

## PRODUCT CATALOG



Data Loggers • Sensors • Software • Accessories

Hochwertige Messtechnik und Beratung aus einer Hand

# WELCOME!

Thank you for your interest in Onset – the world leader in data loggers.

At Onset, we know how important your data is to you. Our HOBO data loggers and weather stations are designed from the ground up with quality and reliability in mind.

In this catalog, you will find a wide range of data logging solutions, including stand-alone USB data loggers, web-based data logging systems, and wireless sensor networks.

For the very latest product updates and detailed product specifications, please visit us on the web at [onsetcomp.com](http://onsetcomp.com).



**NEW!** The HOBO UX120-006M Analog Logger is a high-performance, LCD display data logger for building performance monitoring applications.

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The award-winning HOBO UX90 Series is the industry's lowest-cost, most comprehensive family of "time-of-use" data loggers.

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Web-based HOBO U30 systems deliver accurate energy and environmental data right to your desktop.

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The HOBO U26 Dissolved Oxygen Logger is a highly precise, low-cost data logger for measuring concentrations of oxygen in lakes, streams, rivers, estuaries, and coastal waters.

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Visit us at [onsetcomp.com](http://onsetcomp.com) to browse our full line of HOBO data loggers, shop our online store, and download material from our Data Logger Resources Library.



Onset white papers feature valuable tips and information on a variety of monitoring topics. Go to [onsetcomp.com/learning](http://onsetcomp.com/learning) to access our full library.



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# HOBO UX100 Loggers

## Next-generation family of temperature and humidity data loggers

The HOBO UX100 Series is Onset's next-generation family of data loggers for tracking temperature and relative humidity in indoor environments.

HOBO UX100 Series offer a dramatic price/performance advantage over competitive products by delivering higher accuracy, larger measurement capacity, and more LCD display features to make environmental data collection faster and easier than ever. The loggers provide a variety of features to reduce deployment time, and offer new logging modes for recording and displaying more detailed data without extensive post-processing or memory use.

### Supported Measurements:

Temperature, Relative Humidity, Dew Point

### Key Advantages:

- Easy-to-view LCD display
- Large memory capacity
- Flexible mounting options
- Visual high & low alarm thresholds
- New Burst and Statistics logging modes
- User-replaceable RH sensors
- Temp, humidity, and thermocouple models available

### Minimum System Requirements:



Software  
See pg 31



USB cable\*

\*USB cable included with software



# HOBO UX100 Loggers

## Common Features of HOBO UX100 Series Loggers



► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	UX100-001 (Temp)	UX100-003 (Temp/RH)	UX100-011 (Temp/RH)	UX100-023 (Ext Temp/RH)
<b>Memory</b>	84,650 measurements			
<b>Sampling Rate</b>	1 second to 18 hours, user-selectable			
<b>Battery Life</b>	1 year typical with logging rate of 1 minute and sampling interval of 15 seconds or greater, user-replaceable, CR2032			
<b>Dimensions</b>	3.66 x 5.94 x 1.52 cm (1.44 x 2.34 x 0.6 in.)		3.66 x 8.48 x 1.52 cm (1.44 x 3.34 x 0.6 in.)	
<b>Temperature</b>				
<b>Range</b>	-20° to 70°C (-4° to 158°F)			
<b>Accuracy</b>	±0.21°C from 0° to 50°C (±0.38°F from 32° to 122°F)			
<b>Resolution</b>	0.024°C at 25°C (0.04°F at 77°F)			
<b>Response Time</b> (airflow of 1 m/s (2.2mph))	8 minutes to 90%	4 minutes to 90%		6 minutes to 90%
<b>Relative Humidity</b>				
<b>Range</b>	n/a	15% to 95%	1% to 95%	
<b>Accuracy</b>	n/a	±3.5% from 25% to 85%	±2.5% from 10% to 90%	
<b>Resolution</b>	n/a	0.07% at 25°C (77°F)	0.05% at 25°C (77°F)	
<b>Response Time</b> (airflow of 1 m/s (2.2mph))	n/a	43 seconds to 90%	11 seconds to 90%	5 minutes to 90%
<b>CE compliant</b>	Yes			

Part number	UX100-014M (Thermocouple)		
<b>Memory</b>	208,076 measurements		
<b>Sampling Rate</b>	1 second to 18 hours, user-selectable		
<b>Battery Life</b>	1 year, typical with logging rate of 1 minute and sampling interval of 15 seconds or greater, user-replaceable, CR2032		
<b>Dimensions</b>	3.66 x 8.48 x 1.52 cm (1.44 x 3.34 x 0.6 in.)		
<b>Operating Range</b>	Logging: -20° to 70°C (-4° to 158°F); 0 to 95% RH (non-condensing)		
<b>Thermocouple</b> (probes sold separately)	<b>Range</b>	<b>Accuracy</b>	<b>Resolution</b>
<b>Type J</b>	-210° to 760°C (-346° to 1,400°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.03°C (0.06°F)
<b>Type K</b>	-260° to 1,370°C (-436° to 2,498°F)	±0.7°C (±1.26°F) ± thermocouple probe accuracy	0.04°C (0.07°F)
<b>Type T</b>	-260° to 400°C (-436° to 752°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.02°C (0.03°F)
<b>Type E</b>	-260° to 950°C (-436° to 1,742°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.03°C at (0.05°F)
<b>Type R</b>	-50° to 1,550°C (-58° to 2,822°F)	±2.2°C (±3.96°F) ± thermocouple probe accuracy	0.08°C (0.15°F)
<b>Type S</b>	-50° to 1,720°C (-58° to 3,128°F)	±2.2°C (±3.96°F) ± thermocouple probe accuracy	0.08°C (0.15°F)
<b>Type B</b>	550° to 1,820°C (1,022° to 3,308°F)	±2.5°C (±4.5°F) ± thermocouple probe accuracy	0.1°C (0.18°F)
<b>Type N</b>	-260° to 1,300°C (-436° to 2,372°F)	±1.0°C (±1.8°F) ± thermocouple probe accuracy	0.06°C (0.11°F)

# HOBO UX90 Loggers

## Next-generation time-of-use loggers for fast, reliable monitoring

The award-winning HOBO UX90 Series is the industry's lowest-cost, most comprehensive family of "time-of-use" data loggers. The new toolbox suite includes LCD-display data loggers for measuring motor on/off status, electronic pulses, state changes, and occupancy and light-use patterns.

Leveraging patent-pending technology, HOBO UX90 data loggers streamline energy audits and make field deployment fast and reliable.

Accompanying HOBOWare software also reduces deployment time. Time-saving features allow HOBO UX90 users to batch-configure and readout hundreds of loggers in a fraction of the time. Additionally, the software features a Bulk Export Tool that allows users to export data files to text format for use in spreadsheets and other programs.



**Supported Measurements:** State, Pulse, Event, Runtime, Light On/Off, Motor On/Off, Occupancy/Light

### Key Advantages:

- LCD displays Time On or % On, providing instant feedback
- Auto-calibration & signal strength indicator ensure proper deployment
- 84k or 346k measurement capacity enables longer deployments with fewer site visits
- Rare-earth magnets, 3M Command™ Strips, or mounting tabs for reliable mounting
- Flexible logger Start and Stop options
- HOBOWare Pro's time-saving features allow for easy setup of hundreds of loggers



### Minimum System Requirements:



Software  
See pg 31



USB cable\*

\*USB cable included with software

For the most accurate readings, use of Light Pipe UX90-LIGHT-PIPE-1 is recommended to eliminate the effects of ambient light. See page 38 for more details.

