
PC5102-433NA v1.0 Installation Manual

Section 1: Introduction

The PC5102-433 wireless receiver is a lower cost alternative to the standard PC5132-433 wireless receiver when only wireless keys are required for an installation. As such this product has a decreased operating range (see section 1.2 Specifications and Features). If longer range is required, the PC5132-433 or LCD5501Z32-433 can be used.

This manual describes how to install, program and maintain the PC5102-433. Please read the entire manual before installing the product. The receiver can be programmed using a system keypad or by using the DLS-3 v1.3 software with the PC5102-433 v1.0 Driver Pack, available at <http://www.dscsec.com/dls3drivers.htm>.

1.1 How to Use this Manual

Read this manual before you begin installing the PC5102-433. To install and set up the PC5102-433 and wireless keys, follow these steps. Refer to the sections listed below.

1. Temporarily mount and wire the PC5102-433 module (see *Section 2*).
 2. Enroll and program wireless keys (see *Section 3*).
 3. Complete PGM and other programming on the system (see *Section 4*).
 4. Test the placement of all the wireless keys (see *Section 5*).
 5. Permanently mount the PC5102-433 receiver (see *Section 5*).
- For additional information on trouble conditions and battery replacement, see *Section 6*. For help with troubleshooting, see *Section 7*.

1.2 Specifications and Features

- Supports up to 8 wireless keys
- Current Draw: 50mA (standby) 200mA Maximum (both outputs active)
- Frequency: 433 MHz
- Range: 75 - 150 feet (25 - 50 meters)
- Outputs: 2 Form 'C' Relays
- Wiring: connects to Keybus, up to 250 feet (80 meters) using 22 gauge, up to 500ft (165 meters) using 18 gauge
- Compatibility: connect to any of the following panels - PC580, PC1555, PC1555MX, PC5010, PC5015, PC5020, P-48, P-6B, P6BMX, P832/DL, P-8+

1.3 Compatible Wireless Keys

Please refer to the instruction sheets of the following keys for more information.

The PC5102-433 v1.X can receive signals from the following keys:

- WLS909-433 Wireless Key
- WLS919-433 Wireless Key
- PWLS909-433 Wireless Key
- PWLS919-433 Wireless Key

WARNING

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

1.4 Batteries

The PWLS909-433/WLS909-433 use three A-76 batteries and the PWLS919-433/WLS919-433 use two CR2032 lithium batteries.

Section 2: PC5102-433 Set Up & Wiring

This section describes how to set up and wire the PC5102-433 module.

2.1 Choose a Mounting Location for the PC5102-433

NOTE: Mount the PC5102-433 receiver after you have done placement tests with the wireless keys (see sections 5.1 and 5.2).

The receiver must be mounted at least 6 feet above ground level in a location that is (1) dry (2) close to the point of entry (3) and as far away from large metal objects such as heating ducts, or objects that can generate interference such as computers, televisions or electric motors. Considering the PC5102-433 receiver will typically be used to arm/disarm the control panel and open the garage door, a good mounting location would be inside the garage itself.

NOTE: Ensure that the electrical wires will not run over the antenna of the module when it is mounted.

2.2 Terminal Descriptions

The PC5102-433 has 2 on-board relay outputs which can be used in many different applications. They can be used to activate LEDs, open garage doors, trigger X-10 devices etc.

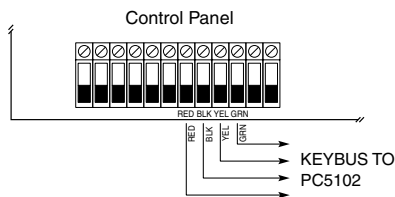


- NO1-** PGM1 Normally Open Relay Contact
- NC1-** PGM1 Normally Closed Relay Contact
- COM1-** PGM1 Relay Common Contact
- NO2-** PGM2 Normally Open Relay Contact
- NC2-** PGM2 Normally Closed Relay Contact
- COM2-** PGM2 Relay Common Contact

- RED-** Keybus Power +12V
- BLK-** Keybus Ground
- YEL-** Keybus Clock
- GRN-** Keybus Data

2.3 Connecting the PC5102-433 Receiver

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



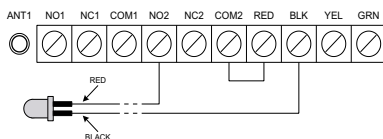
Connect the PC5102-433 to the four-wire Keybus of the control panel according to the following diagram.

