

HOBO ZW Series is a family of wireless data nodes that provide centralized monitoring of energy and environmental conditions in buildings.

Best suited for on-site facility monitoring applications where web-based data access is not required, HOBO data nodes transmit high-accuracy, real-time data from dozens of points to a central PC. This eliminates the need of having to manually retrieve and offload individual data loggers, saving you time and money.

### Measurements:

|                   |                       |
|-------------------|-----------------------|
| Temperature       | Compressed airflow    |
| Relative humidity | DC current            |
| AC voltage        | Differential pressure |
| AC current        | Water usage           |
| Kilowatts         | 4-20 mA               |
| Kilowatt hours    | 0-10 vdc              |
| Gauge pressure    | Pulse                 |
| CO <sub>2</sub>   |                       |

### Key Advantages:

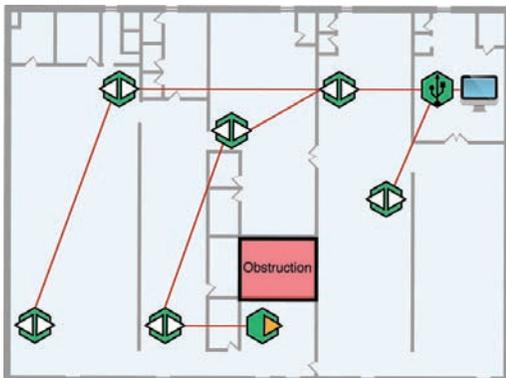
- Provides centralized building performance data collection
- Transmission of real-time data within a self-healing mesh network eliminates line-of-sight issues
- Automatically routes data back to receiver
- Onboard buffer memory helps prevent data loss
- Alarm notification via email or text messages
- Powerful software for organizing and viewing data
- Map deployed data nodes
- Label and group data nodes for easy identification

### Centralized Data Collection

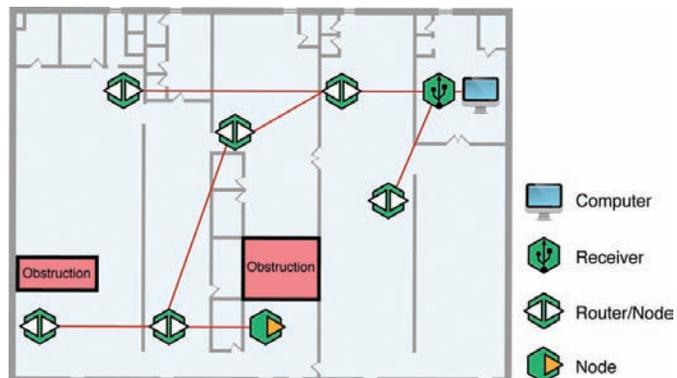
HOBO data nodes, routers, and receivers all work together as a system to provide reliable, accurate real-time information on how a building is performing. Whether you are a warehouse manager looking to keep a close eye on temperature and humidity conditions, a facility manager looking at indoor air quality, or a building energy manager tracking energy use, HOBO data nodes provide reliable data collection without the hassles of manually offloading data.

### Self-Healing Technology

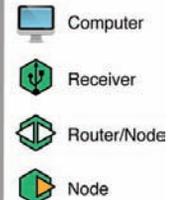
HOBO data nodes leverage MESH networking technology, which ensures that data is automatically re-routed back to the receiver without any manual intervention.



