

onset®

HOBO® Data Loggers



Energy Monitoring • Field Research • Water Management



Sales & Support:
(435) 755-0774
<http://www.inmtn.com>
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Product Catalog

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 products 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 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.



Visit us at onsetcomp.com to browse our full line of HOBOn 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/resources to access our full library.



NEW! The HOBOn UX90 Series data loggers is the industry's lowest-cost, most comprehensive family of "time-of-use" data loggers.
[See page 14](#)



The HOBOn U10 is an economical choice for indoor temperature and relative humidity monitoring.
[See page 4](#)



The HOBOn Conductivity/Salinity logger is a high-accuracy, easy to maintain data logger for measuring conductivity, salinity and temperature in salt water.
[See page 40](#)

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MKT1001-1219 Patented technology (U.S. Patent 6,826,664)



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HOBO U10 data loggers are an economical choice for indoor temperature and humidity monitoring. Their small size and large memory capacity make these ideal multi-purpose loggers for a wide range of environmental monitoring projects.

Key Advantages:

- Small size for mounting anywhere
- Low cost lets you monitor many locations economically
- Internal sensors for easy deployment

Memory:	52,000 measurements	
Sample rate:	1 second to 18 hours, user-selectable	
Battery life:	1 year (typical)—user-replaceable	CE

Temperature

Measurement range:	-20° to 70°C (-4° to 158°F)
Accuracy:	± 0.54°C from 0° to 50°C (0.97°F from 32° to 122°F)
Resolution (10-bit):	0.1°@ 25°C (0.2°@ 77°F)
Response time:	10 minutes (to 90% in airflow of 1 m/s)

NIST-traceable temperature accuracy certificate available. (See page 72)

Relative Humidity (RH)

Measurement range:	25% to 95% RH
Accuracy:	±3.5% RH from 25% to 95% over range of 5° to 55°C (41° to 131°F)
Resolution (10-bit):	0.07% RH
Response time:	6 minutes (to 90% in airflow of 1 m/s)



Monitoring & Control Systems

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HOBO U10 Model Comparison			
		Temperature	Temp/RH
		U10-001	U10-003
		\$65	\$81
Number of Channels		1	2
Internal Sensors	Temperature	yes	yes
	Relative Humidity	--	yes
Size	cm	6.0 x 4.7 x 1.9	6.0 x 4.7 x 1.9
	inches	2.4 x 1.9 x 0.8	2.4 x 1.9 x 0.8
Weight	grams	28	28
	ounces	0.9	0.9

Complete system requires logger and software.

Ordering Information		
Data Loggers		
HOBO U10 Temp	U10-001	\$65
HOBO U10 Temp/RH	U10-003	\$81
Software		
HOBOWare Pro Software (Windows®/Mac®)	BHW-PRO-CD	\$99
Optional Communications		
HOBO U-Shuttle*	U-DT-1	\$260
*Requires HOBOWare Pro software, see page 52 for details.		
HOBOWare includes USB interface cable		
		Prices subject to change

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

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Data Loggers/ Indoor Environments



HOBO U12 data loggers provide high-accuracy monitoring of temperature, humidity and other parameters. They provide 12-bit resolution measurements for detecting greater variability in recorded data, direct USB connectivity for convenient, high-speed data offload, and a 43K measurement capacity. They also feature rugged enclosures for enhanced product durability.

Key Advantages:

- Large memory for long-term deployments or fast sampling
- Five models to choose from, with flexible measurement options
- Programmable as well as push-button start

Memory: 43,000 measurements
 Sample rate: 1 second to 18 hours, user-selectable
 Battery life: 1 year (typical)—user-replaceable 

Temperature

Measurement range: -20° to 70°C (-4° to 158°F)
 Accuracy: $\pm 0.35^{\circ}\text{C}$ from 0° to 50°C (0.63°F from 32° to 122°F)
 Resolution (12-bit): 0.03°@ 25°C (0.05°@ 77°F)
 Response time: 6 minutes (to 90% in airflow of 1 m/s)

***NIST-traceable temperature accuracy certificate available.
 (See page 72)***

Relative Humidity (RH)

Measurement range: 5% to 95% RH
 Accuracy: $\pm 2.5\%$ typical, 3.5% maximum, from 10 to 90% RH
 Resolution (12-bit): 0.03% RH
 Response time: 1 minute (to 90% in airflow of 1 m/s)


Light Intensity

Designed for general purpose indoor measurement of relative light levels
 Range: 1 to 3000 footcandles (lumens/ft²) typical
 0-32,300 lumens/m² [0-3,000 footcandles (lumens/ft²)]

External Input

External sensors for temperature, AC current, AC voltage, CO₂, 4-20 mA, 0-10 VDC
(see sensors page 57)

Input range: 0 to 2.5 VDC
 Accuracy: ± 2 mV, $\pm 2.5\%$ of absolute reading
 Resolution (12-bit): 0.6 mV
 Output power: 2.5 VDC at 2 mA, active only during measurements

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HOBO U12 Model Comparison

		Temperature	4 External	Temp/RH	Temp/RH/Light/Ext	Temp/RH/2 Ext
		U12-001	U12-006	U12-011	U12-012	U12-013
		\$85	\$108	\$115	\$133	\$133
Number of Channels		1	4	2	4	4
Internal Sensors	Temperature	yes	--	yes	yes	yes
	Relative Humidity	--	--	yes	yes	yes
	Light Intensity	--	--	--	yes	--
External Sensors		--	yes	--	yes	yes
Size	cm	5.8 x 7.4 x 2.2	5.8 x 7.4 x 2.2	5.8 x 7.4 x 2.2	5.8 x 7.4 x 2.2	5.8 x 7.4 x 2.2
	inches	2.3 x 2.9 x 0.9	2.3 x 2.9 x 0.9	2.3 x 2.9 x 0.9	2.3 x 2.9 x 0.9	2.3 x 2.9 x 0.9
Weight	grams	46	46	46	46	46
	ounces	1.6	1.6	1.6	1.6	1.6

Complete system requires logger and software.

Ordering Information

Data Loggers

HOBO U12 Temp	U12-001	\$85
HOBO U12 4 Ext Channels	U12-006	\$108
HOBO U12 Temp/RH	U12-011	\$115
HOBO U12 Temp/RH/Light/Ext Channel	U12-012	\$133
HOBO U12 Temp/RH/2 Ext Channels	U12-013	\$133

kW**

3 Phase, 450V, 100 AMP	T-VER-8044-100	\$815
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Gauge Pressure***†

100 psig	T-ASH-G2-100	\$190
200 psig	T-ASH-G2-200	\$190
500 psig	T-ASH-G2-500	\$190

Differential Air Pressure Transducer***†

0.01-10.0 WC	T-VER-PXU-L	\$220
0.01-10.0 WC	T-VER-PXU-X	\$195

Humidity***†

Duct-Mount RH/Temp	T-VAI-HMD-40Y	\$299
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DC Current***†

0-200 Amp	T-VER-H970-200	\$205
-200 to 200 Amp	T-VER-971BP-200	\$299

Air Velocity Sensor***†

0.15-10 m/s	T-DCI-F900-L-P	\$319
0.15-5 m/s	T-DCI-F900-L-O	\$319
0.15-10 m/s	T-DCI-F900-S-P	\$235
0.15-5 m/s	T-DCI-F900-S-O	\$235

Compressed Air Flow Meter**

1-80 SCFM	T-CDI-5200-10S	\$495
3-350 SCFM	T-CDI-5400-20S	\$629

Volatile Organic Compound (VOC)***†

0-10, 0-100, 0-1000 ppm	T-ION-TVOC	\$2995
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Temperature Sensors

Air/Water/Soil Probe 0.3m (1ft)	TMC1-HD	\$32
Air/Water/Soil Probe 1.8m (6ft)	TMC6-HD	\$35
Air/Water/Soil Probe 6.1m (20ft)	TMC20-HD	\$40
Air/Water/Soil Probe 15.2m (50ft)	TMC50-HD	\$45
Stainless Steel Temp Probe 1.8m (6ft)	TMC6-HC	\$79
Pipe Temp 1.8m (6ft)	TMC6-HE	\$35

Split-core AC Current Sensors

0-20 Amps AC	CTV-A	\$90
0-50 Amps AC	CTV-B	\$90
0-100 Amps AC	CTV-C	\$90
0-200 Amps AC	CTV-D	\$115
0-600 Amps AC	CTV-E	\$115

CO₂**

Telaire CO ₂ /Temp Monitor	TEL-7001	\$465
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AC Voltage Transmitters**

0 - 150 Volts AC	T-CON-ACT-150	\$139
0 - 300 Volts AC	T-CON-ACT-300	\$139

DC Voltage

0 - 2.5 Volts DC	CABLE-2.5-STEREO	\$9
0 - 5 Volts DC	CABLE-ADAP5	\$12
0 - 10 Volts DC	CABLE-ADAP10	\$12

Milliamps

4 - 20mA	CABLE-4-20MA	\$25
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Software

HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
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Optional Communications

HOBO U-Shuttle*	U-DT-1	\$260
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* Requires HOBOWare Pro software, see page 52 for details.
HOBOWare includes USB interface cable.

** Requires input cables. See page 57 for compatibility.

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

Prices subject to change

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



HOBO U14 LCD data loggers display and record temperature and humidity conditions. They are well-suited for use in manufacturing, processing, and storage environments where reliable monitoring and documentation of specific temp/RH conditions are critical.

Key Advantages:

- Real-time display of temperature and relative humidity
- Alarm display and output ensure timely notification of out-of-range conditions
- Two models to choose from—Internal Temp/RH or External Temp/RH sensors
- Optional protective case for outdoor environments
- Optional Remote Alarm and Autodialer
- Fast data offload via USB



Memory: 43,000 measurements
 Sample rate: 1 second to 18 hours
 Battery life: 1-year (typical)—user-replaceable
 Operating range: -20° to 50°C (-4° to 122°F) 0 to 100% RH non-condensing



Weatherproof case (CASE-4x) required for outdoor use. HOBO U14-001 is not suitable for outdoor use.

