placement test I get no result or "Bad" results.
Check the following (see sections 5.1 and 5.2 for more information on testing devices):

- Verify that you are testing the correct zone
- Verify that the correct ESN was entered when the device was enrolled
- Verify that the device is in range of the PC5132-RS. Try testing the device in the same room as the receiver.
- Confirm that the PC5132-RS is properly connected to the Keybus (see section 2 for PC5132-RS set up and wiring instructions).
- Check that you are testing the zone correctly (see sections 5.1 and 5.2 for testing instructions)
- Check that the batteries are working and installed correctly.
- Look for large metal objects that may be preventing the signal from reaching the PC5132-RS.

The device must be located where consistent "Good" results are obtained. If several devices show "Bad" results, or if panic pendants and wireless keys operate inconsistently, move the receiver. See section 2.2 for tips on choosing a mounting location for the PC5132-RS.

4. The LED on the motion detector does not turn on when I walk in front of the unit.
The LED is for walk test purposes only. See your WLS904 instruction sheet for walk test instructions.

5. The WLS908 shows a supervisory fault three hours after I enrolled it.
The WLS908 does not transmit a supervisory signal. You must disable supervision for the zone the WLS908 is assigned to (see section 4.3).

Programming Worksheets

S E C T I O N 6

[804] 5132-RS Wireless Expansion Programming

- 6-digit entry is required. **See Section 3.1 "A note on Electronic Serial Numbers" for details on programming 6-digit serial numbers.**
- When enrolling devices with 5-digit serial numbers on the PC5132-RS v3.0, the first digit must be zero (0), followed by the 5-digit serial number (6-digits total). For example, to enter the serial number 42345 on a PC5132-RS v3.0, enter "042345."

Zone Serial Numbers

Default = 000000

[01] Zone 1 _____

[02] Zone 2 _____

[03] Zone 3 _____

[04] Zone 4 _____

[05] Zone 5 _____

[06] Zone 6 _____

[07] Zone 7 _____

[08] Zone 8 _____

[09] Zone 9 _____

[10] Zone 10 _____

[11] Zone 11 _____

[12] Zone 12 _____

[13] Zone 13 _____

[14] Zone 14 _____

[15] Zone 15 _____

[16] Zone 16 _____

[17] Zone 17 _____

[18] Zone 18 _____

[19] Zone 19 _____

[20] Zone 20 _____

[21] Zone 21 _____

[22] Zone 22 _____

[23] Zone 23 _____

[24] Zone 24 _____

[25] Zone 25 _____

[26] Zone 26 _____

[27] Zone 27 _____

[28] Zone 28 _____

[29] Zone 29 _____

[30] Zone 30 _____

[31] Zone 31 _____

[32] Zone 32 _____

Handheld Keypad Serial Numbers

Default = 000000

[33] Keypad 01 _ _ _ _ _ _

[34] Keypad 02 _ _ _ _ _ _

[35] Keypad 03 _ _ _ _ _ _

[36] Keypad 04 _ _ _ _ _ _

Wireless Key Serial Numbers

Default = 000000

[41] Key 01 _ _ _ _ _ _

[42] Key 02 _ _ _ _ _ _

[43] Key 03 _ _ _ _ _ _

[44] Key 04 _ _ _ _ _ _

[45] Key 05 _ _ _ _ _ _

[46] Key 05 _ _ _ _ _ _

[47] Key 07 _ _ _ _ _ _

[48] Key 08 _ _ _ _ _ _

[49] Key 09 _ _ _ _ _ _

[50] Key 10 _ _ _ _ _ _

[51] Key 11 _ _ _ _ _ _

[52] Key 12 _ _ _ _ _ _

[53] Key 13 _ _ _ _ _ _

[54] Key 14 _ _ _ _ _ _

[55] Key 15 _ _ _ _ _ _

[56] Key 16 _ _ _ _ _ _

Handheld Keypad and Wireless Key Function Key Options

Entry	Key Description	Entry	Key Description
00	Null Key	**16**	[✶][0] Quick Exit
01-02	*For Future Use*	**17**	[✶][1] Reactivate Stay/Aways
03	Stay Arm	**18**	*For Future Use*
04	Away Arm	***19**	[✶][7][3] Command Output #3
05	[✶][9] No-Entry Arm	**20**	For Future Use
06	[✶][4] Chime ON/OFF	***21**	[✶][7][4] Command Output #4
07	[✶][6][——][4] System Test	**22-26**	*For Future Use*
08-12	*For Future Use*	****27**	Disarm (OFF)
***13**	[✶][7][1] Command Output #1	****28**	Fire Alarm
***14**	[✶][7][2] Command Output #2 / Sensor Reset	****29**	Auxiliary Alarm
15	*For Future Use*	****30**	Panic Alarm

***** Sensor Reset can be used when the PC5132-RS is connected to the PC5010. Command outputs are not available for PC5010 software v1.x.