# HOBO UX90 Loggers

## Common Features of HOBO UX90 Series Loggers



► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	UX90-001 (State)	UX90-002 (Light On/Off)	UX90-004 (Motor On/Off)	UX90-005 (Occupancy)	UX90-006 (Occupancy)
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Memory	84,000 measurements				
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Part number	UX90-001M (State)	UX90-002M (Light On/Off)	UX90-004M (Motor On/Off)	UX90-005M (Occupancy)	UX90-006M (Occupancy)
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Memory	346,000 measurements				
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INTERNAL SENSOR					
Maximum state, event, runtime frequency	1 Hz	--	--	--	--
Light threshold	--	65 lux	--	65 lux	
Light type	--	LED, CFL, fluorescent, HID, incandescent, natural	--	LED, CFL, fluorescent, HID, incandescent, natural	
AC magnetic field threshold	--	--	> 40 mGauss at 60 Hz	--	--
Maximum sensor detection range	--	--	--	5 m (15.4 ft)	12 m (39.4 ft)
EXTERNAL INPUT					
External contact input	solid state closure or logic driven voltage output	--	solid state closure	--	--
Maximum state, event, runtime frequency	1 Hz	--	1 Hz	--	--
Maximum Pulse Frequency	50 Hz	--	--	--	--
Battery life	1 year typical, user replaceable, CR2032				
Operating range	-20° to 70°C (-4° to 158°F); 0-95% RH (non-condensing)				
Dimensions	3.66 x 5.94 x 1.52 cm (1.44 x 2.34 x 0.6 in)	3.66 x 8.48 x 1.52 cm (1.44 x 3.34 x 0.6 in)	3.66 x 8.48 x 2.36 cm (1.44 x 3.34 x 0.93 in)	3.66 x 8.48 x 2.87 cm (1.44 x 3.34 x 1.13 in)	
CE compliant	Yes				

# NEW! HOBO UX120 4-Channel Analog Logger

## Flexible, Accurate, 4-channel Analog Logger

The HOBO UX120-006M Analog Logger is a high-performance, LCD display data logger for building performance monitoring applications.

As Onset's highest-accuracy data logger, it provides twice the accuracy of previous models, a deployment-friendly LCD, and flexible support up to four external sensors for measuring temperature, current, CO2, voltage, and more.

**Supported Measurements:** Temperature, 4-20mA, AC Current, AC Voltage, Air Velocity, Carbon Dioxide, Compressed Air Flow, DC Current, DC Voltage, Gauge Pressure, Kilowatts, Volatile Organic Compound

### Key Advantages:

- Twice the accuracy over previous models
- 16-bit resolution
- Flexible support for a wide range of external sensors
- LCD confirms logger operation and displays near real-time measurement data
- Provides minimum, maximum, average, and standard deviation logging options
- On-screen alarms notify you when a sensor reading exceeds set thresholds
- Stores 1.9 million measurements for longer deployments between offloads

► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)



### Minimum System Requirements:



Software  
See pg 31



USB cable\*

Part number	UX120-006M
Memory	1.9 Million
Logging Rate	1 second to 18 hours, user selectable
Logging Modes	Normal, Burst, Statistics
Memory Modes	Wrap when full or stop when full
Time Accuracy	±1 minute per month at 25°C (77°F)
Battery Life	1 year typical with logging rate of 1 minute and sampling interval of 15 seconds or greater, user replaceable, 2 AAA
Dimensions	10.8 x 5.41 x 2.54 cm (4.25 x 2.13 x 1 in.)
Operating Range	Logging: -20° to 70°C (-4° to 158°F); 0 to 95% RH (non-condensing)
Accuracy	±0.1 mV ±0.1% of reading
CE Compliant	Yes

\*USB cable included with software



# HOBO UX120 4-Channel Thermocouple Logger

Log type J, K, T, E, R, S, B, or N thermocouples

The HOBO UX120 Thermocouple Logger is a four-channel LCD data logger for measuring and recording temperature in a range of monitoring applications. The logger makes it easy and convenient to record temperatures over a broad range (-260 to 1820° C) and can accept up to four J, K, T, E, R, S, B, or N type probes.

In addition to accepting four thermocouple probes, the logger features an internal temperature sensor for logging ambient temperatures, further extending the application possibilities.



**Supported Measurements:** Temperature

## Key Advantages:

- Easy-to-view LCD display confirms logger operation and battery status
- Near real-time readout of current temperatures as well as minimum, maximum, average, and standard deviation statistics
- On-screen alarms notify you if temperatures exceed high or low thresholds
- Large memory capacity capable of storing 1.6 million measurements
- Start, stop, and restart push buttons
- User-upgradeable firmware

## Minimum System Requirements:



Software  
See pg 31



USB cable\*

**Note:** for a single thermocouple input logger, please see pages 1-2

► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	UX120-014M		
<b>Internal Temperature</b>			
<b>Range</b>	-20° to 70°C (-4° to 158°F)		
<b>Accuracy</b>	±0.21°C from 0° to 50°C (±0.38°F from 32° to 122°F)		
<b>Resolution</b>	0.024°C at 25°C (0.04°F at 77°F)		
<b>Drift</b>	<0.1°C (0.18°F) per year		
<b>Logger</b>			
<b>Logging Rate</b>	1 second to 18 hours		
<b>Logging Modes</b>	Normal, Burst, Statistics		
<b>Memory Modes</b>	Wrap when full or stop when full		
<b>Time Accuracy</b>	±1 minute per month at 25°C (77°F)		
<b>Battery Life</b>	1 year typical with logging rate of 1 minute and sampling interval of 15 seconds or greater, user replaceable, 2 AAA		
<b>Dimensions</b>	10.8 x 5.41 x 2.54 cm (4.25 x 2.13 x 1 in.)		
<b>Operating Range</b>	Logging: -20° to 70°C (-4° to 158°F); 0 to 95% RH (non-condensing)		
<b>CE Compliant</b>	Yes		
<b>Thermocouple</b>			
(probes sold separately)	<b>Range</b>	<b>Accuracy</b>	<b>Resolution</b>
<b>Type J</b>	-210° to 760°C (-346° to 1,400°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.03°C (0.06°F)
<b>Type K</b>	-260° to 1,370°C (-436° to 2,498°F)	±0.7°C (±1.26°F) ± thermocouple probe accuracy	0.04°C (0.07°F)
<b>Type T</b>	-260° to 400°C (-436° to 752°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.02°C (0.03°F)
<b>Type E</b>	-260° to 950°C (-436° to 1,742°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.03°C at (0.05°F)
<b>Type R</b>	-50° to 1,550°C (-58° to 2,822°F)	±2.2°C (±3.96°F) ± thermocouple probe accuracy	0.08°C (0.15°F)
<b>Type S</b>	-50° to 1,720°C (-58° to 3,128°F)	±2.2°C (±3.96°F) ± thermocouple probe accuracy	0.08°C (0.15°F)
<b>Type B</b>	+60° to 1,820°C (1,022° to 3,308°F)	±2.5°C (±4.5°F) ± thermocouple probe accuracy	0.1°C (0.18°F)
<b>Type N</b>	-260° to 1,300°C (-436° to 2,372°F)	±1.0°C (±1.8°F) ± thermocouple probe accuracy	0.06°C (0.11°F)

\*USB cable included with software

# HOBO UX120 4-Channel Pulse Logger

## Log pulse signals, events, state changes, and runtimes

The HOBO UX120 4-Channel Pulse data logger is a highly versatile, 4-channel energy data logger that combines the functionality of four separate energy loggers into one compact unit. It enables energy management professionals – from energy auditors to building commissioners – to easily track building energy consumption, equipment runtimes, and water and gas flow rates.



**Supported Measurements:** Pulse Signals, Event, Runtime, State, AC Current, AC Voltage, Amp Hour, Kilowatt Hours, Kilowatts, Motor On/Off, Power Factor, Volt-Amps, Watt Hours, Watts, Volt-Amp Reactive, Volt-Amp Reactive Hour (sensors sold separately)

### Key Advantages:

- Simultaneously measures and records pulse signals, events, state changes, and runtimes
- Stores over 4 million measurements, enabling longer deployments with fewer site visits
- Streamlines deployment via range of start/stop options, logger status LEDs, and high-speed USB 2.0 data offload
- Works with Onset's E50B2 Power & Energy Meter to measure Power Factor, Reactive Power, Watt Hours, and more

### Minimum System Requirements:



Software  
See pg 31



USB cable\*



Sensor  
See pg 33

► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	UX120-017	UX120-017M
Memory	520,000 measurements	4,000,000 measurements
Sampling rate	1 second to 18 hours	
Battery life	1 year typical, user replaceable, 2 AA	
External contact Input	Electronic solid state switch closure or logic driven digital signals to 24V	
Max pulse frequency	120 Hz	
Max state, event, runtime frequency	1 Hz	
Resolution	Pulse: 1 pulse, Runtime: 1 second, State and Event: 1 state or event	
Bits	4 - 32 bits depending on pulse rate and logging interval	
Lockout time	0 to 1 second in 100 ms steps	
Operating temperature range	Logging: -40° to 70°C (-40° to 158°F); 0 to 95% RH (non-condensing)	
Dimensions	11.4 x 6.3 x 3.3 cm (4.5 x 2.5 x 1.3 inches)	
CE compliant	Yes	

\*USB cable included with software

# HOBO U12 4-Channel Loggers

## Multi-channel energy & environmental monitoring

HOBO U12 data loggers provide flexibility for monitoring up to 4 channels of energy and environmental data with a single, compact logger. They provide 12-bit resolution measurements for detecting greater variability in recorded data, direct USB connectivity for convenient, fast data offload, and a 43K measurement capacity.