Internal Temperature Measurement

Temperature Measurement

Range: -20° to 50°C (-4° to 122°F)
 Accuracy: $\pm 0.21^{\circ}\text{C}$ from 0° to 50°C ($\pm 0.38^{\circ}\text{F}$ from 32° to 122°F)
 Resolution (12 bit): 0.03°C @ 25°C (0.05° @ 77°F)
 Response time: 15 minutes (to 90% in airflow of 1 m/s)

Internal RH Measurement

Range: 0 - 100% RH, -20° to 50°C (-4° to 122°F)
 Accuracy: $\pm 2.5\%$ typical, 3.5% maximum, from 10 to 90% RH
 Resolution (12 bit): 0.03% RH @ 25°C (77°F)
 Response time: 2 minutes (to 90% in airflow of 1 m/s)

External Temperature

Temperature Measurement

Range: -40° to 100°C (-40° to 212°F) for sensor tip only
 Accuracy: $\pm 0.2^{\circ}\text{C}$ from 0° to 50°C ($\pm 0.36^{\circ}\text{F}$ from 32° to 122°F)
 Resolution (12-bit): 0.03°C @ 25°C (0.05° @ 77°F)
 Response time: 2 minutes (to 90% in airflow of 1 m/s)



***Last two digits of product number indicate sensor cable length (in meters).**



12-bit Temperature Probe

\$95 S-TMB-M002*

\$105 S-TMB-M006*

\$120 S-TMB-M017*



External Temperature/ RH Probe

\$189 S-THB-M002*
\$195 S-THB-M008*

Temperature Measurement

Range: -40° to 75°C (-40°F to 167°F)
Accuracy: ±0.21°C from 0° to 50°C (0.38°F from 32° to 122°F)
Resolution (12 bit): 0.03°C @ 25°C (0.05°F @ 77°F)
Response time: 5 minutes (to 90% in airflow of 1 m/s)

RH Measurement

Range: 0 - 100% RH, -40° to 75°C (-40° to 167°F)
Accuracy: ±2.5% typical, 3.5% maximum, from 10 to 90% RH
Resolution (10 bit): 0.1% RH @ 25°C (77°F)
Response time: 10 minutes (to 90% in airflow of 1 m/s) with protective cap



***Last two digits of product number indicate sensor cable length (in meters).**



Remote Alarm

\$95 ARA

Remote Alarm

- Adjustable audible alarm level (soft/loud)
- Self-test confirms proper indicator operation
- Two inputs provide alarm notification for separate zones
- 1 year battery life (typical)—user-replaceable
- Battery status indication



Auto Dialer

\$179 AVD-45

Auto Dialer

- Dials up to 4 different numbers
- Transmits either voice or numeric messages (for pagers)
- Automatically redials busy or unanswered numbers (up to 10 times for each number)
- AC powered (AC adapter included)
- Internal 9V alkaline battery provides 4 hours of stand-by power
- Works alone or in conjunction with remote alarm



Protective Case for LCD Logger

\$79 CASE-4x
1.7 x 12.7 x 5.7 cm
(6.75 x 2.25 in)
315.2 g (11.2 oz)




Protective Case

- Tested to NEMA 4X (IP65) Standards
- External Temperature or Temperature/RH sensor and alarm relay cables feed through watertight grommets
- Easy data readout via removable watertight fitting with O-ring seal
- Hook and loop tape secures LCD logger inside case
- Materials: Polycarbonate body and cover—UV stabilized

Note: Protective Case is for use with the U14-002 HOBO LCD Data Logger with external input from remote Temperature or Temperature/RH sensors. Check the HOBO LCD Sensor specifications to assure that the unprotected external sensor is recommended for your operating environment.

NIST-traceable temperature accuracy certification is available. (See page 72)

HOBO U14 Model Comparison

		Internal Temp/RH  U14-001	External Temp or Temp/RH  U14-002
		\$209	\$169
Internal Sensors	Temperature	yes	--
	Relative Humidity	yes	--
External Sensor	Temperature	--	yes
	Relative Humidity	--	yes
Size	cm	12.4 x 9.1 x 3.0	12.4 x 9.1 x 3.0
	inches	4.9 x 3.6 x 1.2	4.9 x 3.6 x 1.2
Weight	grams	170	170
	ounces	6	6


External Sensors sold separately. See pages 8 and 9.

Data Loggers/ Indoor Environments

Ordering Information

Data Loggers		
HOBO U14 Temp/RH (Internal Temp/RH)	U14-001	\$209
HOBO U14 Temp/RH (External Temp or Temp/RH)	U14-002	\$169
Software		
HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Sensors		
External Temperature Probe	S-TMB-M002	\$95
	S-TMB-M006	\$105
	S-TMB-M017	\$120
External Temperature/RH Probe	S-THB-M002	\$189
	S-THB-M008	\$195
Communications and Accessories		
Two-Zone Remote Alarm	ARA	\$95
Protective Case for LCD Logger	CASE-4x	\$79
Auto Dialer	AVD-45	\$179
HOBO U-Shuttle*	U-DT-1	\$260
*Requires HOBOWare Pro software, see page 52 for details.		Prices subject to change
HOBOWare includes USB interface cable		

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


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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.

Key Advantages:

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



Memory: 43,000 measurements
 Sample rate: 1 second to 18 hours, user-selectable
 Battery life: 3-years (typical)—factory-replaceable 

Temperature Measurement

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)
 Resolution 12 bit: 0.02°@ 25°C (0.04°@ 77°F)
 Response time:
 U12-015: 10 minutes (to 90% in airflow of 1 m/s)
 U12-015: 3.5 minutes (to 90% in water)

U12-015-02: 2.25 minutes (to 90% in airflow of 1m/s)
 U12-015-02: 20 seconds (to 90% in water)



HOBO U12 Stainless Temperature Logger
\$259 U12-015
 101.6 x 17.5 mm diameter
 (4.0 x 0.69 in diameter)




HOBO U12 Stainless Temperature Logger 5 inch Probe
\$355 U12-015-02
 12.4 x 0.4 cm diameter
 (4.9 x 0.16 in diameter)

NIST-traceable temperature accuracy certification available. (See page 72).

Complete system requires logger and software.

Ordering Information			
Data Loggers			
HOBO U12 Stainless Temperature Logger	U12-015		\$259
HOBO U12 Stainless Temperature Logger 5" Probe	U12-015-02		\$355
Software			
HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD		\$99
Optional Communications			
HOBO U-Shuttle*	U-DT-1		\$260
*Requires HOBOWare Pro software, see page 52 for details. HOBOWare includes USB interface cable			Prices subject to change

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



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Thermocouple Logger
HOBO U12 J, K, S, T
\$129 U12-014
 5.8 x 7.4 x 2.2 cm
 (2.3 x 2.9 x 0.85 in)
 46 g (1.6 oz)

The HOBO U12 Thermocouple data logger provides exceptional measurement flexibility by accepting J, K, S, or T thermocouple probes.

Key Advantages:

- High-accuracy J, K, S, T thermocouple recordings
- Automatic cold-junction compensation
- Accepts industry-standard subminiature thermocouple connectors

Memory: 43,000 measurements
 Sample rate: 1 second to 18 hours (user-selectable)
 Battery life: 1-year (typical)—user-replaceable





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Data Loggers/ Indoor Environments

Temperature	Temperature Ranges	Accuracy	Resolution (12-bit)
with J Thermocouple	0° to 750°C (32° to 1382°F)	± 2.5°C or 0.5% of reading, whichever is greater	0.21° @ 375°C (0.38° @ 707°F)
with K Thermocouple	0° to 1250°C (32° to 2282°F)	± 4.0°C or 0.5% of reading, whichever is greater	0.32° @ 625°C (0.58° @ 1157°F)
with S Thermocouple	-50° to 1760°C (-58° to 3200°F)	± 6.0°C or 0.5% of reading, whichever is greater	0.44° @ 855°C (0.79° @ 1571°F)
with T Thermocouple	-200° to 100°C (-328° to 212°F)	± 1.5°C (± 2.7°F)	0.10° @ -50°C (0.18° @ -58°F)



Beaded Thermocouple Probes on Spool Caddies
\$19 TC6-J, TC6-K, TC6-T
 1.8 m (6 ft)

Probe and Wires

Exposed-junction thermocouple probes include 6 ft of insulated 30-AWG wire wound on an integrated spool caddy/ subminiature connector

100' coils of insulated 24-AWG thermocouple wire



Thermocouple Wire
\$59 TCW100-J, TCW100-K, and TCW100-T
 30.5 cm (100 ft.)

Temperature	Temperature Ranges	Accuracy
Type J TEFLON insulation:	0° to 250°C (32° to 482°F)	± 2.2°C (± 4°F)
Type K glass braid insulation:	0° to 285°C (32° to 545°F)	± 2.2°C (± 4°F)
	285° to 482°C (545° to 900°F)	± 0.75%
Type T TEFLON insulation:	-200° to -65°C (-330° to -85°F)	± 1.5%
	-65° to 130°C (85° to 270°F)	± 1.0°C (± 1.8°F)
	130° to 180°C (270° to 356°F)	± 0.75%

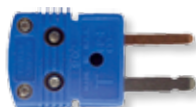


**High-temperature
Stainless Steel Probe**
— Type K
\$39 TCP6-K12
30.5 cm (12 in)

Temperature Ranges	Accuracy
0° to 293°C (32° to 559°F)	±2.2°C (±4°F)
293° to 900°C (559° to 1650°F)	±0.75%**

** Percentage is of degrees above or below 0°C (32°F)

- 12 in 304 stainless-steel probe; 3/16in diameter with isolated thermocouple
- 1 in Handle with spring-type strain relief
- 6 ft 19-AWG cable



**Subminiature
Thermocouple Connectors**
\$9 SMC-J, SMC-K, SMC-T


- Accept stranded or solid wire up to 20 AWG Internal silicone grommet for strain relief
- Captive cover screws
- Write-on window
- Type J, K, and T versions available

Complete system requires logger, temperature probe(s), and software.

Ordering Information		
Thermocouple Logger		
HOBO U12 J, K, S, T	U12-014	\$129
Thermocouple Probes and Wires		
1.8 m (6 ft) Beaded Thermocouple with connector—J Type	TC6-J	\$19
1.8 m (6 ft) Beaded Thermocouple with connector—K Type	TC6-K	\$19
1.8 m (6 ft) Beaded Thermocouple with connector—T Type	TC6-T	\$19
30.5 cm (12 in) Stainless-Steel Probe Thermocouple—K Type	TCP6-K12	\$39
30.5 m (100 ft) of 24-AWG Thermocouple wire—J Type	TCW100-J	\$59
30.5 m (100 ft) of 24-AWG Thermocouple wire—K Type	TCW100-K	\$59
30.5 m (100 ft) of 24-AWG Thermocouple wire—T Type	TCW100-T	\$59
Thermocouple Connectors		
Subminiature Type J	SMC-J	\$9
Subminiature Type K	SMC-K	\$9
Subminiature Type T	SMC-T	\$9
Software		
HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Optional Communications		
HOBO U-Shuttle*	U-DT-1	\$260

*Requires HOBOWare Pro software, see page 52 for details. **Prices subject to change**
HOBOWare includes USB interface cable

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

 Monitoring & Control Systems	Sales & Support: (435) 755-0774 http://www.inmtn.com info@inmtn.com
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The 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 feature that allows users to export data files to text format for use in spreadsheets and other programs.

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



Common Features for HOBO UX90 Series





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(435) 755-0774
<http://www.inmtn.com>
info@inmtn.com



Specifications

	State	Light On/Off	Motor On/Off	Occupancy/Light	Occupancy/Light
Part number	UX90-001	UX90-002	UX90-004	UX90-005	UX90-006
	\$85	\$85	\$85	\$199	\$199
Memory	84,650 measurements				
Part number	UX90-001M	UX90-002M	UX90-004M	UX90-005M	UX90-006M
	\$110	\$110	\$110	\$224	\$224
Memory	346,795 measurements				
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 use				
Operating range	-20° to 70°C (-4° to 158°F); 0-95% RH (non-condensing)				
Size	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)
Weight	23 g (0.81 oz)		30 g (1.06 oz)		

Data Loggers/ Indoor Environments

Ordering Information

Software			
HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD		\$99
Sensors			
AC Current Switch	CSV-A8		\$89
Wattnode kWh transducers	TWNB-3x-xxx		\$229-\$269
Water Flow Meter Sensor	T-MINOL-130		\$105
Optional Communications			
HOBO U-Shuttle*	U-DT-1		\$260
Accessories			
Voltage Input Cable	CABLE-2.5-STEREO		\$9
1 ft Fiber Optic Attachment	UX90-LIGHT-PIPE-1		\$25
*Requires HOBOWare Pro software, see page 52 for details. HOBOWare includes USB interface cable			Prices subject to change

► For complete information and specifications, please visit: www.onsetcomp.com/ux90



1-800-LOGGERS





The HOBO UX120 4-Channel Pulse Input 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.