After you have completed the wiring, reconnect the power to the security system. Now that you have wired the PC5102-433, you should enroll and program the wireless keys. See Section 3 for instructions.

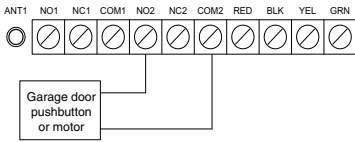
NOTE: Each control panel may either have a PC5102 or a PC5132 enrolled but not both.

2.4 Connecting the LED to the PC5102-433

The LED can be used to indicate whether the system is armed or disarmed. If the output is programmed as an armed status output, the red LED will turn on when the system is armed and will turn off when the system is disarmed.



2.5 Connecting a Garage Door to the PC5102-433



Connect an output of the PC5102-433 across the wall-mounted push button or directly at the motor of the garage door opener (please consult the garage door opener instructions for proper connections). Set up the system and wireless key so that it is programmed to pulse an output for a short duration (5 seconds) so that every time the programmed key is pressed the garage door is opened or closed. The system can also be set up so that

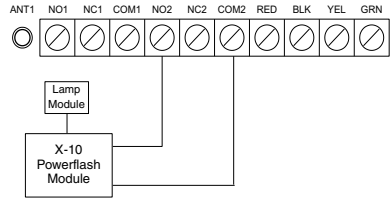
an output on the PC5102-433 will follow a main panel output that is programmed as a command output and is set up on the wireless key as such. Doing this will also activate an output on the PC5102-433 for 5 seconds (please refer to the control panel manual for a listing of available output types and their functions). PGM 1 and/or PGM 2 on the PC5102-433 can be set up to open a garage door (please refer to Section 4.1).

2.6 Connecting an X-10 Powerflash Module to the PC5102-433

When connecting an X-10 Powerflash module to the PC5102-433, different lights within or outside the home can be controlled, such as table lamps, or porch and driveway lights that illuminate the entry / exit paths.

This can be done by setting up the system and wireless key in one of several ways:

- The wireless key can toggle an output ON/OFF, triggering the X-10 Powerflash module, providing direct control of lighting.
- The wireless key can turn on an output for a programmable amount of time (5 seconds to 99 minutes and 99 seconds), turning on lights for the amount of time the homeowner requires.
- The PC5102 output can be programmed to follow a main panel output which can turn on lights when the panel is armed and turn them off when disarmed, turn on lights when an alarm occurs and turn them off when disarmed, etc. Please refer to the control panel *Installation Manual* for a listing of available output types and their function. PGM 1 and/or PGM 2 on the PC5102-433 can be set up for this operation (see Section 4.1).



Section 3: Enrolling Wireless Keys

This section describes how to enroll wireless keys. For more information on these keys, read the instruction sheet included with each key.

3.1 A Note about Electronic Serial Numbers

An electronic serial number (ESN) is printed on the back of each wireless key. ESNs are used to enroll the wireless keys with the PC5102-433 receiver.

In order to reduce the occurrence of wireless keys with the same serial number, 6-digit serial numbers are now printed on the back of each wireless key. 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, P-8+, PC501X v2.0 & higher, P832/DL v2.0 and higher, PC1555(MX), P-6B(MX), PC580 and P-48.

The (P)WLS909-433 and (P)WLS919-433 keys have both a 5-digit and a 6-digit serial number printed on them. When connecting the PC5102-433 to a PC5010 v1.x or P-832 v1.x panel, enter 5-digit serial numbers only. When connecting the PC5102-433 to a PC5020, P-8+, PC5015 v2.x and higher, P832DL v2.x and higher, PC5010 v2.0 and higher, P832 v2.0 and higher, PC1555(MX), P-6B(MX), PC580 or P-48 panel enter the 6-digit serial number.

