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

Best suited for on-site facility monitoring applications, HOBO data nodes transmit high accuracy, real-time data from different points in the facility to a central receiver connected to a computer. This eliminates the need to manually offload data from individual data loggers, saving you time and money.

Accompanying HOBOware Pro software (included) can be configured to automatically send data from the wireless network to others via email or FTP, or save it to a network drive or the connected computer.

Measurements:

- Air Velocity
- AC Current
- AC Voltage
- Amp Hour
- $C0_2$
- Compressed Air Flow
- DC Current
- DC Voltage
- Differential Pressure
- Gauge Pressure
- Kilowatt Hours
- Kilowatts
- Power Factor
- Pulse Signals
- Relative humidity
- Temperature
- Volatile Organic Compound
- Volt-Amp Reactive
- Volt-Amp Reactive Hour
- Volt-Amps
- Water Flow
- Watt Hours
- Watts
- Volts
- Amps
- 0-10 vdc
- 4-20mA

Key Advantages:

- Provides real-time, centralized data collection within a facility
- Scales up to a network of 100 nodes sending data to a single receiver
- Creates self-healing network, using routers, to overcome obstructions in communication paths
- Provides one year battery life @ 15 min logging intervals
- Provides alarm notifications via email or text messages
- Delivers robust performance with onboard buffer memory and backup power option
- Features powerful software for organizing and viewing data as well as the wireless network

Centralized Data Collection

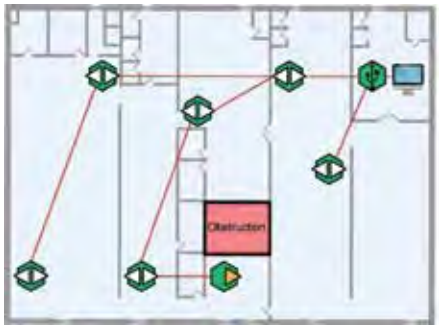
HOBO data nodes, routers, and receiver all work together as a system to provide reliable, accurate real-time information at a single location. Whether you are a warehouse manager looking to keep a close eye on temperature and humidity conditions, a facility manager looking at indoor air quality, or a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

Network Scalability

HOBO ZW wireless networks are scalable, enabling you to easily add or remove measurement points over time to your existing network. By using routers you can hop data across rooms, partitions and floor levels and redirect it to the receiver. This expands the network reach and improves data transfer reliability. The wireless data nodes can be set up in dual mode – data logging and data routing – thereby providing immense flexibility in scaling the network.

Self-Healing Technology

HOBO ZW wireless network uses self-healing technology. This ensures that, despite obstructions, data is automatically routed to the receiver through alternate paths without any manual intervention.



Scenario 1.
Typical data flow back to the receiver

Scenario 2.
Self healing network automatically compensates for new obstruction

HOBO ZW Series System Components		
Data Node	Router	Receiver
• Battery powered wireless data node records data measured by internal and external sensors • Can function as dual purpose Data/Router node when AC powered	• Provides connectivity to other nodes and redirects recorded data back to the receiver • Expands the reach of the wireless network • Always AC powered with battery backup	• Central hub to collect and store data from all nodes • Bridge between network and software • Stores network information and sends commands to nodes • AC powered or USB with battery backup

HOBOnode Manager (part of HOBOware Pro)

Powerful Network Management Software

HOBOnode™ Manager, a component of HOBOware Pro, lets you view real-time energy and environmental data, receive alarm notifications, and manage and view your entire HOBO ZW wireless sensor network. It offers a range of convenient data access options and one-click export of your data to Microsoft Excel and other programs.

Key Features

- Allows sharing of real-time data within a Local Area Network
- Provides automated data delivery to remote locations through FTP and email
- Network signal strength indicator
- Visualizes the wireless network by using site map, node labels and groups

Alarm Capabilities:

- Sends a text message to your phone and email when conditions exceed set threshold
- Notifies you when a data node is not connected to your network
- Uses visual indicator on computer screen to notify that a sensor alarm has tripped

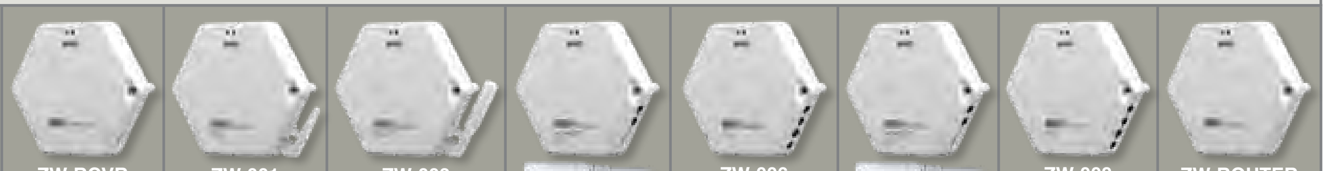
Convenient Data Access

HOBOnode Manager's "Data Delivery" feature makes it easy to automatically send the data, at regular intervals, to remote locations through FTP and Email or to a local network folder. The "HOBOnode Viewer" feature enables to view the data and sensor network status in a browser on any machine within the Local Area Network.