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 a 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 (PF), Reactive Power (VAR), Watt Hours (Wh) and more

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



Unparalleled Flexibility

The HOBO UX120 offers unparalleled energy measurement flexibility at a fraction of the cost of current multi-channel pulse logging solutions. It is an ideal toolbox product for energy monitoring applications where fast deployment and a range of energy measurements are needed. For example, while the logger is monitoring power use on one channel, it can independently track gas flow on another, pump runtimes on another, and the open and closed status of a door on yet another.

Streamlined Deployment

The HOBO UX120 Pulse Logger provides a number of features that provide users with greater control over their deployments. For example, users can start and stop the logger via software or push buttons, and set the logger so it continues to log/overwrite data when the memory is full. It also provides diagnostics via on-board LEDs to assure logger operation/status which aids the installation process, and enables high-speed data offloads via its USB 2.0 interface.



Data Loggers/ Indoor Environments



Specifications

Part Number	UX120-017	UX120-017M
	\$195	\$295
Memory	520,192 measurements (assumes 8-bit)	4,124,672 measurements (assumes 8-bit)
Sampling Rate	1 second to 18 hours	
Battery life	1 year, typical with logging intervals greater than 1 minute and normally open contacts 2 AA (user replaceable)	
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)	
Weight	149 g (5.26 oz)	
Size	11.4 x 6.3 x 3.3 cm (4.5 x 2.5 x 1.3 inches)	
Measurements logged	AC Current (A), AC Voltage (V), Amp Hour (Ah), Event, Kilowatt Hours (kWh), Kilowatts (kW), Motor On/Off, Power Factor (PF), Pulse Input, Runtime, Volt-Amp Reactive (VAR), Volt-Amp Reactive Hour (VARh), Volt-Amps (VA), Watt Hours (Wh), Watts (W)	

Ordering Information

Logger

Logger	Part Number	Price	Options	Part Number	Price
HOBO UX120 Pulse Logger (standard memory)	UX120-017	\$195	KWh	T-WNB-3Y-208	\$229
HOBO UX120 Pulse Logger (expanded memory)	UX120-017M	\$295	WattNode Wye config 208/240	T-WNB-3Y-208P	\$280
			WattNode Wye 208/240 opt P3	T-WNB-3D-240	\$269
			WattNode Delta/Wye config 208/240	T-WNB-3D-480	\$269
			WattNode Delta/Wye config 480	A-WNB-LEADSET	\$70
			"B" Series Voltage Lead Set	T-VER-8051-300	\$642
			Veris 1-phase, 300 Amp	T-VER-8053-800	\$849
			Veris 3-phase, 800 Amp		

Software

HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
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Optional Communications

HOBO U-Shuttle*	U-DT-1	\$260	Water Flow	T-MINOL-130	\$105
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Sensors

E50B2 Power & Energy Meter	T-VER-E50B2	\$599	Motor on/off	CSV-A8	\$89
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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

Accessories

For HOBO UX120 Pulse Logger		
Spare terminal blocks	A-UX120-TERM-BLOCK	\$9
For E50B2 Power & Energy Meter		
Single phase fuse kit	T-VER-AH02	\$80
Wiring kit	A-E50B2-LEADSET	\$37

Prices subject to change

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



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(435) 755-0774
<http://www.inmtn.com>
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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
- CO₂
- 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

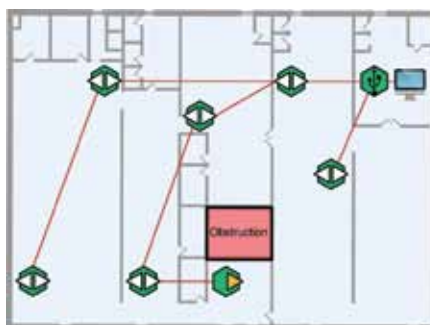
HOBO data nodes, routers, and receiver all work together as a system to provide reliable, accurate real-time information at a single location. Whether you are a warehouse manager looking to keep a close eye on temperature and humidity conditions, a facility manager looking at indoor air quality, or a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

Network Scalability

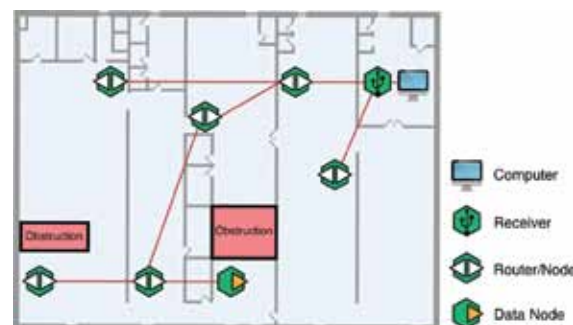
HOBO ZW wireless networks are scalable, enabling you to easily add or remove measurement points over time to your existing network. By using routers you can hop data across rooms, partitions and floor levels and redirect it to the receiver. This expands the network reach and improves data transfer reliability. 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

- Computer
- Receiver
- Router/Node
- Data Node

HOBO ZW Series System Components		
Data Node	Router	Receiver
<ul style="list-style-type: none"> Battery powered wireless data node records data measured by internal and external sensors Can function as dual purpose Data/Router node when AC powered 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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.



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Part Number	ZW-RCVR (Receiver)	ZW-001	ZW-003	ZW-005**	ZW-006	ZW-007**	ZW-008	ZW-ROUTER (Router)
	\$199	\$159	\$239	\$289	\$209	\$289	\$209	\$149
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). 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). 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 (± 0.38° 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)	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.



Mounting bracket included with every ZW node.
 * HOBOWare Pro is included with the cost of the ZW Receiver.
 **External T/RH cables included



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 (435) 755-0774
www.inmtn.com

Ordering Information

Data Loggers

Receiver & HOBOWare Pro Software	ZW-RCVR	\$199
Router only	ZW-ROUTER	\$149
Integrated Temperature	ZW-001	\$159
Integrated Temperature/RH	ZW-003	\$239
External- T/RH, (1) analog, (1) pulse	ZW-005	\$289
External- (4) analog	ZW-006	\$209
External- T/RH, (2) analog	ZW-007	\$289
External- (2) analog, (2) pulse	ZW-008	\$209

E50B2 Power & Energy Meter

T-VER-E50B2	\$599
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(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	\$229
WattNode Wye 208/240 opt P3	T-WNB-3Y-208P	\$280
WattNode Delta/Wye config 208/240	T-WNB-3D-240	\$269
WattNode Delta/Wye config 480	T-WNB-3D-480	\$269
"B" Series Voltage Lead Set	A-WNB-LEADSET	\$70
Veris 1-phase, 300 Amp	T-VER-8051-300	\$642
Veris 3-phase, 800 Amp	T-VER-8053-800	\$849

kW**

3 Phase, 480V, 100 AMP	T-VER-8044-100	\$815
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Water Flow***

Water Flow Meter	T-MINOL-130	\$105
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Gauge Pressure***†

100 psig	T-ASH-G2-100	\$190
200 psig	T-ASH-G2-200	\$190
500 psig	T-ASH-G2-500	\$190

Differential Air Pressure Transducer***†

0.01-10.0 WC	T-VER-PXU-L	\$220
0.01-10.0 WC	T-VER-PXU-X	\$195

Humidity***†

Duct-Mount RH/Temp	T-VAI-HMD-40Y	\$299
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DC Current***†

0-200 Amp	T-VER-H970-200	\$205
-200 to 200 Amp	T-VER-971BP-200	\$299

Air Velocity Sensor***†

0.15-10 m/s	T-DCI-F900-L-P	\$319
0.15-5 m/s	T-DCI-F900-L-O	\$319
0.15-10 m/s	T-DCI-F900-S-P	\$235
0.15-5 m/s	T-DCI-F900-S-O	\$235

Compressed Air Flow Meter**

1-80 SCFM	T-CDI-5200-10S	\$495
3-350 SCFM	T-CDI-5400-20S	\$629

Volatile Organic Compound (VOC)***†

0-10, 0-100, 0-1000 ppm	T-ION-TVOC	\$2995
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Temperature Sensors

Air/Water/Soil Probe 0.3m (1ft)	TMC1-HD	\$32
Air/Water/Soil Probe 1.8m (6ft)	TMC6-HD	\$35
Air/Water/Soil Probe 6.1m (20ft)	TMC20-HD	\$40
Air/Water/Soil Probe 15.2m (50ft)	TMC50-HD	\$45
Stainless Steel Temp Probe 1.8m (6ft)	TMC6-HC	\$79
Pipe Temp 1.8m (6ft)	TMC6-HE	\$35

Split-core AC Current Sensors

0-20 Amps AC	CTV-A	\$90
0-50 Amps AC	CTV-B	\$90
0-100 Amps AC	CTV-C	\$90
0-200 Amps AC	CTV-D	\$115
0-600 Amps AC	CTV-E	\$115

CO₂**

Telaire CO ₂ /Temp Monitor	TEL-7001	\$465
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AC Voltage Transmitters**

0 - 150 Volts AC	T-CON-ACT-150	\$139
0 - 300 Volts AC	T-CON-ACT-300	\$139

DC Voltage

0 - 2.5 Volts DC	CABLE-2.5-STEREO	\$9
0 - 5 Volts DC	CABLE-ADAP5	\$12
0 - 10 Volts DC	CABLE-ADAP10	\$12

Milliamps

4 - 20mA	CABLE-4-20MA	\$25
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Software

HOBOWare Pro Software (Windows/MAC)	BHW-PRO-CD	Included
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Accessories

Sensor Power Adapter, 12 Volt DC @ 400mA	AC-SENS-1	\$29
Mounting Bracket	ZW-BRACKET	\$12

* 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.

Prices subject to change

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



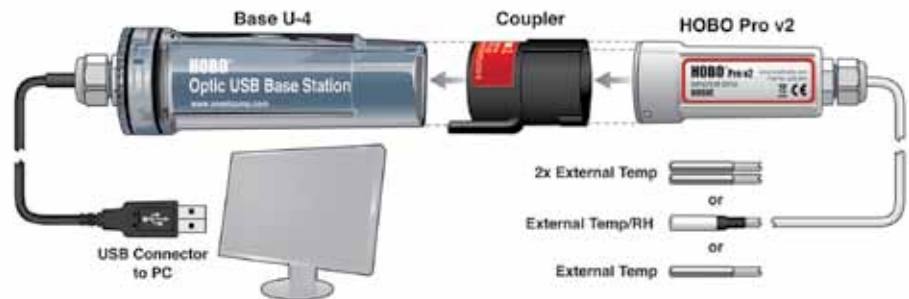
Sales & Support:
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<http://www.inmtn.com>
info@inmtn.com



HOBO Pro v2 data loggers are weatherproof loggers that provide high accuracy temperature and relative humidity measurements in a wide range of outdoor environments.

Key Advantages:

- Weatherproof housing for use in outdoor or condensing environments
- High-accuracy measurements
- Replaceable RH sensor provides superior recovery from condensing conditions
- Small-diameter, external sensor versions for measurements in tight spaces
- Optic USB interface for fast and reliable download



BASE-U-4 or U-DTW-1 is required with this logger (coupler is included).