**Supported Measurements:** Temperature, Relative Humidity, Dew Point, 4-20mA, AC Current, AC Voltage, Air Velocity, Carbon Dioxide, Compressed Air Flow, DC Current, DC Voltage, Gauge Pressure, Kilowatts, Light Intensity, Volatile Organic Compound (some sensors sold separately)



### Key Advantages:

- Records up to 4 channels
- Your choice of 2 models, with flexible measurement options
- Programmable as well as push-button start
- Compatible with a broad range of external sensors

### Minimum System Requirements:



Software  
See pg 31



USB cable\*

► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	U12-012 (Temp/RH/Light/Ext)	U12-013 (Temp/RH/2 Ext)
<b>Memory</b>	43,000 measurements	
<b>Sampling rate</b>	1 second to 18 hours, user-selectable	
<b>Battery life</b>	1 year typical, user-replaceable, CR2032	
<b>Temperature</b>		
<b>Max range</b>	-20° to 70°C (-4° to 158°F)	
<b>Accuracy</b>	± 0.35°C from 0° to 50°C (± 0.63°F from 32° to 122°F)	
<b>Resolution (12-bit)</b>	0.03°C @ 25°C (0.05°F @ 77°F)	
<b>Relative Humidity</b>		
<b>Measurement range</b>	5% to 95% RH (non-condensing)	
<b>Accuracy</b>	± 2.5% typical, 3.5% maximum, from 10 to 90% RH	
<b>Resolution (10-bit)</b>	0.03% RH	
<b>Light Intensity</b>		
<b>Range</b>	Designed for general purpose indoor measurement of relative light levels 1 to 3000 footcandles (lumens/ft <sup>2</sup> ) typical 0-32,300 lumens/m <sup>2</sup>	
<b>External Input</b>		
<b>Range</b>	0 to 2.5 VDC	
<b>Accuracy</b>	± 2 mV, ± 2.5% of absolute reading	
<b>Resolution</b>	0.6 mV	
<b>CE compliant</b>	Yes	

\*USB cable included with software

For stand-alone data logging applications in harsh indoor environments, see the 4-channel HOBO U12 Industrial data logger (U12-008) at [onsetcomp.com](http://onsetcomp.com)

# HOBO U12 Stainless Temp Loggers

## High-accuracy temperature monitoring for challenging process conditions

HOBO U12 Stainless Temperature data loggers are ideal for food, pharmaceutical, autoclave, and other applications where high-accuracy temperature data is critical. They can withstand process conditions from pasteurization to flash freezing and washdown.



*HOBO U12 Stainless Temperature Logger*

### Supported Measurements: Temperature



*HOBO U12 Stainless Temperature Logger with 5-inch Probe*

### Key Advantages:

- High-accuracy, extended temperature range
- Suitable for high pressure applications to 2200 psi
- Fast readout via direct USB interface

### Minimum System Requirements:



Software  
See pg 31



USB cable\*

► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	U12-015	U12-015-02
Memory	43,000 measurements	
Battery life	3 year typical, factory replaceable	
Response time	10 minutes (to 90% in airflow of 1 m/s) 3.5 minutes (to 90% in water)	2.25 minutes (to 90% in airflow of 1 m/s) 20 seconds (to 90% in water)
Operating range	Logging: -40° to 125°C (-40° to 257°F) Launch/readout: 0° to 50°C (32° to 122°F), per USB specification	
Range	-40° to 125°C (-40° to 257°F)	
Accuracy	± 0.25°C from 0° to 50°C (± 0.45°F from 32° to 122°F)	Accuracy: ± 0.25°C from 0° to 50°C (± 0.45°F from 32° to 122°F)
Resolution	0.03°C at 25°C (0.05°F at 77°F)	0.03°C at 25°C (0.05°F at 77°F)
Dimensions	17.5 x 101.6 mm (0.69 x 4.00 in)	Logger: 17.5 x 101.6 mm (0.69 x 4.00 in) Probe: 4 x 124 mm (0.16 x 4.90 in)
CE compliant	Yes	

\*USB cable included with software

# HOBO U14 Loggers

Display, record, and get notified of temperature and humidity conditions

HOBO U14 data loggers display, record, and provide alarm notifications of temperature and humidity conditions. Receive out-of-range alarm notifications with the optional Auto Dialer, or remote Audible Alarm. These loggers are well-suited for use in manufacturing, processing, and storage environments where reliable monitoring and documentation of specific temperature and relative humidity conditions are critical.

## Supported Measurements:

Temperature, Relative Humidity, Dew Point

## Key Advantages:

- Real-time display of temperature and relative humidity
- Alarm display and output ensure timely notification of out-of-range conditions
- Optional Remote Alarm and Autodialer
- Choice of two models: Internal Temp/Humidity or External Temp/Humidity sensors
- Optional protective case for harsh or outdoor environments
- Fast data offload via USB



## Minimum System Requirements:



Software  
See pg 31



Sensor\*  
See pg 33



USB cable<sup>1</sup>

► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	U14-001 (Temp)	U14-002 (Ext Temp/RH)*
<b>Memory</b>	43,000 measurements	
<b>Sample rate</b>	1 second to 18 hours, recording times up to 1 year	
<b>Battery life</b>	1 year typical, user-replaceable, 3 AAA alkaline	
<b>Range</b>	Temp -20°C to 50°C (-4°F to 122°F)	
<b>Accuracy</b>	Temp ± 0.2°C from 0° to 50°C (± 0.36°F from 32° to 122°F) - RH ± 2.5% from 10 to 90%	
<b>Resolution</b>	0.03° at 25°C (0.05° at 77°F)	
<b>Data channels</b>	0	2
<b>Measurement range</b>	5% to 95% RH (non-condensing)	
<b>Accuracy</b>	± 3.5% RH from 25% to 95% over range of 5° to 55°C (41° to 131°F)	
<b>Response time</b>	Internal temp sensor • 15 min (to 90% in airflow of 1 m/sec)	External temp Sensor • 5 min in airflow of 1 m/sec
	Internal RH sensor • 2 min (to 90% in airflow of 1 m/sec)	External RH Sensor • 5 min in airflow of 1 m/sec with protective cap
<b>Dimensions</b>	125 x 92 x 31 mm (4.9 x 3.6 x 1.2 in)	
<b>CE compliant</b>		Yes

\*Sensor required for U14-002 only

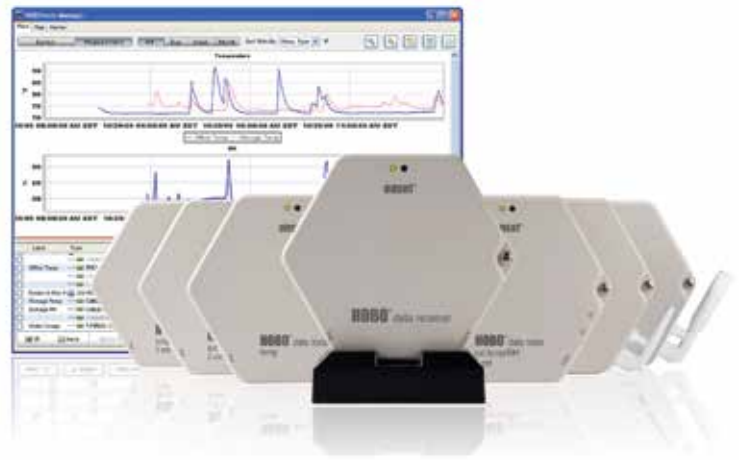
<sup>1</sup>USB cable included with software

# HOBO ZW Series Wireless Sensors

Monitor and transmit real-time building performance data... wirelessly!

