

FCC ID: M5ZTHL

Installation and Operation Instructions for the Wireless Temp/Humidity.

Point Six, Inc.

Wireless Temperature/Relative-Humidity Sensor Model Point Sensor Temp/Humidity

Installation and Operation Instructions

The Point Sensor Temp/Humidity sensor transmits a digital temperature, relative-humidity (or light level) and a unique serial number to a 418 MHz receiver. The Point Sensor Temp/Humidity is enclosed in a high impact ABS enclosure for direct surface mounting in the environment to be measured. The Point Sensor Temp/Humidity is battery operated.

Application: Apply the sensor to the surface to be monitored 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 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 Temp/Humidity will not transmit. The Point Sensor Temp/Humidity 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 temperature, relative-humidity ID and installation status mark.

Battery: A 3.6 Volt lithium battery powers the Point Sensor Temp/Humidity wireless sensor. The battery will last for more than 10 years in the idle state (as shipped from the manufacturer). The Point Sensor Temp/Humidity will transmit data for as long as 5 years at a rate of once each minute once started. The Point Sensor Temp/Humidity is completely covered with a water resistant conformal coating to protect the electronics from the environment and condensation. The user can replace the battery. The Point Sensor Temp/Humidity may be placed in a quiescent state (battery life greater than 10 years) by holding the installation switch closed for more than 4 seconds.

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MADE IN USA

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES, OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESERED OPERATION

Wireless 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 **HA8-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 temperature/relative-humidity or temperature/light level
- 2-byte CRC-16 error check

The HA8-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 temperature %RH stored MSB first. The MSbit of the MSB is the sign bit for the temperature value which is stored as the LSB in ½ deg C units. |

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Bits 0-6 of the MSB contain the RH value in %RH (0-100%). In the case of light level bits 0-6 of the MSB is the relative light level.

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

Example:

C828AE9105000000AA2D2DD474AB<CR>

This field is the mode indicator, the LS-bit which indicates the service state of the transmitter, C8=normal, C7=service mode.

C828AE9105000000AA2D2DD474AB <CR>

This field is the unique serial number of the 1-Wire sensor.

C828AE9105000000AA2D2DD474AB <CR>

This is the temperature and %RH field. The MSBit of the MSByte is low so the temperature is a positive number, 2D is 45 so the temperature is +22.5 C. The %RH is 45. A value on this field of A1F2 would represent a temperature of (242-256)/2 or -7 C and a %RH or 33. Temperature is stored in the LSByte, if the MSBit of the MSB is 1 then the temperature is negative and the conversion math is (n-256)/2 otherwise use n/2.

C828AE9105000000AA2D2DD474AB <CR>

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 mode flags and ending with inclusion of the temperature data.

C828AE9105000000AA2D2DD474AB <CR>

This field is the mod 256 sum of all the ASCII character values in the response but does not include the <CR>.

C828AE9105000000AA2D2DD474AB <CR>

This is the CR terminator, 0Dhex.

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FCC Radio Frequency Interference Statement

Wireless Temp/Humidity Sensor

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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.