Memory: 42,000 measurements
 Sample rate: 1 second to 18 hours, fixed rate or multiple logging intervals
 Battery life: 3 years (typical)—user-replaceable

Internal Temperature

Measurement range: -40° to 70°C (-40° to 158°F)
 Accuracy: ± 0.21°C from 0° to 50°C (0.38°F from 32° to 122°F)
 Resolution (12-bit): 0.02°@ 25°C (0.04°@ 77°F)
 Response time: 40 minutes (to 90% in airflow of 1 m/s)





Relative Humidity (RH)

Measurement range: 0 to 100% RH
 Accuracy: ± 2.5% typical, 3.5% maximum, from 10 - 90% RH
 Resolution (12-bit): 0.03% RH
 Response time: U23-001: 10 minutes (90% in airflow of 1 m/s; RH change only)
 U23-002: 5 minutes (90% in airflow of 1 m/s)

External Temperature

Measurement range: U23-002: -40° to 70°C (-40° to 158°F)
 U23-003 & U23-004: -40° to 100°C (-40° to 212°F);
 sensor tip and cable immersion in fresh water up to 50°C (122°F) for one year
 Accuracy: ± 0.2°C from 0° to 50°C (0.36°F from 32° to 122°F)
 Resolution (12-bit): 0.02°@ 25°C (0.04°@ 77°F)
 Response time: U23-002: 5 minutes (to 90% in airflow of 1 m/s)
 U23-003 & U23-004: 3 minutes (to 90% in airflow of 1 m/s)
 30 seconds (to 90% in water)

NIST-traceable temperature accuracy certification service available for all temperature sensors. (See page 72)

HOBO Pro v2 Comparison				
	Internal Temp/RH	External Temp/RH	2x External Temp	Temp/External Temp
				
	U23-001*	U23-002*	U23-003	U23-004
	\$163	\$193	\$163	\$139
Number of Channels	2	2	2	2
Internal Sensors	Temperature	yes	--	yes
	Relative Humidity	yes	--	--
Integrated External Sensors	Temperature	--	yes	yes
	Relative Humidity	--	yes	--
Size	cm	10.2 x 3.8	10.2 x 3.8	10.2 x 3.8
	inches	4.0 x 1.5	4.0 x 1.5	4.0 x 1.5
	probe	--	1 cm (0.38 in) diameter probe on 1.8 m (6 ft) cable	0.5 cm (0.2 in) diameter probe on 1.8 m (6 ft) cable
Weight	grams	57	118	102
	ounces	1.5	3.1	2.7

* Replaceable RH Sensors available. Complete system requires logger, software, and base station or shuttle U-DTW-1.

Ordering Information		
Data Loggers		
HOBO Pro v2 Internal Temp/RH	U23-001	\$163
HOBO Pro v2 External Temp/RH	U23-002	\$193
HOBO Pro v2 2x External Temp	U23-003	\$163
HOBO Pro v2 Internal Temp/External Temp	U23-004	\$139
Software		
HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Optic USB Base Station* with Couplers	BASE-U-4	\$115
Optional Communications and Accessories		
HOBO U-Shuttle (requires Base Station)***	U-DT-1	\$260
HOBO Waterproof Shuttle with Couplers***	U-DTW-1	\$230
Solar Radiation Shield** (U23-001, 004)	RS1	\$79
Assembled Solar Radiation Shield** (U23-001, 004)	M-RSA	\$105
Solar Radiation Shield** U23-002, 003, 004	RS3	\$59
Mounting Clamp (for mounting U23-001 and 004 in RS1 or M-RSA)	U23-RS-CLAMPKIT	\$6
Replaceable RH Sensor for U23-001	HUM-RHPCB-1	\$65
Replaceable RH Sensor for U23-002	HUM-RHPCB-2	\$65
Replaceable RH Sensor Caps for U23-002 (5 pack)	HUM-RHCAP-2	\$48
* HOBO Waterproof Shuttle can also be used as a Base Station (See pages 70-71 for details on Data Shuttles and Base Stations).		
** Accurate temperature and RH measurements in sun require a radiation shield. Use the RS1 or M-RSA for internal sensors and the RS3 for external sensors.		
*** Requires HOBOWare Pro software, see page 52 for details.		
		Prices subject to change



HOBOWare software is available for download via the web. Visit onsetcomp.com for details.



The HOBO RG3 data logging rain gauge is a self-contained rainfall logger that includes an integrated data logger with a high-quality tipping-bucket rain gauge. The RG3's logger has a built-in temperature sensor and is on a cable so it can be used in an optional radiation shield for logging air temperature.

Key Advantages (RG3 and RG3-M models):

- Aluminum housing and 15.4 cm (6.06 in.) collector ring
- Field-proven design
- Logger can be moved into an optional radiation shield for logging air temperature
- Three mounting feet to use on flat, level surfaces (three screws included)
- Side bracket for mast mounting (hose clamps included)
- Self-emptying for continuous rainfall logging

RG3 Data Logging Rain Gauge

\$420

0.2 mm RG3-M
0.01 in RG3
15.2 cm diameter
x 25.7 cm high (6 x 10 in)
1.2 kg (2.5 lbs)

Rainfall

Range: Up to 320 cm (RG3-M), up to 160 in (RG3)
Resolution: 0.2 mm (RG3-M), 0.01 in (RG3)
Time stamp Resolution: 1 second
Calibration Accuracy: ±1.0% (up to 20 mm/hr [RG3-M], 1 in/hr [RG3])
Maximum rainfall rate: 12.7 cm (5 in.) per hour

Temperature

Range: -20° to 70°C (-4° to 158°F)
Accuracy: ±0.47° @ 25°C (±0.85° @ 77°F);
a solar radiation shield is required for temperature measurements
Resolution: 0.10° @ 25°C (0.18° @ 77°F)
Sample rate: 1 second to 18 hours, user-selectable

Memory

16,000 to 23,000 tips when recording rainfall only
25,000 to 30,000 total measurements when recording rainfall and temperature



Mounting the Rain Gauge

The HOBO Rain Gauge has provisions for mounting two ways: surface mounting (Figure 1) and pole mounting (Figure 2). Surface mounting is recommended where possible. Note: Figure 2 has logger deployed outside of rain gauge housing, mounted inside an optional solar radiation shield.

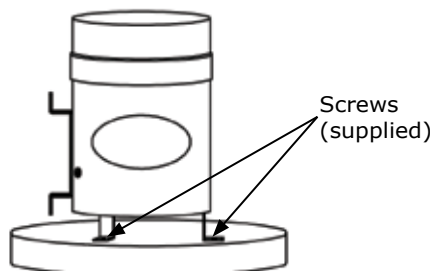


Figure 1: Surface mounting

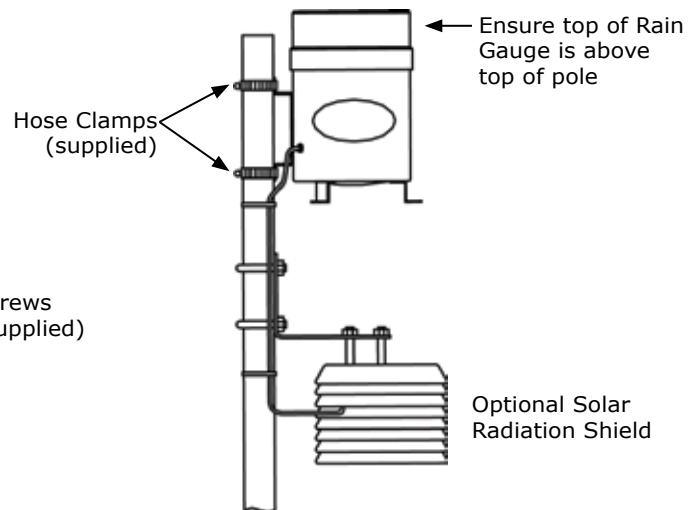


Figure 2: Mast mounting

General Mounting Considerations

- The HOBO Rain Gauge housing **MUST** be mounted in a LEVEL position.
- A clear and unobstructed mounting location is necessary to obtain accurate rainfall readings. Tall objects can interfere with accurate rain measurements. It is recommended that you place the rain gauge away from the obstruction by a distance greater than three times the height of the obstruction. If that is not possible, raise the rain gauge as high as possible to avoid shedding.
- Avoid splashing and puddles. Be sure the gauge is high enough above any surface that rain will not splash into the top of the collector.
- Vibration can significantly degrade accuracy of the tipping bucket mechanism. In windy locations make sure that the bucket will be vibration-free.
- For maximum sensitivity in low-moisture environments you can remove the collector screen. This eliminates water retention on the screen which could evaporate before being measured. The tradeoff is that without the screen, debris can get into the funnel and clog the orifice.

Complete system requires logger, software and base station.

Ordering Information		
Data Logger		
HOBO Rain Gauge	RG3 (0.01 in)	\$420
	RG3-M (0.2 mm)	\$420
Software		
HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Pendant® Base Station (required)	BASE-U-1	\$65
Communications and Accessories		
HOBO U-Shuttle (requires Base Station)*	U-DT-1	\$260
HOBO Waterproof Shuttle with Couplers**	U-DTW-1	\$230
Solar Radiation Shield	M-RSA	\$105
Tripod/Mast Accessories		
1.5 Meter Mast	M-MPB	\$20
2m Tripod with Mast	M-TPB	\$50
1/4 in Stake Kit	M-SKB	\$10
Guy Wire Kit	M-GWA	\$35
1/2 in Stake Kit	M-SKA	\$25
Prices subject to change		
* Requires HOBOWare Pro software. See page 52 for details. HOBOWare includes USB interface cable		
** U-DTW-1 Data Shuttle can be used in place of base station (BASE-U-1)(See pages 70-71 for details).		

HOBOWare software is available for download via the web. Visit onsetcomp.com for details.



Sales & Support:
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<http://www.inmtn.com>
info@inmtn.com



HOBO Pendant Event

\$95 UA-003-64


7.1 x 3.3 x 2.3 cm
(2.8 x 1.3 x 0.9 in)
Cable 1.8 m (6 ft)
50 g (1.7 oz)

The HOBO Pendant Event data logger is ideal for rainfall logging and connects to most standard tipping-bucket rain gauges to determine rainfall rates, times, and duration.

Key Advantages:

- Records tips or momentary contact closures and temperature
- Event-based data storage provides detailed data and efficient memory usage
- Stores over 16,000 tips (160 inches of rainfall with a 0.01 inch rain gauge)
- Includes scaling to inches, millimeters, or other units

Memory: Events only: 16K to 23K events
Events and temperature: 25K to 30K data points
Battery life: 1 year (typical) — user-replaceable

Weatherproof housing tested to NEMA 6 and IP67 

Rain Gauge Tips

External Event
type: Relay contact closure or rain gauge "tips"
Connection: 2 m (6 ft) cable with 2-wire input
Resolution: 1.0 second
Maximum input frequency: 1 Hz

Temperature

Range: -20° to 70°C (-4° to 158°F)
Accuracy: ±0.54°C from 0° to 50°C (±0.97°F from 32° to 122°F); a solar radiation shield is required for temperature measurements
Resolution: 0.10° @ 25°C (0.8° @ 77°F)
Response time: 15 minutes (to 90% in airflow of 1 m/s)
Sample rate: 1 second to 18 hours, user-selectable

NIST-traceable temperature accuracy certification service available. (See page 72).

Complete system requires logger, software and base station.