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

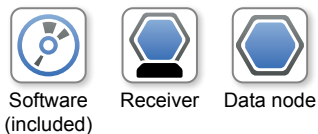
**Supported Measurements:** Air Velocity, AC Current, AC Voltage, Amp Hour, CO<sub>2</sub>, Compressed Air Flow, DC Current, DC Voltage, Differential Pressure, Gauge Pressure, Kilowatt Hours, Kilowatts, Power Factor, Pulse Signals, Temperature, Relative Humidity, Dew Point, Volatile Organic Compound, 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-minute logging intervals
- Provides alarm notifications via email or text messages
- Features powerful software for organizing and viewing data as well as the wireless network

## Minimum System Requirements:



Software (included) Receiver Data node

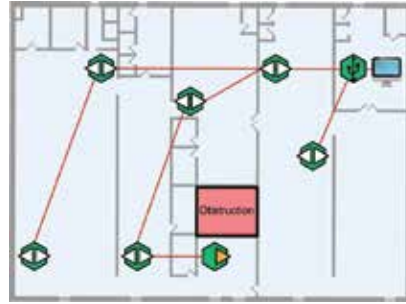
► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	ZW-RCVR (Receiver)	ZW-001 (Data node)	ZW-003 (Data node)
<b>Buffer memory</b>	up to 95k measurements	5k measurements	4k measurements
<b>Measurements</b>	N/A	Temp	Temp/RH
<b>Probe size (diameter)</b>	N/A	N/A	N/A
<b>Sample rate</b>	N/A	1 min to 18 hrs	1 min to 18 hrs
<b>Transmission rate</b>	N/A	2 min and greater	2 min and greater
<b>Power options (included)</b>	AC Power adapter, Battery Backup, USB power	AC Power Adapter, Battery Backup	AC Power Adapter, Battery Backup
<b>Measurement range</b>	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
<b>Accuracy</b>	N/A	Temp: ± 0.21°C from 0° to 50°C (± 0.38°F from 32° to 122°F)	Temp: ± 0.21°C from 0° to 50°C (± 0.38°F from 32° to 122°F) RH: ± 2.5%
<b>Resolution</b>	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%
<b>Range</b>	Approx. 100 m (300 ft.) depending on obstructions or interference		
<b>Dimensions</b>	96.5 x 108 x 28 mm (3.8 x 4.25x 1.1 in)		
<b>CE compliant</b>	Yes		

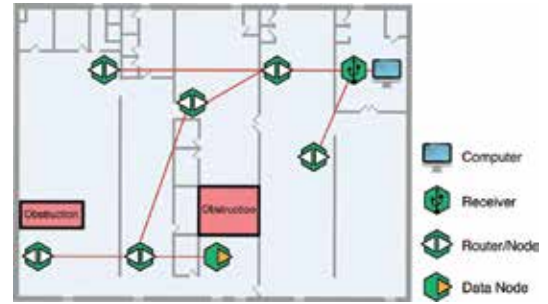
# HOBO ZW Series Wireless Sensors

## 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

## 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 to your existing network over time. 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.

ZW-005 (Data node)	ZW-006 (Data node)	ZW-007 (Data node)	ZW-008 (Data node)	ZW-ROUTER
3k measurements	3k measurements	3k measurements	3k measurements	N/A
Ext T/RH, 1 analog port 1 pulse input port	4 external analog ports	Ext T/RH, 2 analog ports	2 analog ports 2 pulse input ports	N/A
1cm (0.38 in)	N/A	1cm (0.38 in)	N/A	N/A
1 min to 18 hrs	1 min to 18 hrs	1 min to 18 hrs	1 min to 18 hrs	N/A
2 min and greater	N/A	2 min and greater	2 min and greater	N/A
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
Temp: -40° to 70°C (-40° to 158°F) RH: 5 to 95% RH Analog: 0 to 2.5 VDC Pulse: 0 to 65,535 pulses per logging interval	Analog channels: 0 to 2.5 VDC; 0 to 5 VDC	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	N/A
Temp: ± 0.21°C from 0° to 50° C (± 0.38°F from 32° to 122°F) RH: ± 2.5% Analog: ± 1.544 mV + 2%	Analog: ±1.544 mV plus 2% of reading	Temp: ± 0.21°C from 0° to 50°C (± 0.38°F from 32° to 122°F) RH: ± 2.5% Analog: ± 1.544 mV + 2%	Analog: ± 1.544 mV plus 2% of reading	N/A
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: 0.6 mV	Temp: 0.02°C @ 25°C (0.04°F @77°F) RH: 0.03% Analog channel: 0.6 mV	Analog channel: 0.6 mV Pulse Channel: 1 pulse	N/A

# HOBO U30 Remote Monitoring Systems

## Real-time access to data from any web browser

HOBO U30 Remote Monitoring Systems enable real-time, remote access to your data via cellular, Wi-Fi, or Ethernet communications. They can be configured with any combination of external Smart Sensors, and have been designed with an industrial-grade, tamperproof enclosure.

### Supported Measurements:

**Indoor Environmental:** Temperature, Relative Humidity, Dew Point, CO<sub>2</sub>, Air Velocity, VOC

**Energy/Power:** 4-20mA, AC Current, AC Voltage, Amp Hour, Amps, Compressed Air Flow, DC Current, DC Voltage, Differential, Pressure, Gauge Pressure, kW, kWh, Power Factor, Pulse Input, Volt-Amp Reactive, Volt-Amp Reactive Hour, Volt-Amps, Volts, Water Flow, Watt Hours, Watts



### Key Advantages:

- Web-based energy and environmental monitoring
- Electronics are housed in an industrial-grade, tamperproof enclosure
- Setup is quick and easy with plug-and-play sensors
- Measures a wide range of energy and environmental parameters
- GSM Cellular, Wi-Fi, Ethernet, direct USB options available
- Optional analog inputs with configurable sensor power

### Minimum System Requirements:



Software  
See pg 31



Data plan\*



Power source<sup>1</sup>



Sensor  
See pg 33

► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

Part number	U30-GSM	U30-WIF	U30-ETH
<b>GSM Wireless Comm (U30-GSM)</b>	Quad-Band GSM/GPRS 850/900/1800/1900 MHz		
<b>Wi-Fi Wireless Comm (U30-WIF)</b>	2.412 - 2.484 GHz IEEE 802.11 b/g		
<b>Ethernet (U30-ETH)</b>	10Base-T or 100Base-TX (using external RJ45 jack) 256-bit AES Rijndael encryption		
<b>Alarm Relay</b>	Can be activated, deactivated or pulsed on user-defined sensor alarms.		
<b>Alarm Notification Latency</b>	Logging interval plus 2 to 4 minutes (typical)		
<b>Smart-Sensor Inputs</b>	5 or 10		
<b>Data Channels</b>	Maximum of 15 (some sensors use more than one data channel)		
<b>Normal Operating Range</b>	-20 to 40°C (-4 to 140°F)		
<b>Extended Operating Range</b>	-40 to 60°C (-40 to 140°F) see battery life		
<b>Local Communication</b>	USB		
<b>Data Storage Memory</b>	512K bytes local storage in non-volatile flash memory		
<b>Logging Interval</b>	1 minute to 18 hours, user-specified		
<b>Station-to-Internet Upload Interval</b>	10 minutes minimum, user-specified (depends on HOBOLink data service plan)		
<b>Power</b>	An Onset solar panel (1.2w, 3w, 6w) or AC adapter is required		
<b>Battery Life</b>	3-5 years, 4 volt 10 AHr rechargeable sealed lead acid		
<b>Dimensions</b>	17.8 x 11.7 x 19.3 cm (7.0 x 4.6 x 7.6 in)		
<b>CE Compliant</b>	Yes		

\*A complete U30 remote monitoring system requires a data plan (U30-NRC is data logger only and does not require a data plan).

<sup>1</sup>AC power adapter or solar panel required. See page 38. For more details, please visit [onsetcomp.com](http://onsetcomp.com).