3.2 Enroll & Program Wireless Keys

For wireless keys to work on the system, you need to enroll them and then program the function buttons, if the default values are not the functions desired. Wireless keys are not assigned to zones and require no zone programming. You can enroll up to 8 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]-[48] to program the wireless key serial number. These numbers correspond to wireless key numbers 01- 08.
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/P-8+/PC501X/P832/P832DL only)** By default, all wireless keys are assigned to Partition 1. To assign keys to Partition 2, enable the appropriate options in programming section [91].

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

8. To exit press [#].

Program the (P)WLS909-433 or (P)WLS919-433 Function Buttons

(P)WLS909-433 and (P)WLS919-433 wireless keys have four programmable function buttons. Default functions have been assigned, but you may program other functions if desired. After the functions are programmed, when you press and hold one of the four buttons for one second, the system will execute the programmed function.

For systems using partitions (PC5020/P-8+/PC501X/P832/P832DL only): All wireless keys assigned to Partition 1 will have the four functions programmed in section [61]. All wireless keys assigned to Partition 2-8 will have the four functions programmed in section [62-68]. For example, if function button 1 in Section [61] 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 [61] to [68] for partitions 1 to 8.
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 [#].

3.3 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 – 24 for wireless keys 01-08 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 PC5102-433 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, P-8+, PC501X v2.0 and higher, P832/DL v2.0 and higher, PC1555(MX), P-6B(MX), PC580 v2.0 and higher, P-48 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, P-8+, PC501X, P832/DL, PC1555(MX), P-6B(MX), PC580 v2.0 and higher and P-48 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].

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

Section 4: Other Programming

4.1 PC5102 PGM Outputs

The PC5102-433 has two on-board Form C relay PGM outputs. Each of these can be individually programmed to:

1. Follow main panel PGM outputs 1 to 14.

NOTE: Please refer to your System Installation Manual for available PGM outputs.

NOTE: If the PC5102-433 is connected to the PC580/PC1555/P-48/P-6B (all versions), PC5010 v1.x, P832 v1.x or the WSS5010 1.0, 2.1, the PC5102 PGM outputs cannot be programmed to follow main panel PGM outputs 1 or 2.

2. Activate for a programmable amount of time when a signal is received from a wireless key programmed with output option 31 or 32 (PC5102 PGM pulse) and the PGM output programming section [92] or [93] is programmed with option 15 (PC5102 PGM pulse). The amount of time that the PGM outputs can be programmed to remain on is programmed in sections [94] and/or [95]. The default activation time is 5 seconds.
3. Toggle state when a signal is received from a wireless key programmed with option 31 or 32 and the PGM output programming section [92] or [93] is programmed with option 16 (PC5102 PGM toggle).

4.2 Enable PC5102-433 Supervision

The control panel will supervise the PC5102-433 receiver via the Keybus after at least one key has been enrolled on the module (see section 3.2 "Enrolling Wireless Keys").

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

1. Exit and then re-enter installer's programming.
2. Enter programming section [902]. Wait approximately one 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 PC5102-433 module from an existing system, you will have to disable supervision of the PC5102-433.

NOTE: *Deleting all wireless keys from the PC5102-433 or defaulting the PC5102-433 will cause a supervisory fault.*

To disable PC5102-433 supervision:

1. Disconnect the PC5102-433 from the Keybus
2. Enter [*][8][Installer's 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 PC5102-433 is present on the system. On LCD keypads, scroll until the module name PC5132 appears on the display.
3. To exit press [#].

If the PC5102-433 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 keys have been enrolled on the PC5102

NOTE: *The PC5102-433 will be supervised and displayed as a PC5132.*

4.3 PC5102-433 Software Default

Returning the PC5102-433 programming to factory default settings is a quick way to remove all the enrolled wireless keys 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 PC5102-433 module to factory default settings.*

To restore the PC5102-433 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 programming for the PC5102-433 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*.

4.4 Deleting Wireless Keys

To remove a wireless key from the system, follow the guideline for enrolling a wireless key (see section 3.2). Program the ESN as [000000]. The wireless key will then be removed from the system.

Now that you have completed all PC5102-433 related programming, you can test and mount the receiver. See Section 5 for more information.