Ordering Information

Data Logger

HOBO Pendant Event UA-003-64 \$95

Software

HOBOWare Pro Software (Windows/Mac) BHW-PRO-CD \$99
Pendant Base Station BASE-U-1 \$65
HOBOWare includes USB interface cable

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)* U-DT-1 \$230
HOBO Waterproof Shuttle with Couplers*† U-DTW-1 \$230
Solar Radiation Shield M-RSA \$105

* Requires HOBOWare Pro software, see page 52 for details.

Prices subject to change

† U-DTW-1 Data Shuttle can be used in place of base station (BASE-U-1)(See pages 70-71 for details).



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info@inmtn.com



HOBO U12 Industrial Logger
\$215 U12-008
 14.0 x 13.7 x 3.2 cm
 (5.50 x 5.38 x 1.25 in)

The HOBO U12 Industrial data logger is a 4-channel logger that accepts a wide range of external sensors. The rugged enclosure is designed for use in harsh outdoor environments, as well as indoor industrial applications.

Key Advantages:

- Weatherproof enclosure (tested to NEMA 4x and IP67)
- Four channels of external input allow monitoring of multiple parameters

Memory: 43,000 measurements
 Sample rate: 1 second to 18 hours, user-selectable
 Battery life: 1-year (typical)—user-replaceable



External Input

External sensors for temperature, AC current, AC voltage, CO₂, 4-20mA, 0-2.5 VDC
 Input range: 0 to 2.5 volts DC
 Accuracy: ±2mV ±2.5% of absolute reading
 Resolution (12-bit): 0.6 mV
 Output power: 2.5 volts DC at 2 mA, active only during measurements
 Maximum recommended source impedance: 2.5k ohms

Ordering Information

Data Loggers

HOBO U12 Industrial Logger	U12-008	\$85
kW**		
3 Phase, 450V, 100 AMP	T-VER-8044-100	\$815
Gauge Pressure**†		
100 psig	T-ASH-G2-100	\$190
200 psig	T-ASH-G2-200	\$190
500 psig	T-ASH-G2-500	\$190
Differential Air Pressure Transducer**†		
.01-10.0 WC	T-VER-PXU-L	\$220
.01-10.0 WC	T-VER-PXU-X	\$195
Humidity**†		
Duct-Mount RH/Temp	T-VAI-HMD-40Y	\$299
DC Current**†		
0-200 Amp	T-VER-H970-200	\$205
-200 to 200 Amp	T-VER-971BP-200	\$299
Air Velocity Sensor**†		
0.15-10 m/s	T-DCI-F900-L-P	\$319
0.15-5 m/s	T-DCI-F900-L-O	\$319
0.15-10 m/s	T-DCI-F900-S-P	\$235
0.15-5 m/s	T-DCI-F900-S-O	\$235
Compressed Air Flow Meter**		
1-80 SCFM	T-CDI-5200-10S	\$495
3-350 SCFM	T-CDI-5400-20S	\$629
Volatile Organic Compound (VOC)**†		
0-10, 0-100, 0-1000 ppm	T-ION-TVOC	\$2995

Temperature Sensors

Air/Water/Soil Probe 0.3m (1ft)	TMC1-HD	\$32
Air/Water/Soil Probe 1.8m (6ft)	TMC6-HD	\$35
Air/Water/Soil Probe 6.1m (20ft)	TMC20-HD	\$40
Air/Water/Soil Probe 15.2m (50ft)	TMC50-HD	\$45
Stainless Steel Temp Probe 1.8m (6ft)	TMC6-HC	\$79
Pipe Temp 1.8m (6ft)	TMC6-HE	\$35

Split-core AC Current Sensors

0-20 Amps AC	CTV-A	\$90
0-50 Amps AC	CTV-B	\$90
0-100 Amps AC	CTV-C	\$90
0-200 Amps AC	CTV-D	\$115
0-600 Amps AC	CTV-E	\$115

CO₂**

Telaire CO ₂ /Temp Monitor	TEL-7001	\$465
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AC Voltage Transmitters**

0 - 150 Volts AC	T-CON-ACT-150	\$139
0 - 300 Volts AC	T-CON-ACT-300	\$139

DC Voltage

0 - 2.5 Volts DC	CABLE-2.5-STEREO	\$9
0 - 5 Volts DC	CABLE-ADAP5	\$12
0 - 10 Volts DC	CABLE-ADAP10	\$12

Milliamps

4 - 20mA	CABLE-4-20MA	\$25
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Software

HOBOware Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
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Optional Communications

HOBO U-Shuttle*	U-DT-1	\$260
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* Requires HOBOware Pro software, see page 52 for details. HOBOware includes USB interface cable.

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

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

Prices subject to change

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





HOBOnode Wireless sensors combine field-proven HOBOnode reliability with the convenience of wireless.

HOBOnode sensors monitor temperature and soil moisture conditions and wirelessly transmit the data back to your computer. They enable you to view current conditions, receive alarm notifications, and log data on your PC without having to run cables through the field.

HOBOnode sensors are ideal for a broad range of applications, including agricultural research, crop and irrigation management, environmental studies, and greenhouse management.

Key Advantages:

- Sensors transmit current field conditions to your PC
- Accompanying software provides alarm notifications to your cell phone, email, or PC
- All sensor data is logged to your PC
- HOBOnode Repeaters can be easily added to extend range
- Integrated solar panels keep batteries charged

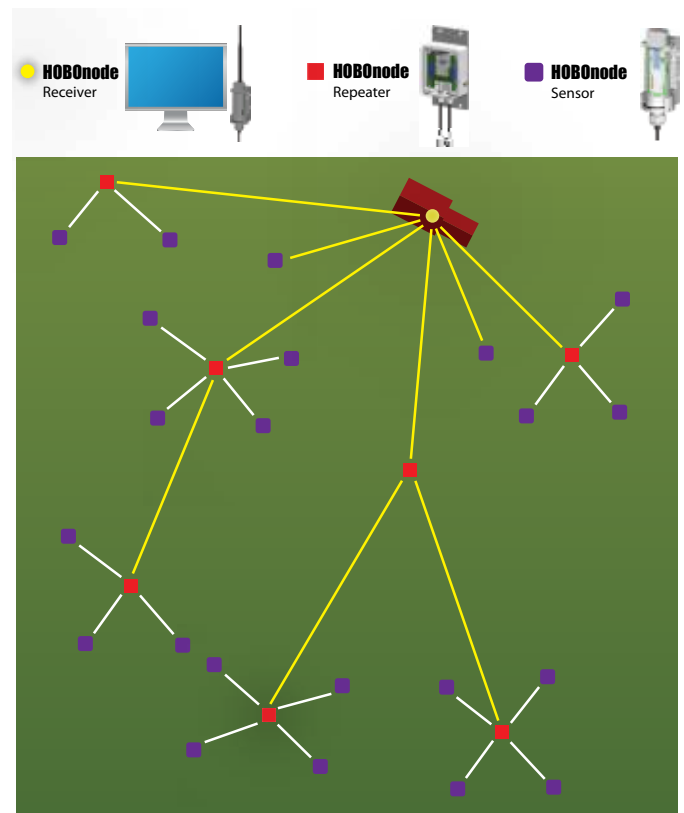
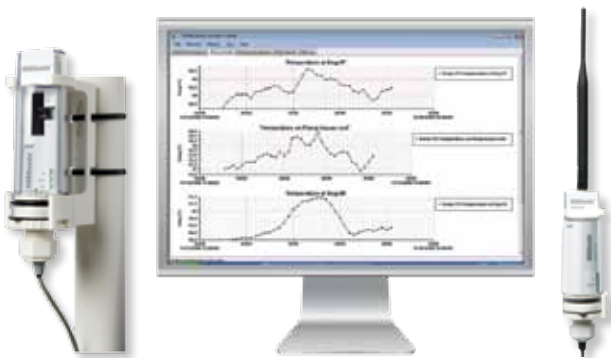
For technical specifications and ordering information, please see page 31.



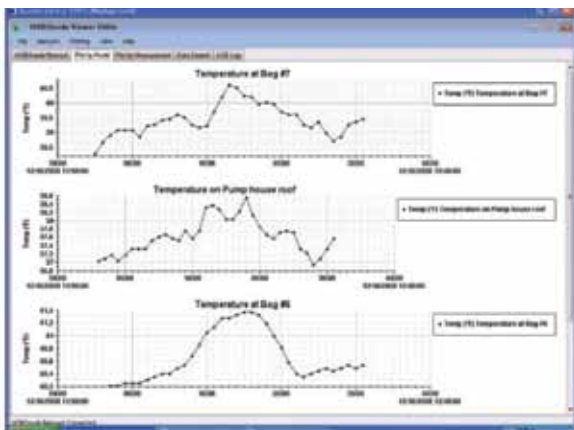
Fast, Easy Deployment

The HOBOnode sensors' compact, integrated design makes it easy to deploy them in any type of field location. Sensors can be easily and quickly added to a HOBOnode network when additional data points are needed.

HOBOnode system components include a HOBOnode Sensor, Receiver, and free Utility Software.



HOBOnode sensors can be used in a variety of network configurations, with and without the use of HOBOnode Repeaters as shown in the above topology.



The HOBOnode Viewer Utility, which provides sensor set up, readout, and displays real-time graphs of temperature and soil moisture conditions. (The HOBOnode Viewer is a free download).

Real-time Monitoring

The system can also be configured to provide alarm notifications via cell phone or email, as well as audible alarms, when field conditions exceed set thresholds. Data can be exported for use in HOBOWare Pro, spreadsheets, and other programs.

HOBOnode Network

In many monitoring applications, it's important to have a complete network of sensors that can collect data from various locations throughout a site. HOBOnode sensors make it easy and affordable to set up a network, and add sensors when additional data points are needed.



HOBOnode Frost Alarm Starter System \$389 W-SYS-FR

- Protect your crops from frost with our HOBOnode Frost Alarm System.
- Get instant notifications sent to your cell phone, email, or PC when frost occurs.
- View real-time field conditions during frost events.
- Starter system includes HOBOnode Temperature and HOBOnode Receiver.



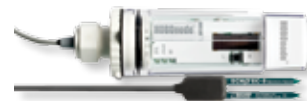
Up to 50 HOBOnode sensors can be used in a network.

