
• W A R N I N G •

This manual contains information on limitations regarding product use and function and information on the limitations as to liability of the manufacturer.

Installation Manual



PC5132-433 NA
Version 4.2

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.

This Class B digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences de règlement sur le matériel brouilleur du Canada.

AVIS: L'étiquette de l'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Industrie Canada n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être effectuées par un centre d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, les lignes téléphoniques et les canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

AVERTISSEMENT: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

L'indice de charge (IC) assigné à chaque dispositif terminal indique, pour éviter toute surcharge, le pourcentage de la charge totale qui peut être raccordée à un circuit téléphonique bouclé utilisé par ce dispositif. La terminaison du circuit bouclé peut être constituée de n'importe quelle combinaison de dispositifs, pourvu que la somme des indices de charge de l'ensemble des dispositifs ne dépasse pas 100.

L'Indice de charge de ce produit est 2.

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

User should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

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

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

The Load Number of this unit is 2.

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Thank you for purchasing the PC5132-433 Wireless Receiver. This product is the result of several years of development and will allow you to connect up to 32 wireless detection devices to the PC580, PC1555, and the Power series control panels.

The PC5132-433 uses 433 MHz. It provides several advantages:

- supervisory transmissions are sent every 64 minutes
- programmable supervisory window can be as long as 24 hours
- diversity antenna arrangement for better RF reception

In addition, the PC5132-433 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 6-digit devices.*

We are confident you will find the PC5132-433 Wireless Receiver a unique and useful control panel enhancement.

Introduction

S E C T I O N 1

This manual describes how to install, program and maintain the PC5132-433. Before you install the PC5132-433 module, you should complete 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 can be used for wireless devices.*

Program the PC5132-433 from a system keypad or using downloading software on a remote computer (e.g. DLS-3). Read your system *Installation Manual* for more information.

1.1 How to Use this Manual

Read this manual before you begin installing the PC5132-433. To install and set up the PC5132-433 and wireless devices, follow these steps. Refer to the sections listed below.

1. Temporarily mount and wire the PC5132-433 module (see *Section 2*).
2. Enroll and program wireless devices (see *Section 3*).
3. Complete zone and other programming on the system (see *Section 4*).
4. Test the placement of all the wireless devices (see *Section 5*).
5. Permanently mount the PC5132-433 receiver and wireless devices (see *Section 5*).

For additional information on trouble conditions, RF jamming signal detection and battery replacement, see *Section 6*.

For help with troubleshooting, see *Section 7*.

1.2 Specifications and Features

- Current Draw: 80 mA
- Frequency: 433 MHz
- Zones - receiver can receive signals from up to 32 wireless zones and 16 wireless keys
- Antenna - diversity design for enhanced performance
- Supervisory - programmable supervisory window, 8 to 24 hours, in 15 minute increments
- 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 PC5132-433 v4.X can be connected to the following panels: PC501X, PC5020, PC1555, PC580

1.3 Compatible Wireless Devices

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

The PC5132-433 v4.X can receive signals from the following devices:

- WLS904P-433 Motion Detector
- WLS912-433 Glass Break Detector
- WLS906-433 Smoke Detector
- WLS907-433 Door/Window Contact
- WLS914-433 Pet-Immune PIR
- WLS909-433 Wireless Key
- WLS919-433 Wireless Key
- WLS925L-433 Mini Door/Window Contact

1.4 Batteries

The wireless devices, with the exception of the WLS925L transmitter and the WLS919-433 wireless key, are designed to use only Energizer Alkaline batteries (by Eveready). For the WLS919-433, use only FDK CR2032 type lithium batteries.

NOTE: *Do not use other brands of batteries. Using any other brand may affect system operation.*

PC5132-433 Set Up & Wiring

S E C T I O N 2

This section describes how to set up and wire the PC5132-433 module.