# HOBO Energy Logger

## Multi-channel energy data logging system

The HOBO Energy Logger multi-channel data logger is a modular, reconfigurable data logging system for energy and industrial monitoring applications.

The 15-channel system enables energy and facility management professionals to quickly and easily solve a broad range of monitoring applications without having to purchase a toolbox full of data loggers.



**Supported Measurements:** Temperature, Relative Humidity, Dew Point, 4-20mA, AC Current, AC Voltage, Air Velocity, Amp Hour, Carbon Dioxide, Compressed Air Flow, DC Current, DC Voltage, Differential Pressure, Gauge Pressure, Kilowatt Hours, Kilowatts, Power Factor, Pulse Input, Volatile Organic Compound, Volt-Amp Reactive, Volt-Amp Reactive Hour, Volt-Amps, Water Flow, Watt Hours, Watts, Wind

### Key Advantages:

- Records up to 15 channels
- Provides 12v excitation for third-party sensors
- Pre-configured Smart Sensors for fast setup
- Signal conditioning modules retain configurations until you change them, providing plug-and-play convenience for commonly used sensors
- Flexible power options include battery operation or AC power adapter
- Works with Onset's E50B2 Power & Energy Meter to measure Power Factor, Reactive Power, Watt Hours, and more

### Minimum System Requirements:



Software  
See pg 31



Interface  
Cable\*



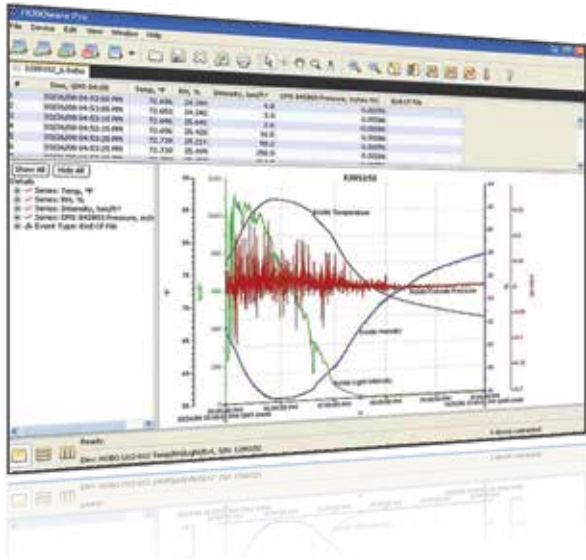
Sensor  
See pg 33

► For complete information and accessories, please visit: [www.onsetcomp.com](http://www.onsetcomp.com)

<b>Part number</b>	<b>H22-001</b>
<b>Memory</b>	512K nonvolatile flash data storage
<b>Operating Range</b>	-20° to 50°C (-4° to 122°F) with alkaline batteries -40° to 60°C (-40° to 140°F) with lithium batteries
<b>Sensor Inputs</b>	6 RJ-12 Smart Sensor jacks plus 3 FlexSmart module slots
<b>Communication</b>	RS-232 via 3.5 mm serial port*
<b>Logging Interval</b>	1 second to 18 hours, user-specified interval
<b>Sensor Excitation</b>	12 V DC at 200 mA total, with user-programmable warm up time on a per-channel basis
<b>Battery Life</b>	1 year typical
<b>Battery Type</b>	8 standard AA alkaline batteries (included)
<b>External Power</b>	Supports optional 13.6 V DC regulated AC Wall Adapter Connector
<b>Time Accuracy</b>	0 to 2 seconds for the first data point and ± 5 seconds per week at 25°C (77°F)
<b>Dimensions</b>	15.6 cm x 8.4 cm x 4.6 cm (6.13 in x 3.31 in x 1.81 in)
<b>CE Compliant</b>	Yes

\*USB to Serial interface cable, part #CABLE-PC-3.5. See page 37

# HOBOWare Pro Software



HOBOWare Pro is Onset's flagship graphing and analysis software package for HOBO data loggers. It allows you to view, graph, and analyze data with point-and-click simplicity. You can easily set up your application in a matter of minutes, quickly read out and plot data, and export to spreadsheets for further analysis.

## Key Advantages:

- Powerful graphing and analysis capabilities
- Enhanced plotting preferences: font, line style, Y-axis scaling, and saving settings
- Time-saving features automate launching and offloading multiple loggers
- Presentation-quality graphs
- Easy file management
- One-time price with free lifetime updates
- One-click data export to spreadsheet programs

 **HOBOWare Pro**  
30-Day FREE TRIAL  
[Visit onsetcomp.com for details](http://onsetcomp.com)

**Easy Logger Setup and Readout** – HOBOWare Pro makes it fast and easy to set up HOBO data loggers for deployment, and to readout the loggers after data has been collected. Settings are configured using simple, intuitive windows.

HOBOWare also offers a number of time-saving options that allow you to launch and offload multiple data loggers quickly by bypassing a number of default setup actions. This is ideal for projects involving multiple deployments of the same logger type.



**Data assistants** – Data Assistants are tools to simplify data analysis specific to your application. Data Assistants that come with HOBOWare Pro include Conductivity, Dissolved Oxygen, Barometric Compensation, Linear Scaling, Pulse Scaling, kWh Assistant, Growing Degree Days, and Grains Per Pound.



*Easy logger setup - select launch parameters and go!*

## HOBOWare Pro System Requirements

- Windows: 8, 7 (Pro, Ultimate and Home Premium), XP (Pro and Home).
- Windows 7 Enterprise: Note: While HOBOWare has been modified to work on Windows 7 Enterprise, there may be local configurations of that operating system that will not work with HOBOWare.
- Mac: OS X Versions 10.7.x, 10.8.x and 10.9.x.
- Java Runtime Environment (JRE) 1.6 or 1.7 (32-bit or 64-bit on Windows). Please note that Windows 8 users needing serial logger support must have Java 7 (1.7.0\_9) or greater. Please note that version 1.6, also known as Java 6, is officially supported on OS X only on Intel Core 2 Duo and later processors. See the time zone note below.
- One of the following Internet browsers: Safari 6, Microsoft Internet Explorer 10 and 11, as well as the most recent versions of Firefox and Google Chrome.
- Minimum screen resolution of 1024x768. Recommended screen resolution of 1280x800 or greater particularly for non-English users.
- 256+ colors
- 1.8 GHz single core CPU, 1GM RAM\*

\* HOBOnode users require up to 2.9 GHz dual core and 3GB RAM.  
USB cable included with software.

# HOBOnode Manager & HOBOLink



## HOBOnode Manager (for HOBO ZW Series)

*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 gives the ability to export your data to Microsoft Excel and other programs.

### Key Advantages:

- Get real-time graphs of your building data
- Receive text messages or email when conditions exceed thresholds
- Map deployed data nodes throughout your facility
- Advanced data delivery options via FTP, email



## HOBOLink

*Web-based Display/Readout*

HOBOLink is a powerful web-enabled software platform designed for HOBO U30 Remote Monitoring Systems (GSM/Wi-Fi/ETH models). It allows you to easily access current and historical data, set alarm notifications and relay activations, and manage and control your HOBO U30 system.