Wireless/Weatherproof

<p>IEI Monitoring & Control Systems</p>	<p>Sales & Support: (435) 755-0774 http://www.inmtn.com info@inmtn.com</p>
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Temperature Sensor




Soil Moisture Sensor

Specifications

Part number	W-TMB	W-SMC
	\$179	\$230
Measurement Range	-40° to 100° C (-40° to 212° F)	0 to 1.00 m ³ /m ³ (0 to 100%) volumetric water content
Accuracy	± 0.21° from 0° to 50° C (± 0.38°F from 32° to 122°F)	± 3.1% (0.031) m ³ /m ³ in most soils, up to 8 ds/m
Resolution	0.025° at 25° C (0.045° F at 77° F)	0.07% (0.0007) m ³ /m ³
Response Time	3 minutes in air moving 1m/s 30 seconds in water	-
Sample Rate	1 reading per minute	
Battery Life	1 year typical without solar charging; 3 years typical with solar charging	
Size	16.5 cm x 5 cm; 3.7 m cable (6.5 in x 2 in; 12 ft cable to sensor)	16.5 cm x 5 cm; 5 m cable (6.5 in x 2 in; 16 ft cable to sensor)
Transmission Range	HOBOnode sensor to Receiver or Repeater: 300 m (1000 ft) with clear line-of-sight Repeater to Receiver or Repeater: 1.6 km (1 mile) with clear line-of-sight Note: obstructions such as vegetation or walls will reduce range significantly	
Wireless Standard	Based on IEEE 802.15.4, 2.4 GHz ISM band (license free worldwide)	
Environmental Rating	HOBOnodes and Receiver: NEMA 6P, IP68 Temperature sensor probe is rated for 1-year immersion in fresh water ≤ 50° C (122° F) Repeater: NEMA 4X	
HOBOnode Sensors and Repeaters Standard Operating Range	-20° to 50° C (-4° to 122° F)	
HOBOnode Sensors and Repeaters Operating Range with Optional Lithium Batteries	-40° to 50° C (-40° to 122° F)	
HOBOnode Receiver Operating Range	-40° to 50° C (-40° to 122° F)	
HOBOnode Receiver Communication to PC	1.8 m (6 ft) USB cable (can be extended with optional extension cable.)	
Maximum number of HOBOnode Sensors & Repeaters	50	
Maximum number of Repeaters in a series	4	
Repeater Battery Life	1 year typical without solar charging (6 months with >25 HOBOnodes) 2 years typical with solar charging	
Repeater Dimensions	43 cm (17 in) omni-directional antenna 30 cm x 40 cm (12 in x 16 in) directional antenna 8.9 x 11.4 x 5.4 cm (3.5 x 4.5 x 2.2 in) enclosure	

Wireless/Weatherproof



Sales & Support:
 (435) 755-0774
<http://www.inmtn.com>
info@inmtn.com



HOBOnode Wireless Temperature Sensor
\$179 W-TMB
 16.5 cm x 5 cm
 (6.5 x 2 in)
 Cable 3.7 m (12 ft)

- Measurement range is -40° to 100° C (-40° to 212° F)
- 1 reading per minute. Temperature probe can be used in air, soil or water.
- Can run for multiple years on solar power without having to replace batteries
- Transmission range: HOBOnode sensor to receiver: 300 m (1000 ft) with clear line of sight; any obstructions such as vegetation or walls will reduce this range significantly.



HOBOnode Wireless Soil Moisture Sensor
\$230 W-SMC
 16.5 cm x 5 cm
 (6.5 x 2 in)
 Cable 5 m (16 ft)

- 0 to 100% volumetric water content (m³/m³)
- 1 reading per minute
- Suitable for use in a wide variety of soils
- Can run for multiple years on solar power without having to replace batteries
- Transmission range: HOBOnode sensor to receiver: 300 m (1000 ft) with clear line of sight; any obstructions such as vegetation or walls will reduce this range significantly.



HOBOnode Receiver
\$220 W-RCVR-USB
 16.5 cm x 5 cm
 (6.5 x 2 in)
 Cable 1.8 m (6 ft)

- Receiver communication to PC: 1.8 m (6 ft) USB cable (Optional extension cables available)



HOBOnode Repeater
\$315 W-REPEATER
 (3.5 x 5.5 in) enclosure
 17 in omni-directional antenna
 (12 in x 16 in) directional antenna

- Transmission range: repeater to receiver or repeater: 1.6 km (1 mile) with clear line of sight; any obstructions such as vegetation or walls will reduce this range significantly.
- Mast mounting kit included

Note: This repeater is not CE compliant

Note: For deployment in open fields, the mast for W-REPEATER must be grounded using grounding kit (M-GKA) or equivalent.

Ordering Information

HOBOnode Sensors

HOBOnode Wireless Temperature Sensor ***	W-TMB	\$179
HOBOnode Wireless Soil Moisture Sensor	W-SMC	\$230
HOBOnode Receiver	W-RCVR-USB	\$220
HOBOnode Repeater	W-REPEATER	\$315
HOBOnode Wireless Frost Alarm Starter System (Includes temperature sensor, receiver, and software)	W-SYS-FR	\$389

Software

HOBOnode Viewer Utility Software
 (compatible with Windows 7, XP, Vista) Free download at onsetcomp.com

Accessories

Solar Radiation Shield	RS3	\$59
Lithium AAA-2 pack (For HOBOnode sensor and repeater operation below -20°C - Lithium batteries do not support solar recharging feature)	HRB-LI-AAA	\$10
Rechargeable replacement batteries (For the HOBOnode Sensors, Repeater, and Receiver)	HRB-RCH-AAA	\$6
USB active extension cable - 16 ft (Extension cable for use with HOBOnode Receiver only. Up to 5 of these can be used per Receiver.)	CABLE-USB-EXT	\$24

Tripod/Mast Accessories

Guy Wire Kit*	M-GWA	\$40
1/2 in Stake Kit*	M-SKA	\$29
2m Tripod with Mast**	M-TPB	\$55
1/4 in Stake Kit**	M-SKB	\$11
Grounding Kit	M-GKA	\$45

* Recommended for securing mounting poles in windy locations

** Recommended for the HOBOnode Repeater

*** Accurate temperature measurements in sunlight require a radiation shield.

We recommend 2.4 m x 3 cm (8 ft x 1¼ in) Schedule 40 PVC pipe for mounting the HOBOnode Sensors.
 (purchase through local building supply store)

Prices subject to change





HOBO Pendant data loggers are economical, weatherproof and waterproof temperature data loggers designed for a variety of short and long-term monitoring applications.

Key Advantages:

- Low-cost temperature, light intensity, and acceleration loggers
- Waterproof housing for wet or underwater use
- Data readout in less than 30 seconds via fast Optic USB interface



BASE-U-1 is required with these loggers

Weatherproof housing tested to NEMA 6 and IP67

HOBO Pendant Loggers

Memory: UA-001-08 — 6,500 temperature measurements
 UA-001-64 — 52,000 temperature measurements
 UA-002-08 — 3,500 temperature & light measurements
 UA-002-64 — 28,000 temperature & light measurements
 Sample rate: 1 second to 18 hours, user-selectable
 Battery life: 1-year (typical)—user-replaceable
 Water Depth Rating: 30m from -20 to 20°C (100' from -4° to 68°F) CE

Temperature

Measurement range: -20° to 70°C (-4° to 158°F) in air
 -20° to 50°C (-4° to 122°F) in water
 Accuracy: ± 0.54°C from 0° to 50°C (0.97°F from 32° to 122°F)
 Resolution (10-bit): 0.1°@ 25°C (0.2°@ 77°F)
 Response Time: 15 minutes (to 90% in airflow of 1 m/s)
 5 minutes (to 90% in water)

NIST-traceable temperature accuracy certification available. (See page 72).

Light Intensity

UA-002-08 & UA-002-64 only
 Designed for general purpose measurement of relative light levels
 Range: 0-323,000 lumens/m² [0-30,000 footcandles (lumens/ft²)]

HOBO Pendant G

Memory: UA-004-64 — 64,000 1-axis measurement
 — 32,000 2-axes measurements
 — 21,333 3-axes measurements
 Sample rate: 100 per second (100 Hz) to 18 hours, user-selectable
 Battery life: 1-year (typical)—user-replaceable
 Operating range: -20° to 70°C (-4° to 158°F) in air
 -20° to 50°C (-4° to 122°F) in water CE






Acceleration

Measurement range: ± 3 G
 Accuracy: ±2.5% FS @ 25°C (77°F)—Factory-calibrated
 Resolution (8-bit): 0.02 G

Tilt/Motion


Measurement range: 0° to 180° from vertical
 Accuracy: ±4.3° @ 90° to ±22.3° @ 0° and 180°
 Resolution (8-bit): ±4.3° @ 90° to ±13° @ 0° and 180°



HOBO Pendant Comparison						
		Temperature w/ Alarm Logger	Temperature w/ Alarm Logger	Temperature/ Light Logger	Temperature/ Light Logger	Acceleration/ Tilt/Motion
						
		UA-001-08	UA-001-64	UA-002-08	UA-002-64	UA-004-64
		\$42	\$59	\$42	\$59	\$75
Number of Channels		1	1	2	2	3
Internal Sensors	Temperature	yes	yes	yes	yes	--
	Light Intensity	--	--	yes	yes	--
	Acceleration	--	--	--	--	yes
Size	cm	5.8 x 3.3 x 2.3	5.8 x 3.3 x 2.3	5.8 x 3.3 x 2.3	5.8 x 3.3 x 2.3	5.8 x 3.3 x 2.3
	inches	2.3 x 1.3 x 0.9	2.3 x 1.3 x 0.9	2.3 x 1.3 x 0.9	2.3 x 1.3 x 0.9	2.3 x 1.3 x 0.9
Hole in mounting bail	mm	3.2	3.2	3.2	3.2	3.2
	inches	0.13	0.13	0.13	0.13	0.13
Weight	grams	18	18	18	18	18
	ounces	0.6	0.6	0.6	0.6	0.6

Complete system requires logger, software and base station or shuttle.

Ordering Information		
Data Loggers		
HOBO Pendant Temperature w/Alarm, 8k	UA-001-08	\$42
HOBO Pendant Temperature w/Alarm, 64k	UA-001-64	\$59
HOBO Pendant Temperature w/Light, 8k	UA-002-08	\$42
HOBO Pendant Temperature w/Light, 64k	UA-002-64	\$59
HOBO Pendant Acceleration/Tilt/Motion	UA-004-64	\$75
Software		
HOBOware Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Pendant Base Station**	BASE-U-1	\$65
Optional Communications and Accessories		
HOBO U-Shuttle (requires Base Station)*	U-DT-1	\$260
HOBO Waterproof Shuttle with Couplers*	U-DTW-1	\$230
Solar Radiation Shield***	M-RSA	\$105
* Requires HOBOware Pro software. See page 52 for details.		
** HOBO Waterproof Shuttle or Optic USB Base Station (BASE-U-4) may be used instead of the Pendant Base Station (BASE-U-1) (See pages 70-71 for details).		
*** Accurate temperature measurements in sunlight require a radiation shield.		Prices subject to change
HOBOware includes USB interface cable		



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Data Loggers/ Waterproof



HOBO Water Temp Pro v2 Logger

\$123 U22-001

11.4 x 3.0 cm
(4.5 x 1.19 in)
hole in mounting bail
6.3 mm (0.25 in)
42 g (1.5 oz)



**Protective Boot
BOOT-xxx**

The HOBO Water Temp Pro v2 data logger features 12-bit resolution and a precision sensor for $\pm 0.2^{\circ}\text{C}$ accuracy over a wide temperature range. Designed with a durable, streamlined case for extended deployment in fresh or salt water, the Water Temp Pro v2 is equipped with an Optic USB interface for data offload in the field, even when the data logger is wet.

Key Advantages:

- Research-grade measurements at an affordable price
- Waterproof to 120 meters (400 feet)
- Data readout in less than 30 seconds via fast Optic USB interface

Memory: 42,000 measurements
Sample rate: 1 second to 18 hours, fixed - or multiple-rate up to 8 user-defined sampling intervals
Battery life: 6 years (typical) — factory-replaceable



Measurement range: -40° to 70°C (-40° to 158°F) in air
 -40° to 50°C (-40° to 122°F) in water
Accuracy: $\pm 0.21^{\circ}\text{C}$ from 0° to 50°C (0.38°F from 32° to 122°F)
Resolution (12-bit): 0.02° @ 25°C (0.04° @ 77°F)
Response time: 18 minutes (to 90% in airflow of 1 m/s)
5 minutes (to 90% in water)

NIST-traceable temperature accuracy certification service available. (See page 72).



BASE-U-4 or U-DTW-1 is required with this logger (coupler is included)

Complete system requires logger, software and base station or waterproof shuttle.