2.1 Unpack the PC5132-433

Check that the following parts are in your PC5132-433 package:

- PC5132-433 PCB
- Diversity antennae
- PC5132-433 plastic cabinet
- Hardware for mounting the cabinet

2.2 Choose a Mounting Location for the PC5132-433

NOTE: Mount the PC5132-433 receiver and wireless devices after you have done placement tests with the wireless devices (see sections 5.1 and 5.2).

Find a place that is:

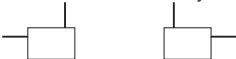
- Dry
- Central to the proposed placement of all wireless devices
- As high as possible
- Far from sources of interference, including: electrical noise (computers, televisions and electric motors in appliances and heating and air conditioning units); large metal objects like heating ducts and plumbing 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 PC5132-433 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

The two antennas must be screwed into the terminals marked ANT1 and ANT2, not GND1 and GND2. Also they must be installed as indicated in the following two diagrams:



Do not install the antennas as indicated in the following diagrams:



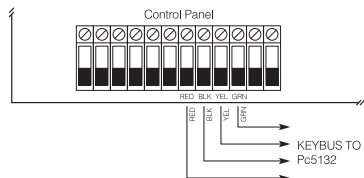
If the antennas are installed incorrectly the PC5132-433 may not reliably receive signals from the transmitters.

2.4 Connect the PC5132-433 Receiver

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

Connect the PC5132-433 to the four-wire Keybus of the control panel according to the following diagram.

After you have completed the wiring, reconnect the power to the security system.



Now that you have wired the PC5132-433, you should enroll and program the wireless devices. See section 3 for instructions.

Enrolling Wireless Devices

S E C T I O N 3

This section describes how to enroll wireless devices (WLS904P-433, WLS906-433, WLS907-433, WLS912-433, WLS914-433 and WLS925L-433), and wireless keys (WLS909-433 and WLS919-433). 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 PC5132-433 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. The 6-digit serial numbers include hexadecimal digits. For instructions on programming hexadecimal numbers, see your system Installation Manual, Section 4: How to Program.

NOTE: *6-digit serial numbers are only supported on the following control panels: PC5020, PC501X, PC1555 and PC580 v2.0 and higher.*

The WLS904P-433, WLS906-433, WLS907-433, WLS912-433, WLS914-433 and WLS925L-433 devices have both a 5-digit and a 6-digit serial number printed on them. When connecting the PC5132-433 to a PC5010 v1.x panel, enter 5-digit serial numbers only. When connecting the PC5132-433 to a PC5020 or PC5015 v2.x and higher, PC5010, PC1555, or PC580 panel enter the 6-digit serial number.

3.2 Enrolling Wireless Devices

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 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. Follow the instructions in section 3.1 above.
5. 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 [#]. The device is now enrolled on the system.

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

3.3 Enroll & Program Wireless Keys

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.

NOTE: *Control units must have the 'Arm/Disarm Bell Squawk' feature enabled when using wireless key devices. The bell squawk must be heard outside of the home.*

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. **(PC5020 / PC501X 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 WLS909-433 or WLS919-433 Function Buttons

WLS909-433 and WLS919-433 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 partitions (PC5020 / PC501X 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 in the back of this manual 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 PC5132-433 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 Closing option is only available with the PC5020 or PC501X, PC1555, PC580 v2.0 and higher by turning section [015] option 4 off.

To enable the reporting of openings and closings by identified wireless keys:

- Make sure the control panel is v2.0 or higher
- Program a valid access code for each key
- Program a closing and opening reporting code for each key's access code
- Turn off the **Quick Arm** option in section [015] option [4] of the control panel programming

To ensure that an *unidentified wireless key* cannot disarm the system, turn off section [017], option [1] (in the control panel programming). This option is available in control panels with software version 2.1 or higher.

Command Output Activation

NOTE: The Identified Wireless Key Command Output Activation feature is only available with the PC5020, PC501X, PC1555 and PC580 v2.0 and higher.

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

- 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] ([501] to [514] for the PC5020).

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 PC5132-433 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 [202]-[205] or [202] to [265] for the PC5020).
- Program the definition for each zone (programming sections [001]-[004]).
- Enable the wireless zone attribute for each wireless zone (PC580, PC1555, PC501X v2.0, PC5020 v3.0 and higher only) (sections [101]-[132]).