Scenario 1. Typical data flow back to the receiver



Scenario 2. Self healing network automatically compensates for new obstruction





HOBOWare Pro 3.0 is included with the ZW Receiver

## Advanced Software Capabilities

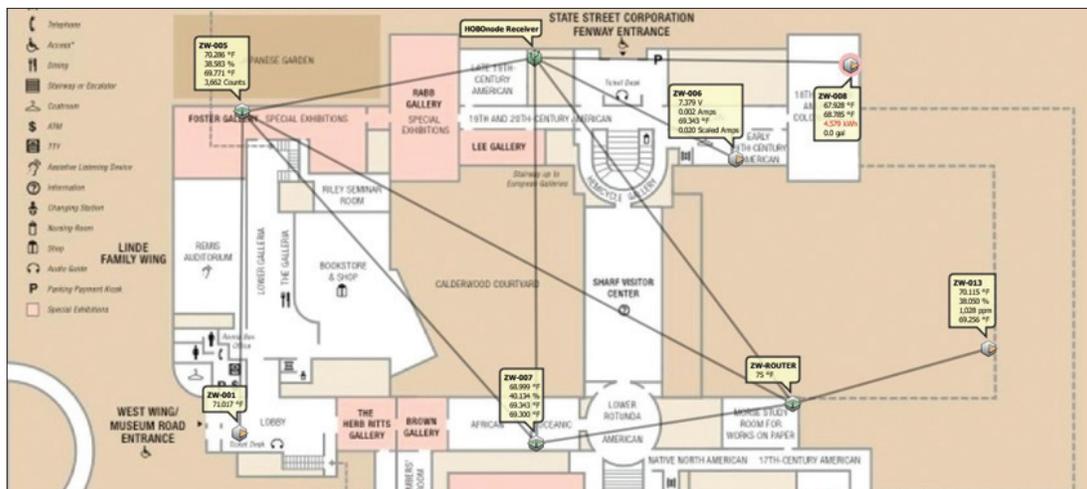
HOBOnode™ Manager software, a component of HOBOWare Pro graphing and analysis software, lets you view real-time energy and environmental data, set alarm notifications, and get an at-a-glance view of your network with the Network Map feature. HOBOnode Manager software also offers one-click export of your data to Microsoft Excel and other programs, and provides network signal strength indication.

## Alarm Capabilities:

- HOBOnode Manager software will send a text message to your phone and email your computer when conditions exceed set thresholds.
- System alarms lets you know if a data node is not connected to your network.

## Network Map Feature

In many monitoring applications, it's important to view a complete network of your HOBOWare Data Nodes. HOBOnode Manager's Network Map feature provides an at-a-glance view of your network so you can easily locate your HOBOWare Data Nodes within a building.



HOBOnode manager's Network Map feature provides at-a-glance view of a HOBOWare data node network.

Wireless/Indoor Environments

## Specifications

|                   | ZW-RCVR-EU (Receiver)          | ZW-001-EU  | ZW-003-EU  | ZW-005-EU**   | ZW-006-EU   | ZW-007-EU**   | ZW-008-EU   | ZW-ROUTER-EU (Router)            |
|-------------------|--------------------------------|--|--|---|---|---|---|----------------------------------|
| Measurements      | N/A                            | Temp   | Temp, RH   | External T/RH, 1 analog port, 1 pulse input port  | 4 external analog ports   | External T/RH, 2 analog ports   | 2 analog ports, 2 pulse input ports   | N/A                              |
| Probe Size        |                                |  |  | 1cm (0.38 in) diameter probe on 1.8 m (6ft cable)   |   | 1cm (0.38 in) diameter probe on 1.8 m (6ft cable)   |   |                                  |
| Buffer memory     | up to 95k measurements         | 5k measurements  | 4k measurements  | 3k measurements   | 3k measurements   | 3k measurements   | 3k measurements   | N/A                              |
| Sample rate       | N/A                            | 1 min to 18 hrs  | 1 min to 18 hrs  | 1 min to 18 hrs   | 1 min to 18 hrs   | 1 min to 18 hrs   | 1 min to 18 hrs   | N/A                              |
| Transmission rate | N/A                            | 2 min and greater  | 2 min and greater  | 2 min and greater   | 2 min and greater   | 2 min and greater   | 2 min and greater   | N/A                              |
| Power options     | AC power adapter, USB, Battery | AC power adapter, Battery Backup                                 | AC power adapter, Battery Backup   | AC power adapter, Battery Backup  | AC power adapter, Battery Backup  | AC power adapter, Battery Backup  | AC power adapter, Battery Backup  | AC power adapter, Battery Backup |
| Measurement range | N/A                            | Temp: -40° to 70° C (-40° to 158° F)                             | Temp: -40° to 70° C (-40° to 158° F)<br>RH: 5 to 95% RH  | Temp: -40° to 70° C (-40° to 158° F)<br>RH: 5 to 95% RH<br>Analog channels: 0 to 2.5 Vdc; 0 to 5 Vdc (w/ CABLE-ADAP5); 0 to 10 Vdc (w/ CABLE-ADAP10)<br>4-20 mA<br>Pulse channel: 0 to 65,535 pulses per logging interval | Analog channels: 0 to 2.5 Vdc; 0 to 5 Vdc (w/ CABLE-ADAP5); 0 to 10 Vdc (w/ CABLE-ADAP10) | Temp: -40° to 70° C (-40° to 158° F)<br>RH: 5 to 95% RH<br>Analog channels: 0 to 2.5 Vdc; 0 to 5 Vdc (w/ CABLE-ADAP5); 0 to 10 Vdc (w/ CABLE-ADAP10).               | Analog channels: 0 to 2.5 Vdc; 0 to 5 Vdc (w/ CABLE-ADAP5); 0 to 10 Vdc (w/ CABLE-ADAP10).<br>4-20 mA<br>Pulse channel: 0 to 65,535 pulses per logging interval | N/A                              |
| Accuracy          | N/A                            | Temp: ± 0.2° C over 0° to 50° C (± 0.36° F over 32° C to 122° F) | Temp: ± 0.2° C over 0° to 50° C (± 0.36° F over 32° to 122° F)<br>RH: ± 2.5% from 10 to 90% typical, max. ± 3.5% | Temp: ± 0.2° C over 0° to 50° C (± 0.36° F over 32° to 122° F)<br>RH: ± 2.5% from 10 to 90% typical, max. ± 3.5%<br>Analog: ± 1.544 mV plus 2% of reading (typical)   | Analog: ± 1.544 mV plus 2% of reading (typical)   | Temp: ± 0.2° C over 0° to 50° C (± 0.36° F over 32° to 122° F)<br>RH: ± 2.5% from 10 to 90% typical, max. ± 3.5%<br>Analog: ± 1.544 mV plus 2% of reading (typical) | Analog: ± 1.544 mV plus 2% of reading (typical)   | N/A                              |
| Resolution        | N/A                            | Temp: 0.02° C @ 25° C (0.04° F @ 77° F)                          | Temp: 0.02° C @ 25° C (0.04° F @ 77° F)<br>RH: 0.03%   | Temp: 0.02° C @ 25° C (0.04° F @ 77° F)<br>RH: 0.03%<br>Analog channel: 0.6 mV<br>Pulse Channel: 1 pulse  | Analog channel: 0.6mV   | Temp: 0.02° C @ 25° C (0.04° F @ 77° F)<br>RH: 0.03%<br>Analog channel: 0.6 mV  | Analog channel: 0.6mV<br>Pulse Channel: 1 pulse   | N/A                              |
| Response time     | N/A                            | Temp: 5 min. in air moving 1 m/s (3.3 ft/sec)                    | Temp: 5 min. in air moving 1 m/s (3.3 ft/sec)<br>RH: 10 min. in air moving 1 m/s (3.3 ft/sec)                    | Temp: 5 min. in air moving 1m/s (3.3 ft./sec)<br>RH: 10 min. in air moving 1 m/s (3.3ft/sec)  | Dependent on sensor   | Temp: 5 min. in air moving 1m/s (3.3 ft./sec)<br>RH: 10 min. in air moving 1 m/s (3.3ft/sec)  | Dependent on sensor   | N/A                              |