### Key Advantages:

- 24/7 web access to your data
- Access your data in over 30 countries
- Customize your data display
- Verify HOBO U30 system status remotely
- Set up and manage alarm notifications over the web
- Schedule automated delivery of exported data files
- Analyze data faster with custom export capabilities

# External Sensors by Measurement

## Indoor Environmental

Temperature										
Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-THB-M002 <sup>1</sup>	12-bit Temp/RH smart (2m cable)	√	√	√		√				
S-THB-M008 <sup>1</sup>	12-bit Temp/RH smart (8m cable)	√	√	√		√				
S-TMB-M002 <sup>1</sup>	12-bit Temp/RH smart (2m cable)	√	√	√		√				
S-TMB-M006 <sup>1</sup>	12-bit Temp smart (6m cable)	√	√	√		√				
S-TMB-M017 <sup>1</sup>	12-bit Temp smart (17m cable)	√	√	√		√				
TC6-J	Type J beaded thermocouple								√	√
TC6-K	Type K beaded thermocouple								√	√
TC6-T	Type T beaded thermocouple								√	√
TCP6-K12	Type K Probe thermocouple								√	√
TMC1-HD	Air/Water/Soil Temp (1' cable)				√		√			√
TMC6-HD	Air/Water/Soil Temp (6' cable)				√		√			√
TMC20-HD	Air/Water/Soil Temp (20' cable)				√		√			√
TMC50-HD	Air/Water/Soil Temp (50' cable)				√		√			√
TMC6-HC	Stainless steel Temp probe (6' cable)				√		√			√
TMC6-HE	Pipe Temp (6' cable)				√		√			√

Relative Humidity										
Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-THB-M002 <sup>1</sup>	12-bit Temp/RH smart (2m cable)	√	√	√		√				
S-THB-M008 <sup>1</sup>	12-bit Temp/RH smart (8m cable)	√	√	√		√				

Carbon Dioxide										
Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
TEL-7001 <sup>1</sup>	Telaire 7001 CO2	√		√	√		√			√

Air Velocity										
Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
T-DCI-F900-L-O	Air Velocity – 5 m/s long	√		√	√		√			√
T-DCI-F900-L-P	Air Velocity – 10 m/s long	√		√	√		√			√
T-DCI-F900-S-O	Air Velocity – 5 m/s std	√		√	√		√			√
T-DCI-F900-S-P	Air Velocity – 10 m/s std	√		√	√		√			√

Volatile Organic Compound										
Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
T-ION-TVOC	Volatile Organic Compound	√		√	√		√			√

Differential Pressure										
Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
T-VER-PXU-L <sup>1</sup>	Differential pressure transducer	√		√	√		√			√
T-VER-PXU-X <sup>1</sup>	Differential pressure transducer	√		√	√		√			√

Compressed Air Flow										
Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
T-CDI-5200-10S <sup>1</sup>	Compressed Air Flow Meter	√		√	√		√			√
T-CDI-5200-20S <sup>1</sup>	Compressed Air Flow Meter	√		√	√		√			√

<sup>1</sup> CE Compliant

# External Sensors by Measurement

## Gauge Pressure

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
T-ASH-G2-100 <sup>1</sup>	Ashcroft gauge pressure	√		√	√		√			√
T-ASH-G2-200 <sup>1</sup>	Ashcroft gauge pressure	√		√	√		√			√
T-ASH-G2-500 <sup>1</sup>	Ashcroft gauge pressure	√		√	√		√			√

## Energy/Power

### kW & kWh

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
T-VER-E50B2 <sup>1</sup>	Power & Energy meter	√	√	√			√			√
T-WNB-3D-240 <sup>1</sup>	WattNode 208/240 VAC 3-phase	√	√	√			√	√		√
T-WNB-3D-480 <sup>1</sup>	WattNode 480 VAC 3-phase	√	√	√			√	√		√
T-WNB-3Y-208-P <sup>1</sup>	WattNode 208-240VAC 2 or 3 Branch	√	√	√			√			√
T-WNB-3Y-208 <sup>1</sup>	WattNode 208/240 VAC 1,2, or 3-Phase	√	√	√			√	√		√
T-VER-8044-100	Veris 480 V, 100 Amp Kilowatt transducer	√		√	√		√			√
T-VER-8051-300	Veris kWh transducer 1-Phase, 300 Amp	√	√	√			√	√		√
T-VER-8053-800	Veris kWh transducer 3-Phase, 800 Amp	√	√	√			√	√		√

### AC & DC Current

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
CTV-A <sup>1</sup>	2 - 20 Amp split-core AC current sensor				√		√			√
CTV-B <sup>1</sup>	5 - 50 Amp split-core AC current sensor				√		√			√
CTV-C <sup>1</sup>	10 - 100 Amp split-core AC current sensor				√		√			√
CTV-D <sup>1</sup>	20 - 200 Amp split-core AC current sensor				√		√			√
CTV-E <sup>1</sup>	60 - 600 Amp split-core AC current sensor				√		√			√
T-MAG-0400-05 <sup>1</sup>	0.5 - 5 AMP split-core AC transformer	√		√						
T-MAG-0400-20 <sup>1</sup>	2 - 20 AMP split-core AC transformer	√		√						
T-MAG-0400-50 <sup>1</sup>	5 - 50 AMP split-core AC transformer	√		√						
T-MAG-0400-75 <sup>1</sup>	7.5 - 75 AMP split-core AC transformer	√		√						
T-ACT-0750-020 <sup>1</sup>	0.2 - 20 Amp split-core AC transformer	√		√						
T-ACT-0750-050 <sup>1</sup>	0.5 - 50 Amp split-core AC transformer	√		√						
T-ACT-0750-100 <sup>1</sup>	1 - 100 Amp split-core AC transformer	√		√						
T-ACT-0750-250 <sup>1</sup>	2.5 - 250 Amp split-core AC transformer	√		√						
T-MAG-SCT-100 <sup>1</sup>	10 - 100 Amp split-core AC transformer	√		√						
T-MAG-SCT-200 <sup>1</sup>	20 - 200 Amp split-core AC transformer	√		√						
T-MAG-SCT-600 <sup>1</sup>	60 - 600 Amp split-core AC transformer	√		√						
T-VER-971BP-200 <sup>1</sup>	Split-Core Bi-Polar DC transducer	√		√	√		√			√
T-VER-H970-200 <sup>1</sup>	Split-Core 200A DC transducer	√		√	√		√			√

### AC & DC Voltage

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
T-MAG-SPT-150	150 Volt AC potential transformer	√		√						
T-MAG-SPT-300	300 Volt AC potential transformer	√		√						
T-MAG-SPT-600	600 Volt AC potential transformer	√		√						
T-CON-ACT-150	ConLab 0-150 Volt AC transmitter				√		√			√
T-CON-ACT-300	ConLab 0-300 Volt AC transmitter				√		√			√
S-VIA-CM14 <sup>1</sup>	12-bit voltage input adapter	√	√	√						
CABLE-ADAP5	Voltage input cable 0-5 VDC				√		√			√
CABLE-ADAP10	Voltage input cable 0-10 VDC				√		√			√
CABLE-ADAP24	Voltage input cable 0-24 VDC									√
CABLE-4-20MA	Measures currents from 0 to 20.1 mA									√
CABLE-2.5-STEREO	Voltage input cable 0-2.5 VDC				√		√	√		√
S-FS-CVIA <sup>1</sup>	FlexSmart analog module (2 channels)			√						

<sup>1</sup> CE Compliant

# External Sensors by Measurement

## Energy/Power (continued)

### Amp Hour, Amps, Power Factor, Volt-Amp Reactive, Volt-Amp Reactive Hour, Volt Amps, Volts, Watt Hours, Watts

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
T-VER-E50B2 <sup>1</sup>	Power & Energy meter	√	√	√			√			√

### Pulse

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-UCC-M001 <sup>1</sup>	Electronic switch pulse input adapter - 1M	√	√	√						
S-UCC-M006 <sup>1</sup>	Electronic switch pulse input adapter - 6M	√	√	√						
S-UCD-M001 <sup>1</sup>	Contact closure pulse input adapter - 1M	√	√	√						
S-UCD-M006 <sup>1</sup>	Contact closure pulse input adapter - 6M	√	√	√						
CABLE-2.5-STEREO	Voltage input cable 0-2.5 VDC						√	√		◆

## Time-of-Use

### Motor On/Off

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
CSV-A8 <sup>1</sup>	AC current switch							√		√

## Water

### Water Temperature

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-TMB-M002 <sup>1</sup>	12-bit Temp/RH smart (2m cable)	√	√	◆		◆				
S-TMB-M006 <sup>1</sup>	12-bit Temp smart (6m cable)	√	√	◆		◆				
S-TMB-M017 <sup>1</sup>	12-bit Temp smart (17m cable)	√	√	◆		◆				
TMC1-HD	Air/Water/Soil Temp (1' cable)				√		√			◆
TMC6-HD	Air/Water/Soil Temp (6' cable)				√		√			◆
TMC20-HD	Air/Water/Soil Temp (20' cable)				√		√			◆
TMC50-HD	Air/Water/Soil Temp (50' cable)				√		√			◆

## Weather/Field

### Temperature

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-THB-M002 <sup>1</sup>	12-bit Temp/RH smart (2m cable)	√	√	◆		◆				
S-THB-M008 <sup>1</sup>	12-bit Temp/RH smart (8m cable)	√	√	◆		◆				
S-TMB-M002 <sup>1</sup>	12-bit Temp/RH smart (2m cable)	√	√	◆		◆				
S-TMB-M006 <sup>1</sup>	12-bit Temp smart (6m cable)	√	√	◆		◆				
S-TMB-M017 <sup>1</sup>	12-bit Temp smart (17m cable)	√	√	◆		◆				
TC6-J	Type J beaded thermocouple								√*	◆
TC6-K	Type K beaded thermocouple								√*	◆
TC6-T	Type T beaded thermocouple								√*	◆
TCP6-K12	Type K probe thermocouple								√*	◆
TMC1-HD	Air/Water/Soil Temp (1' cable)				√		◆			◆
TMC6-HD	Air/Water/Soil Temp (6' cable)				√		◆			◆
TMC20-HD	Air/Water/Soil Temp (20' cable)				√		◆			◆
TMC50-HD	Air/Water/Soil Temp (50' cable)				√		◆			◆
TMC6-HC	Stainless Steel Temp probe (6' cable)				√		◆			◆
TMC6-HE	Pipe Temp (6' cable)				√		◆			◆

◆ This logger is intended for indoor environments, but sensors are compatible.