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

4.2 Enable PC5132-433 Supervision

The control panel will supervise the PC5132-433 receiver via the Keybus after at least one device has been enrolled on the module (see section 3.2 “Enrolling Wireless Devices”).

To activate module supervision, after you enroll the first device(s):

1. Exit and then re-enter installer’s programming
2. Enter programming section [902]. Wait approximately 1 minute.
3. To exit press [#].

The system will generate a General System Supervisory trouble if the module is removed from the Keybus. If you need to remove the PC5132-433 module from an existing system, you will have to disable supervision of the PC5132-433.

NOTE: *Deleting all devices from the PC5132-433 or defaulting the PC5132-433 will cause a supervisory fault*

To disable PC5132-433 supervision:

1. Disconnect the PC5132-433 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 PC5132-433 is present on the system. On LCD keypads, scroll until the module name appears on the display.
3. To exit press [#].

If the PC5132-433 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

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 (DEOL) supervision in the PC5010 control panel. For more information, refer to your Installation Manual.

NOTE: (PC5020, PC501X, PC1555, PC580 v2.0 and higher 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 (WLS906-433, WLS904P-433 or WLS925L-433) will send a supervisory signal every 64 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 PC5132-433 Module Programming.
3. Enter section [81].
4. Enter the time period for the supervisory window. The window is programmed in 15 minute increments. The default programming is 96 (x15minutes), which is equal to 24 hours. Valid entries are (32) - (96), equal to 8 - 24 hours.
5. To exit press [#].

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 PC5132-433 Module Programming.
3. Enter sections [82], [83], [84] and [85]. Enable or disable supervision for each wireless zone by turning each relevant option on or off.
4. To exit press [#].

4.4 RF Jam Detect Zone

For RF jamming detection to work, you must select an unused zone to be used as the RF Jam Detect zone. When the receiver detects an attempt to jam the RF signal, the RF Jam Detect zone will be violated and the system will generate a tamper signal. When the jamming signal is gone, the RF Jam Detect zone closes and the system sends a tamper restore signal.

To enable RF jamming detection:

1. Enter [*][8] [Installer's Code].
2. Enter programming section [804].
3. Select an unused zone to be the RF Jam Detect zone. Enter the 2-digit number ([01] to [32]) of the RF Jam Detect zone on the keypad, then program the serial number as [200000].

4. Enter section [93]. Enter the 2-digit number of the RF Jam Detect zone ([01] to [32]) in the programming section.
5. Disable supervision for the RF Jam detect zone by turning the relevant option off in section [82], [83], [84] or [85]. (See section 4.3 for more information.)
6. RF jamming detection is now enabled. To exit Installer programming, press [#].

NOTE: For UL Listed installations, the RF Jam feature must be enabled - Section [804], subsection [90], Option [7] OFF.

4.5 PC5132-433 Software Default

Returning the PC5132-433 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 PC5132-433 module to factory default settings.

To restore the PC5132-433 programming to the factory default settings:

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 PC5132-433 will be restored to its factory default settings.
4. To continue programming the unit, exit installer's programming by pressing [#] and then re-enter installer's programming by entering [*][8] [Installer's Code].

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

4.6 Deleting Wireless Devices

To remove a wireless device from the system, follow the guideline for enrolling a wireless device (see section 3.2). 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 completed all PC5132-433 related programming, you can test and mount the receiver and devices. See section 5 for more information.

Testing & Mounting

S E C T I O N 5

5.1 Test the Reception of Wireless Devices

It is very important to test the proposed placement of each wireless device before it is mounted. Following these steps will test the signal strength between the PC5132-433 and the wireless devices.

You can test all of the devices together (global placement testing) or test each device individually. To test all the devices together, see 'Testing All Wireless Devices Together' below. To test wireless devices individually, see 'Testing Individual Devices'.



After you have enrolled the wireless devices, you must exit and then re-enter Installer's Programming at least once before you can perform a placement test.