****** These can only be used for wireless key function keys and should not be used for the handheld keypad function keys.

Default = 00

Partition 1 Handheld Keypad Options

[57] Function Key 1 ⌊_⌋⌊_⌋ Function Key 3 ⌊_⌋⌊_⌋
Function Key 2 ⌊_⌋⌊_⌋ Function Key 4 ⌊_⌋⌊_⌋

Partition 2 Handheld Keypad Options

[58] Function Key 1 ⌊_⌋⌊_⌋ Function Key 3 ⌊_⌋⌊_⌋
Function Key 2 ⌊_⌋⌊_⌋ Function Key 4 ⌊_⌋⌊_⌋

Partition 1 Wireless Key Options

[59] Function Key 1 ⌊_⌋⌊_⌋ Function Key 3 ⌊_⌋⌊_⌋
Function Key 2 ⌊_⌋⌊_⌋ Function Key 4 ⌊_⌋⌊_⌋

Partition 2 Wireless Key Options

[60] Function Key 1 ⌊_⌋⌊_⌋ Function Key 3 ⌊_⌋⌊_⌋
Function Key 2 ⌊_⌋⌊_⌋ Function Key 4 ⌊_⌋⌊_⌋

Supervision

[81] Wireless supervisory Window
Default = 03

⌊_⌋⌊_⌋ wireless device window (hours), valid entries are 01-24.

***NOTE**: Panic pendants are NOT supervised and must be disabled in the following sections.*

[82] Zone Device Supervision Options (1-8)

Default = ON	Option ON	Option OFF
⌊___⌋ Option 1	Zone 01 Supervision enabled	Disabled
⌊___⌋ Option 2	Zone 02 Supervision enabled	Disabled
⌊___⌋ Option 3	Zone 03 Supervision enabled	Disabled
⌊___⌋ Option 4	Zone 04 Supervision enabled	Disabled
⌊___⌋ Option 5	Zone 05 Supervision enabled	Disabled
⌊___⌋ Option 6	Zone 06 Supervision enabled	Disabled
⌊___⌋ Option 7	Zone 07 Supervision enabled	Disabled
⌊___⌋ Option 8	Zone 08 Supervision enabled	Disabled

[83] Zone Device Supervision Options (9-16)

Default = ON	Option ON	Option OFF
☐ Option 1	Zone 09 Supervision enabled	Disabled
☐ Option 2	Zone 10 Supervision enabled	Disabled
☐ Option 3	Zone 11 Supervision enabled	Disabled
☐ Option 4	Zone 12 Supervision enabled	Disabled
☐ Option 5	Zone 13 Supervision enabled	Disabled
☐ Option 6	Zone 14 Supervision enabled	Disabled
☐ Option 7	Zone 15 Supervision enabled	Disabled
☐ Option 8	Zone 16 Supervision enabled	Disabled

[84] Zone Device Supervision Options (17-24)

Default = ON	Option ON	Option OFF
☐ Option 1	Zone 17 Supervision enabled	Disabled
☐ Option 2	Zone 18 Supervision enabled	Disabled
☐ Option 3	Zone 19 Supervision enabled	Disabled
☐ Option 4	Zone 20 Supervision enabled	Disabled
☐ Option 5	Zone 21 Supervision enabled	Disabled
☐ Option 6	Zone 22 Supervision enabled	Disabled
☐ Option 7	Zone 23 Supervision enabled	Disabled
☐ Option 8	Zone 24 Supervision enabled	Disabled

[85] Zone Device Supervision Options (25-32)

Default = ON	Option ON	Option OFF
☐ Option 1	Zone 25 Supervision enabled	Disabled
☐ Option 2	Zone 26 Supervision enabled	Disabled
☐ Option 3	Zone 27 Supervision enabled	Disabled
☐ Option 4	Zone 28 Supervision enabled	Disabled
☐ Option 5	Zone 29 Supervision enabled	Disabled
☐ Option 6	Zone 30 Supervision enabled	Disabled
☐ Option 7	Zone 31 Supervision enabled	Disabled
☐ Option 8	Zone 32 Supervision enabled	Disabled