Ordering Information

Data Logger

HOBOware Water Temp Prov2 Logger U22-001 \$123

Software

HOBOware Pro Software (Windows/Mac) BHW-PRO-CD \$99
Optic USB Base Station with Couplers** BASE-U-4 \$115

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)* U-DT-1 \$260
HOBO Waterproof Shuttle with Couplers**, * U-DTW-1 \$230
Protective Boot, black BOOT-BLK \$19
Protective Boot, white BOOT-WHT \$19
Solar Radiation Shield*** M-RSA \$105

* Requires HOBOware Pro software. See page 52 for details

** HOBO Waterproof Shuttle can also be used as a Base Station. (See pages 70-71 for details on Data Shuttles and Base Stations)

*** Accurate air temperature measurement in sunlight requires a radiation shield. **Prices subject to change**
HOBOware includes USB interface cable



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



Tidbit v2 Temp Logger

\$133 UTBI-001

3.0 x 4.1 x 1.7 cm
(1.2 x 1.6 x 0.65 in)
hole in mounting bail 4.6 mm (0.19 in)
19.5 g (0.68 oz)



Protective Boot

5 for \$25
BOOT-TIDBIT-WH




Protective Boot

5 for \$25
BOOT-TIDBIT-BK

Onset's smallest data logger, the Tidbit v2, has 12-bit resolution and a precision sensor for $\pm 0.2^{\circ}\text{C}$ accuracy over a wide temperature range. It is waterproof to 300m (1000 ft) and can be used in a wide range of water temperature monitoring applications.

Key Advantages:

- Onset's smallest temperature logger
- Waterproof to 300 meters (1,000 feet)
- Data readout in less than 30 seconds via fast, optical USB interface

Memory: 42,000 measurements
Sample rate: 1 second to 18 hours, fixed - or multiple-rate up to 8 user-defined sampling intervals
Battery life: 5 years (typical) — non-replaceable 

Measurement range: -20° to 70°C (-4° to 158°F) in air
 -20° to 30°C (-4° to 86°F) in water
Accuracy: $\pm 0.21^{\circ}\text{C}$ from 0° to 50°C (0.38°F from 32° to 122°F)
Resolution (12-bit): 0.02° @ 25°C (0.04° @ 77°F)
Response time: 20 minutes (to 90% in airflow of 1 m/s)
5 minutes (to 90% in water)

NIST-traceable temperature accuracy certification service available. (See page 72).



BASE-U-4 or U-DTW-1 is required with this logger (coupler is included)

Complete system requires logger, software and base station or waterproof shuttle.

Ordering Information

Data Logger

HOBO Tidbit v2 Temp	UTBI-001	\$133
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Software

HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Optic USB Base Station with Couplers*	BASE-U-4	\$115

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)	U-DT-1	\$260
HOBO Waterproof Shuttle with Couplers*	U-DTW-1	\$230
Protective Boot 5-pack, black	BOOT-TIDBIT-BK	\$25
Protective Boot 5-pack, white	BOOT-TIDBIT-WH	\$25
Solar Radiation Shield**	M-RSA	\$105

* HOBO Waterproof Shuttle can also be used as a Base Station.
(See pages 70-71 for details on Data Shuttles and Base Stations)

Requires HOBOWare Pro software. See page 52 for details

** Accurate air temperature measurement in sunlight requires a radiation shield.
HOBOWare includes USB interface cable

Prices subject to change

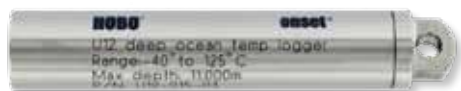
HOBOWare software is available for download via the web. Visit onsetcomp.com for details.



The HOBO U12 Deep Ocean temperature data logger is designed to track water temperatures in the most extreme ocean environments. Built with a virtually indestructible Titanium housing, the logger can withstand corrosive salt water and exposure to extreme temperature and pressure at depths of up to 11,000 meters.

Key Advantages:

- Withstands depths up to 11,000m (36,080 ft)
- Extended temperature range: -40 to 125C
- Fast readout via direct USB interface
- Titanium housing for use in saltwater



HOBO U12 Titanium Deep Ocean Temperature Logger

\$750 U12-015-03

- 114 x 20.6 mm diameter (4.5 x 0.81 in diameter)
- 6.4mm (0.25 in) mounting hole
- 105 g (3.7 oz)

Memory: 43,000 measurements
 Sample rate: 1 second to 18 hours, user-selectable
 Battery life: 3-years (typical)—factory-replaceable



Temperature Measurement


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)
 Resolution 12 bit: 0.02°@ 25°C (0.04°@ 77°F)
 Response time: <4 minutes (to 90% in water)

NIST-traceable temperature accuracy certification available. (See page 72).

Complete system requires logger and software.

Ordering Information		
Data Loggers		
HOBO U12 Deep Ocean Temperature Logger	U12-015-03	\$750
Software		
HOBOware Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Optional Communications		
HOBO U-Shuttle*	U-DT-1	\$260
*Requires HOBOware Pro software, see page 52 for details. HOBOware includes USB interface cable		Prices subject to change

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



Sales & Support:
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The Deluxe Kit

HOBO Water Level Kits combine high-accuracy water level measurements with out-of-the-box convenience. The Deluxe Kit includes a carrying case, two HOBO Water Level Loggers (one 13' and one 13', 30' or 100'), HOBOware Pro software, and a HOBO Waterproof Data Shuttle. The Starter Kit includes a HOBO Water Level Logger, HOBOware Pro Software, and an Optic USB Base Station. Available in 13', 30', and 100' depths.

Key Advantages:


- 0.01 foot accuracy
- No bulky vent tubes
- Convenient connector-free data offload
- Fully-sealed housing ensures years of trouble-free operation



The Starter Kit

Data Loggers/ Waterproof

Ordering Information						
Price	\$604	\$1,137	\$604	\$1,137	\$604	\$1,137
Product Number	KIT-S-U20-04	KIT-D-U20-04	KIT-S-U20-01	KIT-D-U20-01	KIT-S-U20-02	KIT-D-U20-02
HOBO Loggers Range	U20-001-04 0-13'	U20-001-04 Kit includes two 0-13'	U20-001-01 0-30'	U20-001-01 Kit includes one 0-13' and one 0-30'	U20-001-02 0-100'	U20-001-02 Kit includes one 0-13' and one 0-100'
Communications	BASE-U-4 base station	U-DTW-1 waterproof shuttle	BASE-U-4 base station	U-DTW-1 waterproof shuttle	BASE-U-4 base station	U-DTW-1 waterproof shuttle
Carrying Case	Not included	Included	Not included	Included	Not included	Included
HOBOware Pro Software	BHW-PRO-CD (included)					
Logger Housing	Stainless steel					
Prices subject to change						



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HOBO Water Level Logger

\$495-\$795 U20-001-xx

2.46 cm diameter x 15 cm (0.97 x 5.9 in)

hole in mounting bail 6.3 mm (0.25 in)

Stainless: 210 g (7.4 oz)

Titanium: 140 g (4.8 oz)*

HOBO Water Level data loggers offer high accuracy at an affordable price, with no cumbersome vent tubes or desiccants to maintain. These data loggers are ideal for recording water levels and temperatures in shallow wells, streams, lakes and freshwater wetlands.

Key Advantages:

- Available in 4 depth ranges
- No-vent-tube design for easy and reliable deployment
- Available in stainless steel and titanium* versions
- Durable ceramic pressure sensor for reliable performance
- Calibration certificate included

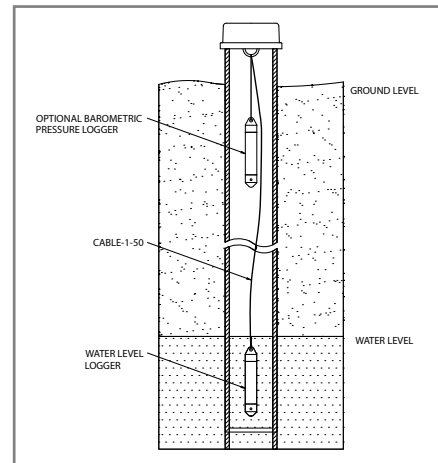
Memory: 21,700 combined pressure and temperature measurements

Sample rate: 1 second to 18 hours, fixed- or multiple-rate up to 8 user-defined sampling intervals

Battery life: 5 years (typical) — factory-replaceable



HOBOWare software provides easy conversion to accurate water level readings, fully-compensated for barometric pressure, temperature and water density.



Simple wireline mounting makes it easy to hang logger in wells, hidden from vandals, with no vent cables to worry about.

- Includes calibration certificate of accuracy in accordance with NIST-traceable standards at three pressure points distributed throughout the range.
- Fully-sealed housing ensures many years of trouble-free operation.
- Suitable for deployment in water or air; case materials resistant to fuels, solvents and lubricants.
- Use either an extra HOBO Water Level Logger, a HOBO U30 monitoring system (see page 44), or import ASCII barometric data for barometric compensation (typically one barometric data set can be used with all water level loggers in that area).

NIST-Traceable temperature accuracy certification service available (See page 72).

****Titanium version recommended for saltwater deployment.***

HOBO Water Level Specifications

Model	Range**	Factory Calibrated Range (0° to 40°C; 32° to 104°F)	Water Level Accuracy (Typical Error)***	Resolution	Burst Pressure**
U20-001-04 U20-001-04-Ti	0-4 m (0-13 ft) 0-145 kPa (0-21 psia)	69 to 145 kPa (10-21 psia)	±0.3 cm (0.01 ft) (±0.075% FS)	0.14 cm (0.005 ft)	310 kPa (45 psia) 18 m (60 ft) depth
U20-001-01 U20-001-01-Ti	0-9 m (0-30 ft) 0-207 kPa (0-30 psia)	69 to 207 kPa (10-30 psia)	±0.5 cm (0.015 ft) (±0.05% FS)	0.21 cm (0.007 ft)	310 kPa (45 psia) 18 m (60 ft) depth
U20-001-02 U20-001-02-Ti	0-30 m (0-100 ft) 0-400 kPa (0-58 psia)	69 to 400 kPa (10-58 psia)	±1.5 cm (0.05 ft) (±0.05% FS)	0.41 cm (0.013 ft)	500 kPa (72.5 psia) 40.8 m (134 ft) depth
U20-001-03 U20-001-03-Ti	0-76 m (0-250 ft) 0-850 kPa (0-123 psia)	69 to 850 kPa (10-123 psia)	±3.8 cm (0.125 ft) (±0.05% FS)	0.87 cm (0.028 ft)	1200 kPa (174 psia) 112 m (368 ft) depth

Temperature Specifications (all models)

Model	Range	Accuracy	Resolution (10-bit)	Response Time
All models	-20° to 50°C (-4° to 122°F)	±0.37° @ 20°C (0.67° @ 68°F) ±0.5° over -5° to 50°C (±0.9° over 23° to 122°F)	0.1° @ 20°C (0.18° @ 68°F) 0.5° over -5° to 50°C (0.9° over 23° to 122°F)	3.5 minutes (to 90% in water)

** Depth range specifications are nominal values based on using the logger at sea level.

*** Using reference water level measurement and Barometric Compensation Assistant (included with HOBOWare).

Complete system requires logger, software, and base station.