**A base system requires a HOBO Data Node, Receiver, and HOBOWare Pro software\***

### Common Specifications

Range: Approx. 100 m (300ft.) depending on obstructions or interference  
 Weight: 138 g (4.87 oz) with batteries  
 Size: 96.5 x 108 x 28 mm (3.8 x 4.25x 1.1 in)

Radio Power: 1.6 mW (2 dBm)  
 Wireless data Standard: IEEE 802.15.4 2.4 GHz band

For more detailed specifications, please refer to individual device manuals FCC Certified. Check [www.onsetcomp.com](http://www.onsetcomp.com) for the latest certification.



\* HOBOWare Pro is included with the cost of the ZW Receiver.  
 \*\*External T/RH cables included

## Ordering Information

**Data Loggers**

|                                       |              |
|---------------------------------------|--------------|
| Receiver & HOBOWare Pro Software      | ZW-RCVR-EU   |
| Router only                           | ZW-ROUTER-EU |
| Integrated Temperature                | ZW-001-EU    |
| Integrated Temperature/RH             | ZW-003-EU    |
| External- T/RH, (1) analog, (1) pulse | ZW-005-EU    |
| External- (4) analog                  | ZW-006-EU    |
| External- T/RH, (2) analog            | ZW-007-EU    |
| External- (2) analog, (2) pulse       | ZW-008-EU    |

**kWh\*\*\***

|                                   |                |
|-----------------------------------|----------------|
| WattNode Wye config 208/240       | T-WNB-3Y-208   |
| WattNode Wye 208/240 opt P3       | T-WNB-3Y-208P  |
| WattNode Delta/Wye config 208/240 | T-WNB-3D-240   |
| WattNode Delta/Wye config 480     | T-WNB-3D-480   |
| "B" Series Voltage Lead Set       | A-WNB-LEADSET  |
| Veris 1-phase, 300 Amp            | T-VER-8051-300 |
| Veris 3-phase, 800 Amp            | T-VER-8053-800 |

