HOBO® Data Node, Ext Temp/RH, Analog, Pulse
(Part No: ZW-005)

Inside this package:
- ZW-005 HOBO data node
- Temp/RH cable
- AC power adapter
- 3 AAA batteries
- Accessory kit

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Manual Part No: MAN-ZW-005
Doc No: 13556-B

Introduction

Thank you for purchasing an Onset HOBO data node. With proper care, it will give you years of accurate and reliable measurements.

The ZW-005 HOBO data node is configured with a temperature/RH channel designed to accept the included temp/RH cable, along with one analog and one pulse channel.

The analog channel accepts a wide range of Onset and third-party sensors/transducers with a 0-2.5 VDC output, including external temperature and AC current sensors. Specifications for Onset sensors can be found at www.onsetcomp.com or by contacting your Onset Authorized Dealer. For 0-5 VDC, 0-10 VDC, or 4-20 mA output, use optional Onset part no. CABLE-ADAP5, CABLE-ADAP10, or CABLE-4-20mA respectively.

Onset part no. CABLE-2.5-STEREO is required to connect to the HOBO data node's pulse channel. (Connect the pulse output device to the cable's black and white leads.)

Note: Refer to the Onset Wireless Data Node Setup Guide and HOBOware® Pro Software User Guide for information on configuring and using the HOBO data node.
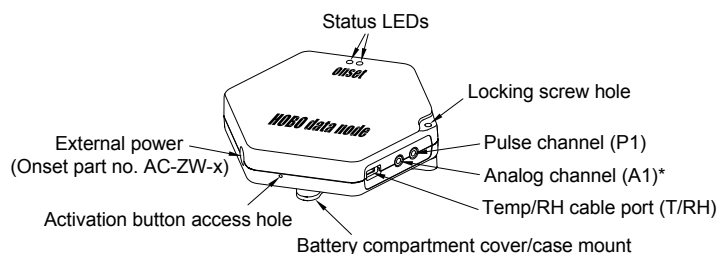
*Caution: Analog channel input cannot exceed 2.5 VDC. For sensor outputs up to 10 VDC, use appropriate voltage adapter cable.

Specifications

Radio power	1.6 mW (2 dBm)
Transmission range	Approx. 100 m (328 ft), depending on obstructions or interference
Wireless data standard	IEEE 802.15.4 2.4 GHz band
Measurement ranges	**Temperature:** -40 to 70° C (-40 to 158° F) · **RH:** 0 to 100% RH, -40 to 70° C (-40 to 158° F) **Analog channel:** 0 to 2.5 VDC, 0 to 5 VDC (w/ CABLE-ADAP5), 0 to 10 VDC (w/ CABLE-ADAP10)
Pulse channel:	**Maximum input frequency:** 120 Hz (120 pulses per second) · **Measurement range:** 0 to 65,535 pulses per logging interval · **Resolution:** 1 pulse · **Recommended input type:** Electronic solid state switch closure or CMOS-level digital output (example: FET, opto-FET or open collector) · **Minimum pulse width:** 1 ms · **Input/output impedance:** 100 KΩ · **Maximum input voltage**: 2.8 V · **Bits per sample:** 16
Accuracy	**Temperature:** 0.2° C over 0 to 50° C (0.36° F over 32 to 122° F) · **RH:** +/- 2.5% from 10 to 90% typical, max. +/- 3.5% **Analog channel:** +/- 1.544 mV plus 2% of reading typical
Resolution	**Temperature:** 0.02° C @ 25° C (0.04° F @ 77° F) · **RH:** 0.03% **Analog channel:** 0.6 mV
Response time	**Temperature:** 5 minutes in air moving 1 m/sec (3.3 ft/sec) · **RH:** 10 minutes in air moving 1 m/sec (3.3 ft/sec) with protective cap
Operating temperature	**(batteries installed):** -20 to 50° C (-4 to 122° F) · **(no batteries):** -20 to 70° C (-4 to 158° F)
Temperature stability (drift)	< 0.1° C (0.18° F) per year
Operating RH	5% to 95% non-condensing
RH stability (drift)	< 1% per year typical; hysteresis 1%
Time accuracy	± 1 minute per month at 25° C (77° F)
Memory capacity	128K
Power options	**AC power adapter**: Onset part no. AC-ZW-1; **Batteries:** 3 alkaline AAA included

Battery life	1 year @ 15 minute measurement interval, 60 minute transmit interval **Note:** For a ZW-005 that has been designated as a router in a network, battery life is approximately 24 hours
Case material	ABS
Dimensions	96.5 x 108 x 28 mm (3.8 x 4.25 x 1.1 in.)
Weight (w/batteries)	138 g (4.87 oz)
CE	The CE Marking identifies this product as complying with all relevant directives in the European Union (EU)
FCC	See below

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Changes or modifications not expressly approved by Onset Computer Corporation could void the user's authority to operate the equipment.

To comply with FCC and Industry Canada RF radiation exposure limits for general population, the HOBO data nodes, receivers, and routers must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Canada

This device has been designed to operate with the antenna listed below, and having a maximum gain of 1 dB. Antennas not included in this list or having a gain greater than 1 dB are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

Approved antenna: Johanson Technologies P/N 2450AT45A100 1.0 dBi chip antenna

FCC Declaration of Conformity

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.