Partition Assignments

[90] Handheld Keypads (1-4) Partition Assignments

Default = OFF	Option ON	Option OFF
____ Option 1	Keypad 1 on partition 2	On partition 1
____ Option 2	Keypad 2 on partition 2	On partition 1
____ Option 3	Keypad 3 on partition 2	On partition 1
____ Option 4	Keypad 4 on partition 2	On partition 1
____ Options 5-8	For future use	

[91] Wireless Keys (1-8) Partition Assignments

Default = OFF	Option ON	Option OFF
____ Option 1	Wireless Key 01 on partition 2	On partition 1
____ Option 2	Wireless Key 02 on partition 2	On partition 1
____ Option 3	Wireless Key 03 on partition 2	On partition 1
____ Option 4	Wireless Key 04 on partition 2	On partition 1
____ Option 5	Wireless Key 05 on partition 2	On partition 1
____ Option 6	Wireless Key 06 on partition 2	On partition 1
____ Option 7	Wireless Key 07 on partition 2	On partition 1
____ Option 8	Wireless Key 08 on partition 2	On partition 1

[92] Wireless Keys (9-16) Partition Assignments

Default = OFF	Option ON	Option OFF
____ Option 1	Wireless Key 09 on partition 2	On partition 1
____ Option 2	Wireless Key 10 on partition 2	On partition 1
____ Option 3	Wireless Key 11 on partition 2	On partition 1
____ Option 4	Wireless Key 12 on partition 2	On partition 1
____ Option 5	Wireless Key 13 on partition 2	On partition 1
____ Option 6	Wireless Key 14 on partition 2	On partition 1
____ Option 7	Wireless Key 15 on partition 2	On partition 1
____ Option 8	Wireless Key 16 on partition 2	On partition 1

Guidelines for Locating Smoke Detectors

A P P E N D I X A

Experience has shown that all hostile fires in family living units generate smoke to a greater or lesser extent. Experiments using typical fires in family living units indicate that detectable quantities of smoke precede detectable levels of heat in most cases. In existing homes, NFPA Standard 72 requires that a smoke detector be installed outside each sleeping area and on each additional story of the family unit.

The following information is for general guidance only and it is recommended that NFPA Standard 72 (**National Fire Protection Association, One Batterymarch Park, Quincy MA 02269**) be consulted and that the smoke detector manufacturer's literature be used for detailed installation instructions.

It is recommended that additional smoke detectors beyond those required be installed for increased protection. The added areas include: basement, bedrooms, dining rooms, furnace room, utility room and hallways not protected by the required detectors.

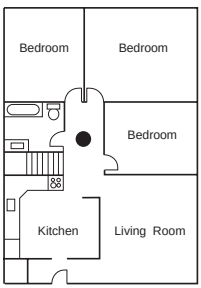


Figure 1: A smoke detector should be located between the sleeping area and the rest of the family unit.

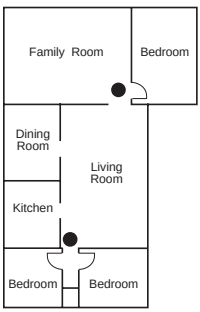


Figure 2: In the family living units with more than one sleeping area, a smoke detector should be located to protect each sleeping area.

The Smoke Detector is designed to use Eveready Energizer E91 Alkaline Batteries. Do not use other brands of batteries with the Smoke Detector. Using brands other than the Eveready Energizer will void UL approval, and may affect the system's operation.

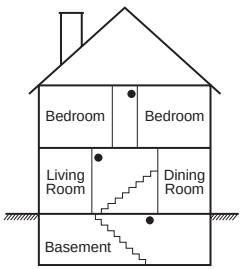
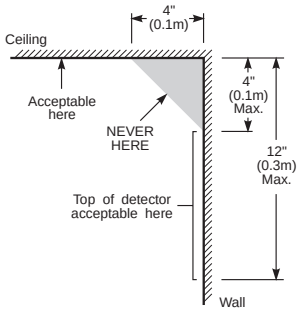


Figure 3: A smoke detector should be located on each story of the living unit.



NOTE: Measurements shown are to the closest edge of the detector.

Figure 4: Smoke Detector mounting - "Dead" Air Space. The smoke from a fire generally rises to the ceiling, spreads out across the ceiling surface and begins to bank down from the ceiling. The corner where the ceiling and wall meet is an air space into which the smoke may have difficulty penetrating. In most fires, this "dead" air space measures about 4 in. (0.1m) along the ceiling from the corner and about 4 in. (0.1m) down the wall as shown in Figure 4. Detectors should not be placed in the dead" air space.