Testing All Wireless Devices Together:

1. Temporarily put the WLS904P-433, WLS906-433, WLS907-433, WLS912-433, WLS914-433 and WLS925L-433 devices in the places you want to mount them.
2. At a system keypad, enter [*][8][Installer Code].
3. Enable the Global Module Placement test by entering section [804]. Then enter sub-section [90] and turn on option [8].
4. Press [#] twice.
5. Enter programming section [904], then enter [01].
6. Activate one of the devices being tested until a result is displayed on the keypad or sounded by the keypad or bell:

WLS904P-433/WLS914-433: To perform a Placement Test on the WLS904P-433, remove the detector from the back plate and then replace it. Once the detector is replaced on the back plate the LED on the detector will flash rapidly 5 times (4 times for the WLS914-433) to indicate that it has sent a transmission. The panel will show and/or sound the result of the placement test on the keypad. To perform a 2nd and 3rd test, repeat this procedure.

Carefully replace the backplate onto the detector, ensuring that "TOP" is facing upward, or you may damage the tamper switch.

NOTE: When you remove the detector from the backplate (tamper the unit), the detector will also be put into "Detector Walk Test" mode. While in Walk Test mode the detector will activate the LED when motion is detected. The detector will also send a signal to the receiver 5 seconds after motion is detected, indicated by 5 rapid flashes by the LED. The LED will only work in this fashion for 10 motion detections after a tamper/restore. Note that the panel will ignore these transmission signals with respect to a placement test. The only way in which the panel will acknowledge a placement test is if the backplate has, each time, been removed and restored.

WLS906-433: Remove the detector from its backplate, wait 5 seconds and re-attach it, or hold a magnet near the raised line on the outer rim, then remove it.

WLS907-433/WLS925L-433: Open the contact by moving the magnet away from the unit. The keypad will show/sound the test result. After the first test result has been generated (about 10 seconds) close the contact to generate another test result. If the unit is attached to a door or a window, open and close the door or window to activate the device.

WLS909-433/WLS919-433: Press any function key at several different locations.

WLS912-433: Press and hold the test mode tab for 5 seconds. Release the test mode tab. The keypad will display the test result.

Read the test results at the keypad:

Result	LED Keypad	LCD Keypad	Buzzer/Bell
Good	Light 1 On Steady	"Good"	1 Beep/Squawk
Bad	Light 3 On Steady	"Bad"	3 Beeps/Squawks

Activate the device until you get 3 'good' results in a row.

You may mount the WLS devices where results were good.

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.

! *Do not mount any device where a "bad" test result was indicated.*

- Go to the next device to be tested and activate it until the test result is displayed/sounded.

NOTE: *Wait until the placement test of one device is shown/sounded before beginning to test the next device.*

Continue to test the devices until both the PC5132-433 and the devices are in good locations. If several wireless devices produce 'bad' test results, you may need to move the PC5132-433 to a better location. (See section 2.2 for tips on finding a location for the PC5132.)

- To exit the placement test and return to installer programming, press [#] twice.

Testing Individual WLS904P-433, WLS906-433, WLS907-433, WLS912-433, WLS914-433 and WLS925L-433 Devices:

- Temporarily place the WLS904P-433, WLS906-433 or WLS925L-433 where you want to mount it.
- At a system keypad, enter [*][8][Installer Code].
- Enter programming section [904].
- Enter the 2-digit zone number for the device to be tested.
- Activate the device being tested until a result is displayed on the keypad or sounded by the keypad or bell. (Same as step 5 in the Global Placement Test section, previous page.)
- To test another device, press [#] once, then repeat steps 4 - 5. Continue to test the devices until both the PC5132-433 and the devices are in good locations.

If several wireless devices produce 'bad' test results, you may need to move the PC5132-433 to a better location. (See section 2.2 for tips on finding a location for the PC5132.)

- To exit the placement test and installer programming, press [#] twice.