\* Requires UX100-014M Thermocouple logger.

<sup>1</sup> CE Compliant

# External Sensors by Measurement

## Weather/Field (continued)

### PAR

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-LIA-M003 <sup>1</sup>	Photosynthetic light (PAR)	√	√	◆						

### Solar Radiation

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-LIB-M003 <sup>1</sup>	Solar radiation	√	√	◆						

### Barometric Pressure

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-BPB-CM50 <sup>1</sup>	Barometric pressure	√	√	◆						
S-BPA-CM10 <sup>1</sup>	HWS barometric pressure		√	◆						

### Wind Speed & Direction

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-WDA-M003 <sup>1</sup>	Wind direction (3m cable)	√	√	◆						
S-WSA-M003 <sup>1</sup>	Wind speed Smart Sensor (3m cable)	√	√	◆						
S-WSET-A <sup>1</sup>	Wind Smart Sensor set	√	√	◆						
S-WCB-M003 <sup>1</sup>	R.M. Young wind monitor-AQ adapter	√	√	◆						
S-WCC-M003 <sup>1</sup>	R.M. Young marine wind adapter	√	√	◆						
S-WCE-M003 <sup>1</sup>	R.M. Young wind monitor adapter	√	√	◆						

### Rainfall

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-RGA-M002 <sup>1</sup>	.01" Rain gauge Smart Sensor (2m cable)	√	√	◆						
S-RGB-M002 <sup>1</sup>	.2mm Rain gauge Smart Sensor (2m cable)	√	√	◆						

### Soil Moisture

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-SMC-M005 <sup>1</sup>	EC-5 soil moisture Smart Sensor	√	√	◆						
S-SMD-M005 <sup>1</sup>	10HS soil moisture Smart Sensor	√	√	◆						

### Leaf Wetness

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-LWA-M003 <sup>1</sup>	Leaf wetness Smart Sensor	√	√	◆						

### Relative Humidity

Part number	Type	U30	H21	H22	U12	U14	ZW	UX90	UX100	UX120
S-THB-M002 <sup>1</sup>	12-bit Temp/RH smart (2m cable)	√	√	√		√				
S-THB-M008 <sup>1</sup>	12-bit Temp/RH smart (8m cable)	√	√	√		√				

◆ This logger is intended for indoor environments, but sensors are compatible.

<sup>1</sup> CE Compliant

# Accessories

## Shuttles/Base Stations

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
U-DT-1 <sup>1</sup>	U-Shuttle data transporter	√	√			√									√	√	√ <sup>2</sup>		
U-DT-2 <sup>1</sup>	U30 shuttle data transporter	√	√										√						
U-DTW-1 <sup>1</sup>	Waterproof shuttle			√	√			√	√	√	√	√		√					
BASE-U-1 <sup>1</sup>	Pendant base station			√	√														
BASE-U-4 <sup>1</sup>	Optic USB base station			√	√			√	√	√	√	√		√					

## Computer Interface Cables

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
CABLE-PC-3.5	Serial interface cable for H-series HOBOS	√	√																
CABLE-USBMB	USB cable for HOBOS U-Series					√	√								√	√	√		√
ADAPT-SER-USB	USB to serial interface cable for H-series HOBOS	√	√																

## Submersible Cases

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
SUBC2-xx	For HOBOS U10 and U12 underwater use					√													
DESICCANT2	Desiccant packs (25 ea)																		√
85-ORING	Replacement o-rings (2 ea)	√																	

## Replacement Batteries

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
HRB-TEMP-1	Lithium batteries (box of 5)				√	√									√	√			
HRB-U30-S100	10 Ahr battery w/cable												√						
HP-B	Replacement battery for HOBOS U23									√									

## Replacement Couplers

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
COUPLER-UA	Coupler (for use with BASE-U-4)*				√														
COUPLER2-A	Coupler (for use with BASE-U-4)				√														
COUPLER2-B	Coupler (for use with BASE-U-4)							√											
COUPLER2-C	Coupler (for use with BASE-U-4)								√		√	√							
COUPLER2-D	Coupler (for use with BASE-U-4)													√					
COUPLER2-E	Coupler (for use with BASE-U-4)									√									

## Subminiature Connectors

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
SMC-J	For type J wire															√	√		
SMC-K	For type K wire															√	√		
SMC-T	For type T wire															√	√		

<sup>1</sup> CE Compliant

<sup>2</sup> Not compatible with UX120-006M

\* Or U-DT-1. See page 39



## Additional Accessories

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
U12-015-03-ORING-KIT	O-ring kit (U12-015-03)					√													
T-VER-AH02	Single phase fuse kit (for T-VER-E50B2 only)																		
A-E50B2-LEADSET	Wiring kit (for T-VER-E50B2 only)																		
A-WNB-LEADSET	Voltage input lead set with alligator clips		√	√									√		√		√		√
BOOT-BLK	Protective boot, black (cap included)								√										
BOOT-WHT	Protective boot, white (cap included)								√										
85-CAPLUG-H20-B	Replacement cap for protective boot, black								√										
85-CAPLUG-H20-W	Replacement cap for protective boot, white								√										
BOOT-TIDBIT-BK	Protective boot, black (5 ea)													√					
BOOT-TIDBIT-WH	Protective boot, white (5 ea)													√					
U20-CASE-1	Carrying case							√											
HOUSING-U2X	Protective Housing							√			√								
CABLE-1-50	Teflon coated SS cable (50 ft)							√			√	√							
CABLE-1-300	Teflon coated SS cable (300 ft)							√			√	√							
CABLE-1-CRIMP	Crimp sleeve (12 ea) for above cables							√			√	√							
SOLAR-1.2W	1.2 watt, 6 volt solar panel														√				
SOLAR-3W	3 watt, 6 volt solar panel														√				
SOLAR-6W	6 watt, 6 volt solar panel														√				
AC-U30	AC power adapter for the U30 (AC-U30-EU <sup>1</sup> )													√					
RS1	Solar radiation shield					√			√	√				√					
M-RSA	Solar radiation shield (assembled)					√			√	√				√					
RS3	Solar radiation shield									√									√
U23-RS-CLAMPKIT	Mounting clamp (2 required)									√									
UX90-LIGHT-PIPE-1	1-foot fiber optic attachment for HOBO UX90															√			
CASE-PELICAN-1510	Pelican case- durable, watertight, FAA carry-on	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

## Additional Replacement Parts

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
U12-015-03-ORING-KIT	O-ring kit (U12-015-03)					√													
U12-015-ORING-E	O-ring kit (EPDM)					√													
U12-015-ORING-V	O-ring kit (Viton)																		√
H8X4-BK	Replacement parts kit					√													
HUM-RHPCB-1	RH sensor									√									
HUM-RHPCB-2	RH sensor (includes S-THB)									√						√			√
HUM-RHPCB-3	RH sensor (for serial #s < 9847173)						√												
HUM-RHPCB-3A	RH sensor (for serial #s > 9847173)						√										√		
DESICCANT1	Desiccant (25 ea) for UA & U23					√				√									
DESICCANT2	Desiccant (25 ea) submersible cases																		
DESICCANT5	Desiccant (25 ea) for UA-003-64					√													
DESIC-PACK	Desiccant (2 ea) for U12-008						√												
85-DESICCANT6	Desiccant pack for HOBO Micro Station	√																	
UA-PARTSKIT	Parts kit for UA loggers					√													
HUM-RHCAP2	RH cap kit (5 ea) (includes S-THB))									√									
CABLE-TEMP/RH	Sensor cable for ZW loggers																		√
CABLE-U23-002	Sensor cable									√									
U26-RDOB-1	Replacement DO Sensor Cap												√						