Index

A

add
- device 7
- handheld keypad 10
- wireless key 8

antenna 2
- installing 4

B

batteries
- replacing 18
- type 3

buttons
- programming 8

C

connect
- Keybus 5
- receiver 5

D

default
- module 14
- panel 14

deleting devices 11

devices 3
- adding 7
- deleting 11

distance
- from control panel 2

E

electronic serial number 6

enroll
- device 7
- handheld keypad 10
- module 12
- wireless key 8

ESN 6

F

factory default 14

frequency 2

function keys 8

H

handheld keypad 10

I

interference 4

K

Keybus 5

L

location
- choosing 4

low battery
- devices 18
- panic pendant 17

M

mount
- devices 16
- PC5132-RS 16

N

number
- electronic, serial 6

P

panic pendant
- battery test 16
- removing 13
- replacing 17
- supervision 13

partition programming 12
- handheld keypads 10
- wireless keys 8

placement
- PC5132-RS 4
- test 15

power 5

problems 18

R

removing
- devices 11
- module 12

S

serial number 6

slot number
- wireless key 8

smoke detector
- zone definition 12

supervision
- DEOL 13
- device 13
- disable 12
- module 12
- panic pendant 13
- window 13

T

testing
- door/window contact 15
- handheld keypad 16
- motion detector 15
- panic pendant 16
- PC5132-RS 15
- pendant battery 16
- placement 15
- smoke detector 15
- wireless key 16

trouble 18

troubleshooting 19

W

wireless key
- access codes 9
- activating outputs 9
- arming/disarming 9
- enrolling 8
- identifying 9
- programming 8

Z

zone
- adding 7
- attribute 12
- numbers 7
- programming 12
- wireless 12

LIMITED WARRANTY

Digital Security Controls Ltd. warrants the original purchaser that for a period of twelve months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use. During the warranty period, Digital Security Controls Ltd. shall, at its option, repair or replace any defective product upon return of the product to its factory, at no charge for labour and materials. Any replacement and/or repaired parts are warranted for the remainder of the original warranty or ninety (90) days, whichever is longer. The original owner must promptly notify Digital Security Controls Ltd. in writing that there is defect in material or workmanship, such written notice to be received in all events prior to expiration of the warranty period.

International Warranty

The warranty for international customers is the same as for any customer within Canada and the United States, with the exception that Digital Security Controls Ltd. shall not be responsible for any customs fees, taxes, or VAT that may be due.

Warranty Procedure

To obtain service under this warranty, please return the item(s) in question to the point of purchase. All authorized distributors and dealers have a warranty program. Anyone returning goods to Digital Security Controls Ltd. must first obtain an authorization number. Digital Security Controls Ltd. will not accept any shipment whatsoever for which prior authorization has not been obtained.

Conditions to Void Warranty

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover:

- damage incurred in shipping or handling;
- damage caused by disaster such as fire, flood, wind, earthquake or lightning;
- damage due to causes beyond the control of Digital Security Controls Ltd. such as excessive voltage, mechanical shock or water damage;
- damage caused by unauthorized attachment, alterations, modifications or foreign objects;
- damage caused by peripherals (unless such peripherals were supplied by Digital Security Controls Ltd.);
- defects caused by failure to provide a suitable installation environment for the products;
- damage caused by use of the products for purposes other than those for which it was designed;
- damage from improper maintenance;
- damage arising out of any other abuse, mishandling or improper application of the products.

Digital Security Controls Ltd.'s liability for failure to repair the product under this warranty after a reasonable number of attempts will be limited to a replacement of the product, as the exclusive remedy for breach of warranty. Under no circumstances shall Digital Security Controls Ltd. be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, but are not limited to, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

Disclaimer of Warranties

This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose) And of all other obligations or liabilities on the part of Digital Security Controls Ltd. Digital Security Controls Ltd. neither assumes nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

This disclaimer of warranties and limited warranty are governed by the laws of the province of Ontario, Canada.

WARNING: Digital Security Controls Ltd. recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

Out of Warranty Repairs

Digital Security Controls Ltd. will at its option repair or replace out-of-warranty products which are returned to its factory according to the following conditions. Anyone returning goods to Digital Security Controls Ltd. must first obtain an authorization number. Digital Security Controls Ltd. will not accept any shipment whatsoever for which prior authorization has not been obtained.