Testing Individual Wireless Keys:

You cannot use the individual device test described above to test WLS909-433/WLS919-433 wireless keys. To ensure that the PC5132-433 receiver is receiving transmissions from these devices, use the function keys on the WLS909-433/WLS919-433 at several different points in the installation.

5.2 Mount the PC5132-433 and Wireless Devices

When you have tested reception of the PC5132-433 with all the wireless devices (see section 5.1) and you have a good mounting location, mount the PC5132:

1. Pull the Keybus wires through the hole at the bottom of the cabinet.
2. Mount the cabinet securely to the wall.

Mount the Devices

If you have conducted the placement test described in section 5.1 and got 3 'good' results in a row for each device, you can mount the wireless devices. See the *Installation Sheet* for each device for mounting instructions.

Now that your PC5132-433 and wireless devices are mounted and working properly, read section 6 for information on potential wireless trouble conditions, RF jamming signals, and battery replacement.

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 PC5132-433 and/or any enrolled devices.

General System Tamper - This trouble is generated when the PC5132-433 detects an RF Jamming condition.

General System Supervisory - This trouble will be generated if the panel loses communication with any module connected to the Keybus. The event buffer will log a detailed description of the event.

Device Low Battery - This trouble is generated when a wireless device exhibits a low battery condition. Press [7] one, two, or three times to view which devices are experiencing battery failure. An LED keypad will indicate battery failure using zone lights 1 to 8.

Zone Tamper - This trouble is generated when an enrolled wireless device is removed from its mounting location.

Zone Fault - Each wireless zone will send a supervisory signal every 64 minutes. If the receiver does not receive a signal within the time programmed for the **Wireless Supervisory Window**, it will generate a zone fault.

6.2 Jamming Signal Detection

The PC5132-433 receiver detects jamming signals that can prevent the receiver from properly receiving transmissions from enrolled devices. See section 4.4 "Jamming Signal Detection" for information on jamming signal detection programming.

NOTE: For UL Listed installations, the RF Jam feature must be enabled - Section [804], subsection [90], Option [7] OFF.

6.3 Wireless Zone Low Battery Transmission

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

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. 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 may need to 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 PC5132-433 wireless receiver is connected to the Keybus. See section 2 for instructions on setting up and wiring the PC5132-433 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, an on-board zone, or a keypad zone.
- Ensure that the zone is programmed for something other than “Null Operation”, and that the wireless zone attribute is turned on.

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. Try testing the device in the same room as the receiver.
- Confirm that the PC5132-433 is properly connected to the Keybus (see section 2 for PC5132-433 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.

The device must be located where consistent ‘good’ results are obtained. If several devices show ‘bad’ results, move the receiver. See section 2.2 for tips on choosing a mounting location for the PC5132.

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 *Wireless PIR Instruction Sheet* for walk test instructions.

Programming Worksheets

S E C T I O N 8

[804] 5132--433 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.

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

Wireless Key Serial Numbers

Default = 000000

- | | |
|---|---|
| <p>[41] Key 01 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[42] Key 02 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[43] Key 03 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[44] Key 04 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[45] Key 05 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[46] Key 05 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[47] Key 07 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[48] Key 08 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> | <p>[49] Key 09 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[50] Key 10 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[51] Key 11 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[52] Key 12 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[53] Key 13 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[54] Key 14 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[55] Key 15 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> <p>[56] Key 16 <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u></p> |
|---|---|

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	For Future Use
14	For Future Use	29	Auxiliary Alarm
15	For Future Use	30	Panic Alarm

Partition 1 Wireless Key Options

Default = 00

- | | |
|---|-------------------------------------|
| [59] Function Key 1 <input type="text"/> | Function Key 3 <input type="text"/> |
| Function Key 2 <input type="text"/> | Function Key 4 <input type="text"/> |

Partition 2 Wireless Key Options

- | | |
|---|-------------------------------------|
| [60] Function Key 1 <input type="text"/> | Function Key 3 <input type="text"/> |
| Function Key 2 <input type="text"/> | Function Key 4 <input type="text"/> |

Supervision

- [81]** Wireless Supervisory Window Default = 96

 The window is programmed in 15 minute increments. The default programming is 96 (x 15minutes), which is equal to 24 hours. Valid entries are (32) - (96), equal to 8 - 24 hours.