## NIST Certification

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	U30	UTBI	UX90	UX100	UX120	W-x	ZW
NIST-SETUP	NIST traceable setup/logger				√	√	√	√	√	√				√	√	√	√		√
NIST-TEMP-POINT	NIST per-point/channel				√	√	√	√	√	√				√	√	√	√		√

<sup>1</sup> CE Compliant

# Data Shuttles/Base Stations



**HOBO U-Shuttle**  
U-DT-1<sup>1</sup>

The HOBO U-Shuttle data transporter provides convenient in-field data offload and relaunch of HOBO U-series loggers and HOBO Weather Stations, Micro Stations, and HOBO Energy Logger systems.

### Key Advantages:

- Enables convenient, easy data offload from HOBO U-Series, H21 and H22 data loggers and UX<sup>2</sup> data loggers (Base Station required for Optic USB loggers)
- Provides safe transport of data back to a PC or Mac
- Stores data from multiple data loggers
- Displays logger status, including memory, battery level, and sensor readings for some sensors (on some models)
- CABLE-HOBO-SHTL and CABLE-USBMB included



**HOBO U30 Shuttle**  
U-DT-2<sup>1</sup>

The HOBO U-DT-2 U30 Shuttle data transporter provides convenient in-field data offload and relaunch of HOBO U30 NRC systems and HOBO Weather Stations (H21), Micro Stations, and HOBO Energy Logger systems (H22).

### Key Advantages:

- Enables convenient, easy data offload from HOBO U30 Series, H21 and H22 data loggers
- Provides safe transport of data back to a PC or Mac
- Stores data from multiple data loggers
- Displays logger status, including memory, battery level, and sensor readings for some sensors
- CABLE-HOBO-SHTL and CABLE-USBMB included



**HOBO Waterproof Shuttle**  
U-DTW-1<sup>1</sup>

The HOBO Waterproof Shuttle provides convenient readout and relaunching of underwater and outdoor HOBO loggers with an Optic USB interface, and is waterproof to 20 meters (66 feet). The HOBO Waterproof Shuttle can also be used as a Base Station.

### Key Advantages:

- Can be used either as a data shuttle or an Optic USB Base Station
- Supports all HOBO Optic USB loggers
- Outdoor or underwater data readout
- Convenient direct USB connection to host computer
- Waterproof to 20 meters
- Checks and indicates its own battery status



**HOBO Base Station**  
BASE-U-4<sup>1</sup>

The HOBO Optic USB Base Station and a series of couplers are used to offload data from any HOBO data logger with an Optic USB interface. The Optic USB Base Station connects to your computer via USB, while connecting to the logger via an appropriate coupler.

### Key Advantages:

- Provides fast optical infrared (IR) communications for easy launch and readout of all HOBO Optic USB loggers
- Splash-resistant

<sup>1</sup> CE Compliant

<sup>2</sup> Not compatible with UX120-006M

# Data Shuttles/Base Stations



**Pendant Base Station**  
BASE-U-1<sup>1</sup>

The Pendant Base Station and Coupler provide fast optical infrared (IR) communication for easy logger launch and readout of HOBO Pendant loggers. The Base Station connects via USB to a host computer, while the coupler attaches the logger to the Base Station for communications.

### Key Advantages:

- Provides fast optical communications for easy launch and readout of all HOBO Pendant loggers
- Connects via USB cable to host computer
- Splash-resistant

HOBO Shuttle and Base Station Compatibility						
		U-Shuttle Data Transporter U-DT-1 <sup>1</sup>	U30 Shuttle Data Transporter U-DT-2 <sup>1</sup>	Waterproof Shuttle U-DTW-1* <sup>1</sup>	Pendant Base Station BASE-U-1 <sup>1</sup>	Optic USB Base Station BASE-U-4* <sup>1</sup>
<b>Storage Capacity</b>	504 loggers/8k memory	√				
	63 loggers/64k memory	√		√		
	7 loggers/512k memory	√	√			
<b>HOBO UX90</b>		√				
<b>HOBO UX100</b>		√				
<b>HOBO UX120</b>		√ <sup>2</sup>				
<b>HOBO U12</b>		√				
<b>HOBO U24</b>		√B		√		√
<b>HOBO U26</b>		√B		√		√
<b>HOBO Pendant</b>		√B		√	√	√
<b>HOBO U20</b>		√B		√		√
<b>HOBO U22</b>		√B		√		√
<b>HOBO U23</b>		√B		√		√
<b>UTBI TidbiT Temp V2</b>		√B		√		√
<b>RG3 Rain Gauge</b>		√B		√	√	√
<b>HOBO H21</b>		√	√			
<b>HOBO H22</b>		√	√			
<b>HOBO U30</b>			√			

\*Couplers are included

Products with a "√B" require a Base Station for use with the U-Shuttle.

<sup>1</sup> CE Compliant

<sup>2</sup> Not compatible with UX120-006M

# The Onset Advantage

## Responsiveness

Your projects have tight deadlines that your monitoring partner must be able to meet. Onset offers a highly responsive, dynamic manufacturing environment where we build and ship all our products directly from our headquarters on Cape Cod. Our centralized operations and large capacity enable us to provide fast turnaround to meet your tight project deadlines. Most orders ship within 24 hours.



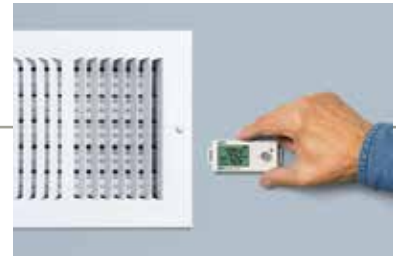
## Reliable, Accurate Data

No matter what your application involves, at the end of the day it all comes down to the integrity of your data. HOBOS, which have become a generic name for data loggers in many markets, are known for providing the most reliable, accurate energy and environmental data under some of the world's toughest environmental conditions.



## Simple & Cost-Effective

At Onset, we realize that the technology skill set of our customers and their technology budgets can vary widely. For this reason, our products are designed from the ground up with ease-of-use and affordability in mind.



## Applications Expertise

With more than three decades of experience in solving data logging applications, Onset has developed an applications expertise that is second to none. Whether you are measuring building energy performance or studying water and field ecology, chances are we have seen your application before and know what it takes to solve it.



## World Class Support

Many of our new customers are surprised to find that when they call Onset, a live person answers the phone. Our world-class technical service department is staffed by friendly, knowledgeable people who listen carefully to your questions and guide you through any challenges that arise. Unlike many technology companies, Onset offers free technical support for the life cycle of your purchase.



*"Temperature and relative humidity monitoring is critical to the preservation of our records. Traditional data loggers would have provided the data we needed, but we didn't want to spend a lot of time manually retrieving the data throughout the building."*

*The wireless data nodes are helping us make sure that our archives are getting the best protection possible."*

Harold Stoehr  
Network Administrator  
Washington State Archives

## About Onset

Onset is a leading supplier of data loggers. Our HOBO data loggers and weather stations are used around the world in a broad range of monitoring applications, from verifying the performance of green buildings and renewable energy systems to agricultural and coastal research.

Based on Cape Cod, Massachusetts, Onset has sold more than 2 million data loggers since the company's founding in 1981.



*Onset headquarters, Cape Cod, MA*

Our goal is to make your data logging project a success.

- ▶ Email [sales@onsetcomp.com](mailto:sales@onsetcomp.com)
- ▶ Go to [onsetcomp.com](http://onsetcomp.com) to browse our white papers, application stories, videos, and webinars

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Patented technology (U.S. Patent 6,826,664)

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Hochwertige Messtechnik und Beratung aus einer Hand

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