Installation and Operation Instructions for the Wireless IR Door .

Point Six, Inc.

Wireless IR Door Sensor Model Point Sensor IR Door

Installation and Operation Instructions

The Point Sensor IR Door wireless IR Door sensor transmits a digital value representing either open or closed status, and the number of times the door has opened and closed and has a unique serial number to a 418 MHz receiver. The Point Sensor IR Door is enclosed in a high impact ABS enclosure for direct surface mounting in the environment to be measured. Point Sensor IR Door is battery operated, the batteries may be replaced by the user.

Application: Apply the sensor to a surface to with double-sided adhesive tape. Make sure that the side labeled with FCC ID is visible and away from any metal surfaces.

Service Function: The wireless IR Door sensor has an installation mode switch. A momentary push of this switch will start the convert/transmit cycles. When new and until this button is pushed the Point Sensor IR Door will not transmit. The Point Sensor IR Door will transmit a special installation status mark in the data packet immediately after the installation/start switch is pushed. After the start a push of the installation switch will result in the immediate transmission of data and ID and installation status mark.

Battery: Two 3.6 Volt lithium batteries power the Point Sensor IR Door wireless sensor. Each battery will last for more than 10 years in the idle state (as shipped from the manufacturer). The Point Sensor IR Door will transmit data for as long as 3 years at a rate of once each 30 seconds once started. The Point Sensor IR Door is completely covered with a water resistant conformal coating to protect the electronics from the environment and condensation. The user cannot replace the battery. The Point Sensor IR Door may be placed in a quiescent state (battery life greater than 10 years) by holding the installation switch closed for more than 5 seconds.

FCC ID: M5ZIR1
MADE IN USA

Wireless IR Door Sensor Data Format

The Point Six, Inc. 418 MHz wireless sensors require a compatible receiver with the ability to receive, error check and provide RS232 and RS422/485 interface. This document describes the data format provided by the **HA9-wow** 418 MHz. Receiver.

The transmit packet from a receiver is approximately 15 milliseconds in duration and consists of 13 bytes of data:

1-byte ID/Mode field
8-byte serial number
2-byte pressure level as a 12-bit number
2-byte CRC-16 error check

The HA9-wow receiver processes this packet. The receiver performs a CRC-16 error check on the packet. If the data is not accurate it is discarded. When a packet is received that is error free it is converted to a 29-character packet and transmitted out the serial port at 19,200 Baud. The data is transmitted serially in ASCII Hex format and terminated with a CR character. This format requires two bytes for each byte of data; 14 data bytes x 2=28 plus the CR is 29 characters. See the HA8-wow specification for details.

The resulting binary data format of the packet is:

1-byte ID field   this field will contain a byte whose LSBit indicates the service state of the transmitter, 0=normal, 1=service mode.

8-byte serial#   this field contains the serial number of the 1-Wire sensor.

2-byte data   this field contains the pressure data as a 12-bit number stored MSB first. A value of 0FFF is a full scale reading and represents 30 PSIA. A zero input pressure will result in a reading of 0000.

2-byte CRC-16   this is the originally received data packet CRC as described above.

1-byte checksum   the checksum is a mod 256 sum of all the ASCII character values in the response but does not include the CR

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Example: "**Point Sensor IR Door**" *Wireless IR Door Transmitter*

91F1D61300050000070000BD2DE1**<CR>**   *string from an HA8*
11F1D61300050000070000BD2DE1<CR>   *string from an HA9*

The device type field: IR Door has device type 91/11 hex. A 90/10 hex when in service mode.

91**F1D61300**050000070000BD2DE1**<CR>**   *string from an HA8*
11**F1D61300**050000070000BD2DE1**<CR>**   *string from an HA9*

The MS-30 bits of these 4-bytes are the serial number of the IR Door. The LS-2 bits are the status flags for the open and closed. The LS bit (bit-0) is the Open switch flag and the next most significant bit (bit-1) is the Closed switch flag.

91F1D61300**050000**070000BD2DE1**<CR>**   *string from an HA8*
11F1D61300**050000**070000BD2DE1**<CR>**   *string from an HA9*

This 24-bit field is the Open counter stored LS-byte first the value shown is a count of 5 open cycles.

11F1D61300050000**070000**BD2DE1**<CR>**   *string from an HA8*
11F1D61300050000**070000**BD2DE1**<CR>**   *string from an HA9*

THIS 24-BIT FIELD IS THE CLOSED COUNTER STORED LS-BYTE FIRST, THE VALUE SHOWN IS A ACCOUNT OF 7 CLOSED CYCLES.

91F1D61300050000070000**BD2D**E1**<CR>**   *string from an HA8*
11F1D61300050000070000**BD2D**E1**<CR>**   *string from an HA9*

This field is the CRC-16 error check as was originally received and checked. This CRC is over the first 11 bytes of the packet starting with the device type and ending with inclusion of the temperature data.

FCC Radio Frequency Interference Statement

Wireless IR Door Sensor   FCC ID: M5ZIR1

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15, Subpart B, of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause interference to radio communications.

The limits are designed to provide reasonable protection against such interference in a residential situation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- *Reorient or relocate the receiving antenna of the affected radio or television*
- *Increase the separation between the equipment and the affected receiver.*
- *Connect the equipment and the affected receiver to power outlets on separate circuits.*
- *Consult the dealer or an experienced radio/TV technician for help.*

MODIFICATIONS

Changes or modifications not expressly approved by *Point Six Inc.* could void the user's authority to operate the equipment.