Products which Digital Security Controls Ltd. determines to be repairable will be repaired and returned. A set fee which Digital Security Controls Ltd. has predetermined and which may be revised from time to time, will be charged for each unit repaired.

Products which Digital Security Controls Ltd. determines not to be repairable will be replaced by the nearest equivalent product available at that time. The current market price of the replacement product will be charged for each replacement unit.

© 1998 Digital Security Controls Ltd.
1645 Flint Road, Downsview, Ontario, Canada M3J 2J6
Tel. (416) 665-8460 • Fax (416) 665-7498
Tech. Line 1-800-387-3630 Printed in Canada 29003019 R0

See page 1 for NEW features of v3.0

Installation Manual

DSC Security Products

PC5132-RS

Version 3.0

FCC COMPLIANCE STATEMENT

CAUTION: Changes or modifications not expressly approved by Digital Security Controls Ltd. could void your authority to use this equipment.

This equipment generates and uses radio frequency energy and if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for Class B device in accordance with the specifications in Subpart "B" of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in any residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to television or radio reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna
- Relocate the alarm control with respect to the receiver
- Move the alarm control away from the receiver
- Connect the alarm control into a different outlet so that alarm control and receiver are on different circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful: "How to Identify and Resolve Radio/Television Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock # 004-000-00345-4.

Contents

Section 1: Introduction 2

1.1 How to use this Manual 2
1.2 Specifications and Features 2
1.3 Compatible Wireless Devices 3
1.4 Batteries 3

Section 2: PC5132-RS Set up & Wiring 4

2.1 Unpack the PC5132-RS 4
2.2 Choose a Mounting Location for the PC5132-RS 4
2.3 Installing the Antennas 4
2.4 Connect the PC5132-RS Receiver 5

Section 3: Enroll & Program Devices 6

3.1 A Note about Electronic Serial Numbers 6
3.2 Enroll Wireless Devices Using Zones (WLS904, WLS905, WLS906, WLS907 and WLS908) 7
3.3 Enroll & Program Wireless Keys (WLS909) 8
3.4 Identified Wireless Keys 9
3.5 Enrolling & Programming Handheld Keypads (WLS910) 10
3.6 Deleting Wireless Devices 11

Section 4: Other Programming 12

4.1 Program Zones and Partitions 12
4.2 Enable PC5132-RS Supervision 12
4.3 Enable Supervision of Wireless Zones 13
4.4 PC5132-RS Software Default 14

Section 5: Testing & Mounting 15

5.1 Test the placement of WLS904, WLS905, WLS906 and WLS907 devices 15
5.2 Test WLS908, WLS909 and WLS910 Reception 16
5.3 Mount the PC5132-RS and Wireless Devices 16
5.4 Battery Test for WLS908 Panic Pendants 16

Section 6: Additional Notes 18

6.1 Trouble Conditions 18

Section 7: Troubleshooting 19

Programming Worksheets 20

Appendix A: Guidelines for Locating Smoke Detectors 25

Index 26

Limited Warranty inside back cover

WARNING Please Read Carefully

Note to Installers

This warning contains vital information. As the only individual in contact with system users, it is your responsibility to bring each item in this warning to the attention of the users of this system.

System Failures

This system has been carefully designed to be as effective as possible. There are circumstances, however, involving fire, burglary, or other types of emergencies where it may not provide protection. Any alarm system of any type may be compromised deliberately or may fail to operate as expected for a variety of reasons. Some but not all of these reasons may be:

■ Inadequate Installation

A security system must be installed properly in order to provide adequate protection. Every installation should be evaluated by a security professional to ensure that all access points and areas are covered. Locks and latches on windows and doors must be secure and operate as intended. Windows, doors, walls, ceilings and other building materials must be of sufficient strength and construction to provide the level of protection expected. A re-evaluation must be done during and after any construction activity. An evaluation by the fire and/or police department is highly recommended if this service is available.

■ Criminal Knowledge

This system contains security features which were known to be effective at the time of manufacture. It is possible for persons with criminal intent to develop techniques which reduce the effectiveness of these features. It is important that a security system be reviewed periodically to ensure that its features remain effective and that it be updated or replaced if it is found that it does not provide the protection expected.

■ Access by Intruders

Intruders may enter through an unprotected access point, circumvent a sensing device, evade detection by moving through an area of insufficient coverage, disconnect a warning device, or interfere with or prevent the proper operation of the system.