Section 5: Testing & Mounting

5.1 Test the Reception of Wireless Keys

It is very important to test each wireless key. Following these steps will test the signal strength between the PC5102-433 and the wireless key.

Testing Individual Wireless Keys

To ensure that the PC5102-433 receiver is receiving transmissions from these devices, use the function keys on the (P)WLS909-433/(P)WLS919-433 at several different locations in the installation.

5.2 Mount the PC5102-433

When you have tested reception of the PC5102-433 with all the wireless devices (see section 5.1) and you have a good mounting location, mount the PC5102:

1. Pull the Keybus wires through the hole at the bottom of the back part of the cabinet.
2. Mount the cabinet securely to the wall using the two 'ears' of the cabinet or using the two mounting holes inside the cabinet. To use holes inside the cabinet, the PCB must first be removed. To remove the PCB, release it from the two tabs at the bottom of the PCB and then lift it out.

Caution: Do not touch the antenna or the coils as this could damage the unit and will result in improper operation.

Note: If you are not using the 'ears' to mount the cabinet, you can break these off.

Now that your PC5102-433 and wireless devices are mounted and working properly, read Section 6 for information on potential wireless trouble conditions and battery replacement.

Section 6: Additional Notes

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 PC5102-433 and/or any enrolled wireless keys.

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.

6.2 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.
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 battery trouble will clear when any button is pressed after the installation of the new batteries 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.

Section 7: Troubleshooting

1. When I enter Sections [41] - [48] to add a wireless key, the keypad sounds a long beep.

You cannot enter ESNs unless a PC5102-433 wireless receiver is connected to the Keybus. See section 2 for instructions on setting up and wiring the PC5102-433 module.

2. I have entered the ESN for the wireless key but when I press the function keys, the panel does not perform the desired function.

Check the following:

- Ensure the ESN has been entered correctly.
- Ensure that the function keys have been programmed for the requested function.
- Ensure that the wireless key is enabled for the partition (if partition programming is used).

3. When I press the wireless key function buttons, I see no 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 PC5102. Try testing the device in the same room as the receiver.
- Confirm that the PC5102-433 is properly connected to the Keybus (see section 2 for PC5102-433 setup and wiring instructions).
- Check that you are testing the wireless key 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 PC5102.
- Ensure that all wireless keys operate correctly throughout.

Section 8: Programming Worksheets

[804] 5102-433 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.

Wireless Key Serial Numbers

Default = 000000

[41] Key 01

[45] Key 05

[42] Key 02

[46] Key 05

[43] Key 03

[47] Key 07

[44] Key 04

[48] Key 08

Wireless Key Options

Entry	Key Description	Entry	Key Description
00	Null Key	17	[*][1] Reactivate Stay/Aways
01-02	<i>For Future Use</i>	18	<i>For Future Use</i>
03	Stay Arm	19	[*][7][3] Command Output #3
04	Away Arm	20	For Future Use
05	[*][9] No-Entry Arm	21	[*][7][4] Command Output #4
06	[*][4] Chime ON/OFF	22-26	<i>For Future Use</i>
07	[*][6][][4] System Test	27	Disarm (OFF)
08-12	<i>For Future Use</i>	28	Fire Alarm
13	[*][7][1] Command Output #1	29	Auxiliary Alarm
14	[*][7][2] Command Output #2 / Sensor Reset	30	Panic Alarm
15	<i>For Future Use</i>	31	PC5102 PGM1 Pulse
16	[*][0] Quick Exit	32	PC5102 PGM2 Pulse

Wireless Key Options

Partition 1 Wireless Key Options

[61] Function Key 1	03	<input type="text"/>	Function Key 3	27	<input type="text"/>
Function Key 2	04	<input type="text"/>	Function Key 4	30	<input type="text"/>

Partition 2 Wireless Key Options

[62] Function Key 1	03	<input type="text"/>	Function Key 3	27	<input type="text"/>
Function Key 2	04	<input type="text"/>	Function Key 4	30	<input type="text"/>

Partition 3 Wireless Key Options

[63] Function Key 1	03	<input type="text"/>	Function Key 3	27	<input type="text"/>
Function Key 2	04	<input type="text"/>	Function Key 4	30	<input type="text"/>

