

# Point Sensor Analog (0-5vdc) 3006-23



## FEATURES

- 0-5vdc Analog input transmitter
- 12-bit Analog to Digital Conversion
- Transmits unique ID and analog value
- Up to 600 foot transmission range
- Transmission rates from 10 to 17 seconds random
- Up to 100 transmitters can coexist
- Battery lasts up to 4 years
- Very small (2.5" x 2.0" X 1.0") ABS Enclosure
- Water resistant coating on PCB
- CRC-16 checked Status, ID, and analog data
- Internal Loop antenna
- Low Cost

## DESCRIPTION

The Point Sensor Analog wireless transmitter is a battery operated 12 bit analog-to-digital converter with a microprocessor controlled 418 MHz. FCC certified radio transmitter. The Sensor has an on board time of day clock that allows it to spend most of the time in a low power quiescent state. At predetermined time intervals the clock will wake up the onboard microprocessor. Unique serial number information and analog data is read from a 12-bit analog to digital converter. This information is combined with a CRC-16 error check and transmitted in a very short data packet that results in a transmitter on time of only 15 milliseconds. This architecture allows the Sensor to consume very low energy resulting in a battery life of up to 4 years.

The electronics are coated with a conformal material that provides a moisture barrier against condensation. Submersion in water is not recommended. A button on the top of the ABS cover permits a user to activate the service switch. When the service switch is pushed a data transmission occurs immediately and a special mark is introduced in the ID field of the transmitted data packet to indicate which sensor is in service or installation. The Sensor is shipped with the transmitter turned off (anytime the Sensor is to be shipped the transmitter should be turned off or must be placed in a shielded container to prevent interference that might cause shipping problems). Start the Sensor by removing the battery pull tab to engage the battery. The Point Sensor Analog can be turned off by re-inserting the battery pull tab or by removing the battery.

Transmission rate	10-17 seconds random
Shelf life with battery installed	10 Years in quiescent mode
Dimensions (enclosure)	2.5 W X 2.0 H X 1.0 D (inches)
Weight	1.5 oz.
Storage Temperature	-40° to 85° C
Operating Temperature	-40° to 85° C
Input (0-5vdc)	100 kohms, 0-5vdc, 12-bit resolution, 5v = 4095
Humidity	0% to 90% non-condensing
Battery life with transmissions	Up to 4 years
Battery	3.6 volt Lithium
FCC Certified	FCC ID: M5ZP6EZIO

**Point Six Wireless**  
*Unique, High Value Wireless Solutions*

# ***Installation and Operation Instructions***

## Point Sensor Analog

The Point Sensor Analog wireless analog to digital converter transmits a 12-bit converted 0-5vdc input and unique serial number to a 418 MHz receiver. The Point Sensor Analog is enclosed in a high impact ABS enclosure for direct surface mounting in the environment to be measured. Transmission times of 10 to 17 seconds random.

Application: Apply the sensor to the surface to be monitored with double-sided adhesive tape. Make sure that the side with the product label is away from any metal surfaces.

Service Function: The sensor has an installation mode switch (pushbutton located in center of enclosure lid). When the pushbutton is momentarily pressed, the device will transmit a special installation status mark in the data packet immediately after the service switch is released. The immediate transmission of temperature, ID and installation status mark will occur anytime this switch is pressed. The Point Sensor Analog may be placed in a quiescent state by re-installing the battery pull tab or removing the battery.

Battery: A 3.6 Volt lithium battery powers the wireless analog sensor. The battery will last for more than 5 years in the quiescent state (as shipped from the manufacturer). The device will transmit data for as long as 4 years at a rate of once every 10 to 17 seconds once started. The electronic components are completely covered with a water resistant coating to protect from condensation. The user can replace the battery.

**FCC ID: M5ZP6EZIO  
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

### FCC Radio Frequency Interference Statement

Analog Sensor                      FCC ID: M5ZP6EZIO

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 Wireless** could void the user's authority to operate the equipment.

# ***Wireless Transmitter Packet-Data Specification***

**“Analog” (41/40) (12-bit unsigned)**

**IDSSSSSSSSSSSSSSSSSSAAAACCCCKK<CR>**

Note: All fields are in ASCII Hex

“ID”  
This field is the device type and mode indicator, the 41 or 40 indicates that this is a “Analog” transmitter; 40 indicates the transmitter is in service mode.

“SSSSSSSSSSSSSSSSSS”  
This field is the 64 bit unique serial number of the sensor.

“AAAA”  
This is the analog data field. This field is 16 bits stored MSB first (bits 15-8) and LSB last (bits 7-0) from left to right. The MSBits (bit 15-12) will always be zero, this is a value of 0-4095 for 0-fullscale.

5vdc Version:  
(Value /4095)\*5V = voltage on input.

“CCCC”  
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 but not including CRC-16.

“KK”  
This field is the mod 256 sum of all the binary data values as represented by the ASCII hex values in the response but does not include the <CR>.

Example:

402771EE0100000040BC8AABF07  
SN=040000001EE7127; Value=0BC8 – 73.6% of full scale; CRC-16=AABF; Checksum=07