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

Default = ON	Option ON	Option OFF
<input type="text"/> Option 1	Zone 01 Supervision enabled	Disabled
<input type="text"/> Option 2	Zone 02 Supervision enabled	Disabled
<input type="text"/> Option 3	Zone 03 Supervision enabled	Disabled
<input type="text"/> Option 4	Zone 04 Supervision enabled	Disabled
<input type="text"/> Option 5	Zone 05 Supervision enabled	Disabled
<input type="text"/> Option 6	Zone 06 Supervision enabled	Disabled
<input type="text"/> Option 7	Zone 07 Supervision enabled	Disabled
<input type="text"/> Option 8	Zone 08 Supervision enabled	Disabled

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

Default = ON	Option ON	Option OFF
<input type="text"/> Option 1	Zone 09 Supervision enabled	Disabled
<input type="text"/> Option 2	Zone 10 Supervision enabled	Disabled
<input type="text"/> Option 3	Zone 11 Supervision enabled	Disabled
<input type="text"/> Option 4	Zone 12 Supervision enabled	Disabled
<input type="text"/> Option 5	Zone 13 Supervision enabled	Disabled
<input type="text"/> Option 6	Zone 14 Supervision enabled	Disabled
<input type="text"/> Option 7	Zone 15 Supervision enabled	Disabled
<input type="text"/> Option 8	Zone 16 Supervision enabled	Disabled

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

Default = ON	Option ON	Option OFF
<input type="checkbox"/> Option 1	Zone 17 Supervision enabled	Disabled
<input type="checkbox"/> Option 2	Zone 18 Supervision enabled	Disabled
<input type="checkbox"/> Option 3	Zone 19 Supervision enabled	Disabled
<input type="checkbox"/> Option 4	Zone 20 Supervision enabled	Disabled
<input type="checkbox"/> Option 5	Zone 21 Supervision enabled	Disabled
<input type="checkbox"/> Option 6	Zone 22 Supervision enabled	Disabled
<input type="checkbox"/> Option 7	Zone 23 Supervision enabled	Disabled
<input type="checkbox"/> Option 8	Zone 24 Supervision enabled	Disabled

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

Default = ON	Option ON	Option OFF
<input type="checkbox"/> Option 1	Zone 25 Supervision enabled	Disabled
<input type="checkbox"/> Option 2	Zone 26 Supervision enabled	Disabled
<input type="checkbox"/> Option 3	Zone 27 Supervision enabled	Disabled
<input type="checkbox"/> Option 4	Zone 28 Supervision enabled	Disabled
<input type="checkbox"/> Option 5	Zone 29 Supervision enabled	Disabled
<input type="checkbox"/> Option 6	Zone 30 Supervision enabled	Disabled
<input type="checkbox"/> Option 7	Zone 31 Supervision enabled	Disabled
<input type="checkbox"/> Option 8	Zone 32 Supervision enabled	Disabled

[90] Other Options

Default	Option ON	Option OFF
Off Options 1-6	For Future Use	
On Option 7	RF Jam Detect Disabled	RF Jam Detect Enabled
Off Option 8	Global Placement Test	Individual Placement Test

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

Default = OFF	Option ON	Option OFF
<input type="checkbox"/> Option 1	Wireless Key 01 on partition 2	On partition 1
<input type="checkbox"/> Option 2	Wireless Key 02 on partition 2	On partition 1
<input type="checkbox"/> Option 3	Wireless Key 03 on partition 2	On partition 1
<input type="checkbox"/> Option 4	Wireless Key 04 on partition 2	On partition 1

<input type="checkbox"/>	Option 5	Wireless Key 05 on partition 2	On partition 1
<input type="checkbox"/>	Option 6	Wireless Key 06 on partition 2	On partition 1
<input type="checkbox"/>	Option 7	Wireless Key 07 on partition 2	On partition 1
<input type="checkbox"/>	Option 8	Wireless Key 08 on partition 2	On partition 1