Network Map Feature

HOBOnode Manager's "Network Map" feature provides an at-a-glance view of your network so you can easily locate your wireless nodes within a building. This feature overlays nodes, along with user specified labels, on top of a site map uploaded by user.

Specifications



	ZW-RCVR (Receiver)	ZW-001	ZW-003	ZW-005**	ZW-006	ZW-007**	ZW-008	ZW-ROUTER (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 (included)	AC Power adapter, Battery Backup, USB power	Data Mode: Battery Powered; 1 yr battery life (@15 min logging interval) Data/Router Mode: AC Power Adapter, Battery Backup	Data Mode: Battery Powered; 1 yr battery life (@15 min logging interval) Data/Router Mode: AC Power Adapter, Battery Backup	Data Mode: Battery Powered; 1 yr battery life (@15 min logging interval) Data/Router Mode: AC Power Adapter, Battery Backup	Data Mode: Battery Powered; 1 yr battery life (@15 min logging interval) Data/Router Mode: AC Power Adapter, Battery Backup	Data Mode: Battery Powered; 1 yr battery life (@15 min logging interval) Data/Router Mode: AC Power Adapter, Battery Backup	Data Mode: Battery Powered; 1 yr battery life (@15 min logging interval) Data/Router Mode: 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) RH: 5 to 95% RH	Temp: -40° to 70° C (-40° to 158° F) RH: 5 to 95% RH Analog channels: 0 to 2.5 Vdc; 0 to 5 Vdc (w/CABLE-ADAP5); 0 to 10 Vdc (w/ CABLE-ADAP10) 4-20 mA 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) RH: 5 to 95% RH 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). 4-20 mA Pulse channel: 0 to 65,535 pulses per logging interval	N/A
Accuracy	N/A	Temp: ± 0.21° C from 0° to 50° C (± 0.38° F from 32° C to 122° F)	Temp: ± 0.21° C from 0° to 50° C (± 0.38° F from 32° to 122° F) RH: ± 2.5% from 10 to 90% typical, max. ± 3.5%	Temp: ± 0.21° C from 0° to 50° C (± 0.38° F from 32° to 122° F) RH: ± 2.5% from 10 to 90% typical, max. ± 3.5% Analog: ±1.544 mV plus 2 % of reading (typical)	Analog: ± 1.544 mV plus 2% of reading (typical)	Temp: ± 0.21° C from 0° to 50° C (± 0.36° F from 32° to 122° F) RH: ± 2.5% from 10 to 90% typical, max. ± 3.5% 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) RH: 0.03%	Temp: 0.02° C @ 25° C (0.04° F @77° F) RH: 0.03% Analog channel: 0.6 mV Pulse Channel: 1 pulse	Analog channel: 0.6mV	Temp: 0.02° C @ 25° C (0.04° F @77° F) RH: 0.03% Analog channel: 0.6 mV	Analog channel: 0.6mV 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) 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) 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) 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 for the latest certification. CE

* 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
Router only	ZW-ROUTER
Integrated Temperature	ZW-001
Integrated Temperature/RH	ZW-003
External- T/RH, (1) analog, (1) pulse	ZW-005
External- (4) analog	ZW-006
External- T/RH, (2) analog	ZW-007
External- (2) analog, (2) pulse	ZW-008

E50B2 Power & Energy Meter T-VER-E50B2
(requires 1 to 3 Pulse Input Adapters)
Measurements: AC Current, AC Voltage, Amp Hour, Amps, Kilowatt Hours, Kilowatts, Power Factor, Volt-Amp Reactive, Volt-Amp Reactive Hour, Volt-Amps, Volts, Watt Hours, Watts

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

kW**

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

Water Flow***

Water Flow Meter	T-MINOL-130

Gauge Pressure**†

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

Differential Air Pressure Transducer**†

0.01-10.0 WC	T-VER-PXU-L
0.01-10.0 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

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_2**

Telaire CO_2/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	Included

Accessories

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

* *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.

HOBOware Software is available for download via the web. Visit onsetcomp.com for details.