■ Power Failure

Control units, intrusion detectors, smoke detectors and many other security devices require an adequate power supply for proper operation. If a device operates from batteries, it is possible for the batteries to fail. Even if the batteries have not failed, they must be charged, in good condition and installed correctly. If a device operates only by AC power, any interruption, however brief, will render that device inoperative while it does not have power. Power interruptions of any length are often accompanied by voltage fluctuations which may damage electronic equipment such as a security system. After a power interruption has occurred, immediately conduct a complete system test to ensure that the system operates as intended.

■ Failure of Replaceable Batteries

This system's wireless transmitters have been designed to provide several years of battery life under normal conditions. The expected battery life is a function of the device environment, usage and type. Ambient conditions such as high humidity, high or low temperatures, or large temperature fluctuations may reduce the expected battery life. While each transmitting device has a low battery monitor which identifies when the batteries need to be replaced, this monitor may fail to operate as expected. Regular testing and maintenance will keep the system in good operating condition.

■ Compromise of Radio Frequency (Wireless) Devices

Signals may not reach the receiver under all circumstances which could include metal objects placed on or near the radio path or deliberate jamming or other inadvertent radio signal interference.

■ System Users

A user may not be able to operate a panic or emergency switch possibly due to permanent or temporary physical disability, inability to reach the device in time, or unfamiliarity with the correct operation. It is important that all system users be trained in the correct operation of the alarm system and that they know how to respond when the system indicates an alarm.

■ Smoke Detectors

Smoke detectors that are a part of this system may not properly alert occupants of a fire for a number of reasons, some of which follow. The smoke detectors may have been improperly installed or positioned. Smoke may not be able to reach the smoke detectors, such as when the fire is in a chimney, walls or roofs, or on the other side of closed doors. Smoke detectors may not detect smoke from fires on another level of the residence or building.

Every fire is different in the amount of smoke produced and the rate of burning. Smoke detectors cannot sense all types of fires equally well. Smoke detectors may not provide timely warning of fires caused by carelessness or safety hazards such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches or arson.

Even if the smoke detector operates as intended, there may be circumstances when there is insufficient warning to allow all occupants to escape in time to avoid injury or death.

■ Motion Detectors

Motion detectors can only detect motion within the designated areas as shown in their respective installation instructions. They cannot discriminate between intruders and intended occupants. Motion detectors do not provide volumetric area protection. They have multiple beams of detection and motion can only be detected in unobstructed areas covered by these beams. They cannot detect motion which occurs behind walls, ceilings, floor, closed doors, glass partitions, glass doors or windows. Any type of tampering whether intentional or unintentional such as masking, painting, or spraying of any material on the lenses, mirrors, windows or any other part of the detection system will impair its proper operation.

Passive infrared motion detectors operate by sensing changes in temperature. However their effectiveness can be reduced when the ambient temperature rises near or above body temperature or if there are intentional or unintentional sources of heat in or near the detection area. Some of these heat sources could be heaters, radiators, stoves, barbeques, fireplaces, sunlight, steam vents, lighting and so on.

■ Warning Devices

Warning devices such as sirens, bells, horns, or strobes may not warn people or waken someone sleeping if there is an intervening wall or door. If warning devices are located on a different level of the residence or premise, then it is less likely that the occupants will be alerted or awakened. Audible warning devices may be interfered with by other noise sources such as stereos, radios, televisions, air conditioners or other appliances, or passing traffic. Audible warning devices, however loud, may not be heard by a hearing-impaired person.

■ Telephone Lines

If telephone lines are used to transmit alarms, they may be out of service or busy for certain periods of time. Also an intruder may cut the telephone line or defeat its operation by more sophisticated means which may be difficult to detect.

■ Insufficient Time

There may be circumstances when the system will operate as intended, yet the occupants will not be protected from the emergency due to their inability to respond to the warnings in a timely manner. If the system is monitored, the response may not occur in time to protect the occupants or their belongings.

■ Component Failure

Although every effort has been made to make this system as reliable as possible, the system may fail to function as intended due to the failure of a component.

■ Inadequate Testing

Most problems that would prevent an alarm system from operating as intended can be found by regular testing and maintenance. The complete system should be tested weekly and immediately after a break-in, an attempted break-in, a fire, a storm, an earthquake, an accident, or any kind of construction activity inside or outside the premises. The testing should include all sensing devices, keypads, consoles, alarm indicating devices and any other operational devices that are part of the system.

■ Security and Insurance

Regardless of its capabilities, an alarm system is not a substitute for property or life insurance. An alarm system also is not a substitute for property owners, renters, or other occupants to act prudently to prevent or minimize the harmful effects of an emergency situation.