Partition 4 Wireless Key Options

[64] Function Key 1	03	<input type="text"/>	Function Key 3	27	<input type="text"/>
Function Key 2	04	<input type="text"/>	Function Key 4	30	<input type="text"/>

Partition 5 Wireless Key Options

[65] Function Key 1	03	<input type="text"/>	Function Key 3	27	<input type="text"/>
Function Key 2	04	<input type="text"/>	Function Key 4	30	<input type="text"/>

Partition 6 Wireless Key Options

[66] Function Key 1	03	<input type="text"/>	Function Key 3	27	<input type="text"/>
Function Key 2	04	<input type="text"/>	Function Key 4	30	<input type="text"/>

Partition 7 Wireless Key Options

[67] Function Key 1	03	<input type="text"/>	Function Key 3	27	<input type="text"/>
Function Key 2	04	<input type="text"/>	Function Key 4	30	<input type="text"/>

Partition 8 Wireless Key Options

[68] Function Key 1	03	_ _	Function Key 3	27	_ _
Function Key 2	04	_ _	Function Key 4	30	_ _

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

Default = 01

Wireless Key 01	_ _	Wireless Key 05	_ _
Wireless Key 02	_ _	Wireless Key 06	_ _
Wireless Key 03	_ _	Wireless Key 07	_ _
Wireless Key 04	_ _	Wireless Key 08	_ _

PC5102 Output Options

Entry	Description	Entry	Description
00	Null (No Operation)	08	PC5208 PGM8
01	Main Panel PGM1	09	PC5208 PGM9
02	Main Panel PGM2	10	PC5208 PGM10
03	PC5208 PGM3	11	PC5204 PGM11
04	PC5208 PGM4	12	PC5204 PGM12
05	PC5208 PGM5	13	PC5204 PGM13
06	PC5208 PGM6	14	PC5204 PGM14
07	PC5208 PGM7	15	PC5102 PGM Pulse (local)
		16	PC5102 PGM Toggle (local)

[92] PC5102 PGM1 Output Option

Default 01

PGM1 Output Option |_|_|

[93] PC5102 PGM2 Output Option

Default 02

PGM2 Output Option |_|_|

[94] PC5102 - PGM1 Output Activation Time

Default 00

PGM1 Output Activation Time (Minutes) |_|_|

Default 05

PGM1 Output Activation Time (Seconds) |_|_|

[95] PC5102 - PGM2 Output Activation Time

Default 00

PGM2 Output Activation Time (Minutes) |_|_|

Default 05

PGM2 Output Activation Time (Seconds) |_|_|

NOTE: Sections [94] and [95] have a valid minimum programmable value of 00 minutes 01 seconds, and a valid maximum programmable value of 99 minutes 99 seconds.

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.

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.

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 purchaser 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. There is absolutely no warranty on software and all software products are sold as a user license under the terms of the software license agreement included with the product. The Customer assumes all responsibility for the proper selection, installation, operation and maintenance of any products purchased from DSC. Custom products are only warranted to the extent that they do not function upon delivery. In such cases, DSC can replace or credit at its option.

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.

Items Not Covered by Warranty

In addition to the items which void the Warranty, the following items shall not be covered by Warranty: (i) freight cost to the repair centre; (ii) products which are not identified with DSC's product label and lot number or serial number; (iii) products disassembled or repaired in such a manner as to adversely affect performance or prevent adequate inspection or testing to verify any warranty claim. Access cards or tags returned for replacement

under warranty will be credited or replaced at DSC's option. Products not covered by this warranty, or otherwise out of warranty due to age, misuse, or damage shall be evaluated, and a repair estimate shall be provided. No repair work will be performed until a valid purchase order is received from the Customer and a Return Merchandise Authorisation number (RMA) is issued by DSC's Customer Service.

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. The laws of some jurisdictions limit or do not allow the disclaimer of consequential damages. If the laws of such a jurisdiction apply to any claim by or against DSC, the limitations and disclaimers contained here shall be to the greatest extent permitted by law. Some states do not allow the exclusion or limitation of incidental or consequential damages, so that the above may not apply to you.

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.

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.



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