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

Default = OFF		Option ON	Option OFF
<input type="checkbox"/>	Option 1	Wireless Key 09 on partition 2	On partition 1
<input type="checkbox"/>	Option 2	Wireless Key 10 on partition 2	On partition 1
<input type="checkbox"/>	Option 3	Wireless Key 11 on partition 2	On partition 1
<input type="checkbox"/>	Option 4	Wireless Key 12 on partition 2	On partition 1
<input type="checkbox"/>	Option 5	Wireless Key 13 on partition 2	On partition 1
<input type="checkbox"/>	Option 6	Wireless Key 14 on partition 2	On partition 1
<input type="checkbox"/>	Option 7	Wireless Key 15 on partition 2	On partition 1
<input type="checkbox"/>	Option 8	Wireless Key 16 on partition 2	On partition 1

RF Jamming Detection

[93] RF Jam Detect Zone

Default = 00

- Select an unused zone that will be violated when a jamming signal is detected. (Valid entries = 01 - 32, 00 = RF Jam detect disabled.)

NOTE: For UL Listed installations, the RF Jam feature must be enabled - Section [804], subsection [90], Option [7] OFF.

Guidelines for Locating Smoke Detectors

SECTION 9

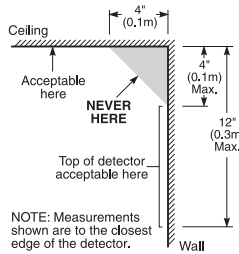
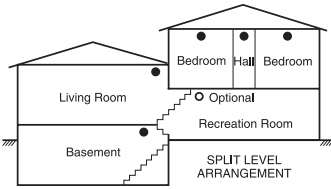
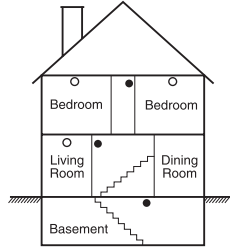
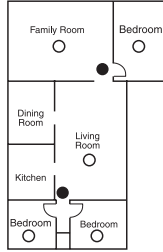
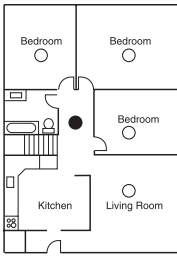
Experience has shown that all hostile fires in family living units generate smoke to a greater or lesser extent. Experiments using typical fires in family living units indicate that detectable quantities of smoke precede detectable levels of heat in most cases. In existing homes, NFPA Standard 72 requires that a smoke detector be installed outside each sleeping area and on each additional story of the family unit. On smooth ceilings, detectors may be spaced 9.1m (30 feet) apart as a guide. Other spacing may be required depending on ceiling height, air movement, the presence of joists, uninsulated ceilings, etc. Consult National Fire Alarm Code NFPA 72, CAN/ULS-S553-M86 or other appropriate national standards for installation recommendations.

Do not locate smoke detectors at the top of peaked or gabled ceilings; the dead air space in these locations may prevent the unit from detecting smoke.

Avoid areas with turbulent air flow, such as near doors, fans or windows. Rapid air movement around the detector may prevent smoke from entering the unit.

Do not locate detectors in areas of high humidity.

Do not locate detectors in areas where the temperature rises above 38°C (100°F) or falls below 5°C (41°F).



- Smoke detectors for better protection
- Smoke detectors for minimum protection

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

Smoke detectors should always be installed in accordance with NFPA 72, the National Fire Alarm Code. Smoke detectors should always be located in accordance with:

- Paragraph 2-2.1.1.1 of NFPA 72: "Smoke detectors shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit, including basements and excluding crawl spaces and unfinished attics. In new construction, a smoke detector also shall be installed in each sleeping room."
- Paragraph 2-2.1.1.2 of NFPA 72: "Split level arrangement. Smoke detectors are required where shown. Smoke detectors are optional where a door is not provided between living room and recreation room."



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.

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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.

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 responsibility for 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.

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 reevaluation 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, barbecues, 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.



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