**Water Flow\*\*\***

|                  |             |
|------------------|-------------|
| Water Flow Meter | T-MINOL-130 |
|------------------|-------------|

**kW\*\***

|                        |                |
|------------------------|----------------|
| 3 Phase, 480V, 100 AMP | T-VER-8044-100 |
|------------------------|----------------|

**Gauge Pressure\*\*\*†**

|          |              |
|----------|--------------|
| 100 psig | T-ASH-G2-100 |
| 200 psig | T-ASH-G2-200 |
| 500 psig | T-ASH-G2-500 |

**Differential Air Pressure Transducer\*\*\*†**

|             |             |
|-------------|-------------|
| .01-10.0 WC | T-VER-PXU-L |
| .01-10.0 WC | T-VER-PXU-X |

**Humidity\*\*\*†**

|                    |               |
|--------------------|---------------|
| Duct-Mount RH/Temp | T-VAI-HMD-40Y |
|--------------------|---------------|

**DC Current\*\*\*†**

|                 |                 |
|-----------------|-----------------|
| 0-200 Amp       | T-VER-H970-200  |
| -200 to 200 Amp | T-VER-971BP-200 |

**Air Velocity Sensor\*\*\*†**

|             |                |
|-------------|----------------|
| 0.15-10 m/s | T-DCI-F900-L-P |
| 0.15-5 m/s  | T-DCI-F900-L-O |
| 0.15-10 m/s | T-DCI-F900-S-P |
| 0.15-5 m/s  | T-DCI-F900-S-O |

\* Requires HOBOWare Pro software, see page 52 for details. HOBOWare includes USB interface cable.

\*\* Requires input cable. See page 57 for compatibility.

\*\*\* Requires pulse input adapter. See page 57 for compatibility.

† Requires sensor power adapter (AC-SENS-1) See page 57 for compatibility.

Power adapters are supplied with ZW-RCVR, ZW-ROUTER, and all data node models.

**Compressed Air Flow Meter\*\***

|            |                |
|------------|----------------|
| 1-80 SCFM  | T-CDI-5200-10S |
| 3-350 SCFM | T-CDI-5400-20S |

**Volatile Organic Compound (VOC)\*\*\*†**

|                         |            |
|-------------------------|------------|
| 0-10, 0-100, 0-1000 ppm | T-ION-TVOC |
|-------------------------|------------|

**Temperature Sensors**

|                                       |          |
|---------------------------------------|----------|
| Air/Water/Soil Probe 0.3m (1ft)       | TMC1-HD  |
| Air/Water/Soil Probe 1.8m (6ft)       | TMC6-HD  |
| Air/Water/Soil Probe 6.1m (20ft)      | TMC20-HD |
| Air/Water/Soil Probe 15.2m (50ft)     | TMC50-HD |
| Stainless Steel Temp Probe 1.8m (6ft) | TMC6-HC  |
| Pipe Temp 1.8m (6ft)                  | TMC6-HE  |

**Split-core AC Current Sensors**

|               |       |
|---------------|-------|
| 0-20 Amps AC  | CTV-A |
| 0-50 Amps AC  | CTV-B |
| 0-100 Amps AC | CTV-C |
| 0-200 Amps AC | CTV-D |
| 0-600 Amps AC | CTV-E |

**CO<sub>2</sub>\*\***

|                                       |          |
|---------------------------------------|----------|
| Telaire CO <sub>2</sub> /Temp Monitor | TEL-7001 |
|---------------------------------------|----------|

**AC Voltage Transmitters\*\***

|                  |               |
|------------------|---------------|
| 0 - 150 Volts AC | T-CON-ACT-150 |
| 0 - 300 Volts AC | T-CON-ACT-300 |

**DC Voltage**

|                  |                  |
|------------------|------------------|
| 0 - 2.5 Volts DC | CABLE-2.5-STEREO |
| 0 - 5 Volts DC   | CABLE-ADAP5      |
| 0 - 10 Volts DC  | CABLE-ADAP10     |

**Milliamps**

|          |              |
|----------|--------------|
| 4 - 20mA | CABLE-4-20MA |
|----------|--------------|

**Software**

|                                       |            |
|---------------------------------------|------------|
| HOBOWare Pro Software (Windows®/MAC®) | BHW-PRO-CD |
|---------------------------------------|------------|

**Accessories**

|  |           |
|--|-----------|
| Sensor Power Adapter, 12 Volt DC @ 400mA | AC-SENS-1 |
|--|-----------|

**HOBOWare Software is available for download via the web. Visit [onsetcomp.com](http://onsetcomp.com) for details.**