Ordering Information

Data Loggers

Stainless steel ranges:	0-30'	U20-001-01	\$495
	0-100'	U20-001-02	\$495
	0-250'	U20-001-03	\$495
	0-13'	U20-001-04	\$495

Titanium	0-30'	U20-001-01-TI	\$595
	0-13'	U20-001-04-TI	\$595

Software

HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Optic USB Base Station with Couplers*	BASE-U-4	\$115

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)*	U-DT-1	\$260
HOBO Waterproof Shuttle with Couplers**	U-DTW-1	\$230
1/16 in Teflon-coated stainless steel cable:		
50 feet	CABLE-1-50	\$59
300 feet	CABLE-1-300	\$260
Crimp Sleeve for cables (12-pack)	CABLE-1-CRIMP	\$29
Protective Housing	HOUSING-U2X	\$38
Water Level Logger Carrying Case	U20-CASE-1	\$29

* Requires HOBOWare Pro software, see page 52 for details.

** HOBO Waterproof Shuttle can also be used as a Base Station.
(See pages 70-71 for details on Data Shuttles and Base Stations).

HOBOWare includes USB interface cable.

Prices subject to change



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HOBO U24 Conductivity Loggers are high-accuracy, cost-effective data loggers for a variety of fresh and saltwater monitoring applications. Ideal for environmental impact studies, stormwater management, and water quality studies, HOBO conductivity loggers are easy to deploy and maintain, and provide 0.1°C temperature accuracy with fast response.

The HOBO U24-001 measures conductivity and temperature in freshwater; the HOBO U24-002 measures conductivity, salinity and temperature in saltwater.



Key Advantages:

- Non-contact capacitive sensor reduces measurement drift
- Easy access to sensor for cleaning and shedding air bubbles
- HOBOWare Pro software provides compensation for fouling using calibration points from the start and end of each deployment
- Optical interface provides high-speed, reliable data offload in wet environments
- Compatible with HOBO Waterproof Shuttle for easy and reliable data retrieval



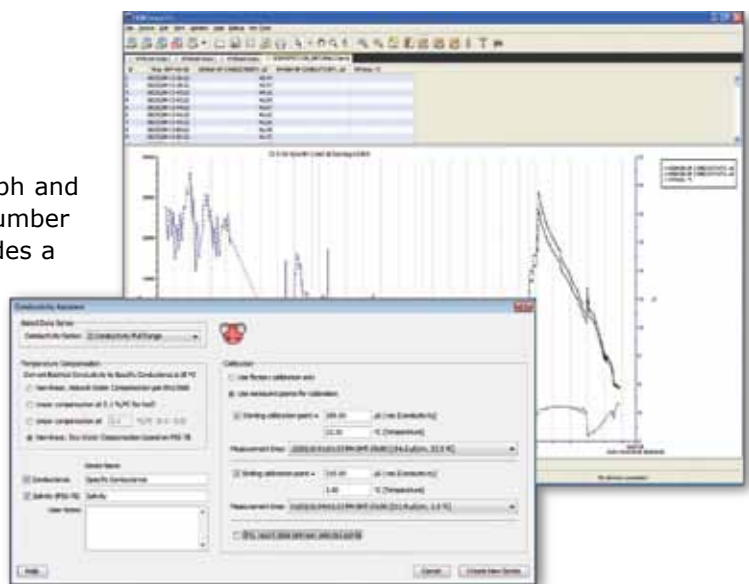
Durable construction, easy maintenance

HOBO Conductivity Loggers feature durable, non-corrosive housings for extended deployment in fresh and saltwater environments. Unlike conductivity loggers that are designed with electrode-based sensors, HOBO Conductivity loggers feature non-contact capacitive sensors that make them less susceptible to sensor degradation and drift. This reduces the frequency of having to visit the field sites to offload data and/or take calibration readings.

These loggers also provide open access to the sensor for easy cleaning and better water flow. This, in turn, provides faster response times and fewer air bubbles. An optical communication interface eliminates the possibility of water-related damage and failures associated with mechanical plug-in connectors.

Powerful software

Onset's HOBOWare Pro software makes it easy to graph and analyze conductivity and salinity data, and offers a number of features that simplify monitoring projects. It provides a choice of methods for easy, accurate conversion of conductivity data to specific conductance, and uses PSS-78 to calculate salinity. HOBOWare Pro also provides a simple approach for drift and fouling compensation using calibration points from the start and end of each deployment. Data from multiple loggers can easily be viewed on a single graph and analyzed.





Conductivity



Conductivity/Salinity

Specifications

Part number	U24-001	U24-002
Price	\$699	\$750
Conductivity Calibrated Measurement Ranges	Low Range: 0 to 1,000 $\mu\text{S/cm}$ Full Range: 0 to 10,000 $\mu\text{S/cm}$	Low Range: 100 to 10,000 $\mu\text{S/cm}$ High Range: 5,000 to 65,000 $\mu\text{S/cm}$
Conductivity Calibrated Range – Temperature Range	5° to 35°C (41° to 95°F)	
Specific Conductance Accuracy (in Calibrated Range)	Low Range: 3% of reading, or 5 $\mu\text{S/cm}$, and Full Range: 3% of reading, or 20 $\mu\text{S/cm}$, whichever is greater, using conductivity assistant and calibration measurements	3% of reading or 50 $\mu\text{S/cm}$, whichever is greater for up to 50,000 $\mu\text{S/cm}$, using Conductivity Assistant and calibration measurements, and up to 10% for up to 65,000 $\mu\text{S/cm}$
Conductivity Resolution	1 $\mu\text{S/cm}$	2 $\mu\text{S/cm}$
Temperature Accuracy (in Calibrated Range)	0.1°C (0.2°F)	
Temperature Resolution	0.01°C (0.02°F)	
Response Time	1 second to 90% of change (in water)	
Measurement and Operating Range	0° to 36°C (32° to 97°F) -non-freezing	-2° to 36°C (28° to 97°F) -non-freezing
Memory	18,500 temperature and conductivity measurements when using one conductivity range; 14,400 sets of measurements when using both conductivity ranges (64kbytes)	
Sample rate	1 second to 18 hrs, fixed or multiple-rate sampling with up to 8 user-defined sampling intervals	
Clock Accuracy	± 1 minute per month	
Battery	3.6 Volt lithium battery	
Battery Life	3 years (at 1 minute logging), typical	
Maximum Depth	70 m (225 ft)	
Weight	193 gm (6.82 ounces), buoyancy in freshwater: -59.8 gm (-2.11 ounces) (it sinks)	
Size	3.18 cm diameter x 16.5 cm, with 6.3 mm mounting hole (1.25" diameter x 6.5", 1/4" hole)	
Wetted Housing Materials	Delrin®, epoxy, stainless steel retaining ring, polypropylene, Buna rubber O-ring, titanium pentoxide. All materials are suitable for long-term use in saltwater	

Complete system requires logger, base station or waterproof shuttle and software.

Ordering Information

Logger

HOBO Conductivity Logger 0 to 10,000 $\mu\text{S/cm}$	U24-001	\$699
HOBO Conductivity Logger 100 to 65,000 $\mu\text{S/cm}$	U24-002	\$750

Software

HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
Optic USB Base Station with Couplers*	BASE-U-4	\$115

Communications

HOBO U-Shuttle (requires Base Station)	U-DT-1	\$260
HOBO Waterproof Shuttle with Couplers	U-DTW-1	\$230






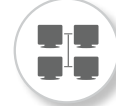
* *HOBO Waterproof Shuttle can also be used as a Base Station. (See pages 70-71 for details on Data Shuttles and Base Stations).*

Accessories

Protective Housing	HOUSING-U2X	\$38
1/16 in Teflon-coated stainless steel cable:		
50 feet	CABLE-1-50	\$59
300 feet	CABLE-1-300	\$260
Crimp Sleeve for cables (12-pack)	CABLE-1-CRIMP	\$29


HOBOWare includes USB interface cable.

HOBOWare software is available for download via the web. Visit onsetcomp.com for details.

Comparison Chart						
	HOBO Micro Station  H21-002	HOBO U30 Remote Monitoring System			HOBO U30 NRC  U30-NRC	HOBO Energy Logger  H22-001
		GSM  U30-GSM	Wi-Fi  U30-WIF	Ethernet  U30-ETH		
	\$220	\$850	\$770	\$675	\$399	\$315
Remote Communications	No	Yes	Yes	Yes	No	No
Internet access to real-time data	No	Yes	Yes	Yes	No	No
Enclosure	Weatherproof	Double weatherproof tamperproof	Double weatherproof tamperproof	Double weatherproof tamperproof	Double weatherproof tamperproof	Indoor
Fully-integrated, expandable communications	No	Yes	Yes	Yes	No	No
* Solar or AC power with rechargeable batteries	No	Yes*	Yes*	Yes*	Yes*	AC power option
Optional analog inputs with configurable sensor power	No	2	2	2	2	6
Smart Sensor compatible	Yes	Yes	Yes	Yes	Yes	Yes
# of inputs	4	5 expandable to 15	5 expandable to 15	5 expandable to 15	5 expandable to 15	3 module ports and 6 sensor inputs
USB connectivity	Requires Adapter	Yes	Yes	Yes	Yes	Requires Adapter
Operating Range	- 20° to 50° C standard - 40° to 70° C with optional Lithium batteries	- 20° to 40° C normal operation - 40° to 60° C extended range (limitations)	- 20° to 40° C normal operation - 40° to 60° C extended range (limitations)	- 20° to 40° C normal operation - 40° to 60° C extended range (limitations)	- 20° to 40° C normal operation - 40° to 60° C extended range (limitations)	- 20° to 50° C standard - 40° to 70° C with optional Lithium batteries
Battery Life Without Solar or AC power	1 year (typical) (4AA)	30 days (1hr connection interval)	30 days (1hr connection interval)	30 days (1hr connection interval)	6 months (typical)	1 year (typical) (8AA)
Data Storage Memory:	512,000 kilobytes	Unlimited in HOBOLink	Unlimited in HOBOLink®	Unlimited in HOBOLink	512,000 kilobytes	512,000 kilobytes

* Solar panel or AC adapter purchased separately.

Prices subject to change

 <p>Monitoring & Control Systems</p>	<p>Sales & Support: (435) 755-0774 http://www.inmtn.com info@inmtn.com</p>
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HOBO Micro Station
\$220 H21-002
 8.9 x 11.4 x 5.4 cm
 (3.5 x 4.5 x 2.125 in)
 0.5 kg (1 lb)

The HOBO Micro Station offers reliable monitoring performance at industry-leading prices. Designed for stand-alone data logging applications, the 4-channel HOBO Micro Station accepts Onset's full suite of plug-and-play Smart Sensors, and is battery-powered for up to one year.

Key Advantages:

- Improved weatherproof enclosure for harsh environments
- Compact and low-cost with 4 sensor inputs
- Up to 2 DC voltage or 4-20mA input adapters

Common Specifications

Memory:	512K non-volatile data storage
Logging interval:	1 second to 18 hours, user-selectable
Battery life:	1 year (typical) — up to 10 sensors with 10-minute or longer logging interval
Operating range and battery type:	-20° to 50°C (-4° to 122°F) 4-AA alkaline batteries (standard) -40° to 70°C (-40° to 158°F) 4-AA lithium batteries (optional)
Sensor network cable length:	100 m (328 ft) maximum



HOBO Micro Station Ordering Guide

HOBO Micro Station Logger	H21-002	\$220	Sensor Mounting Accessories (continued)		
HOBO Micro Station Mast Mounting Kit	M-MKA	\$20	Weatherproof Connection Housing		
HOBO Micro Station Grounding Wire	CABLE-HWS-G	\$16	(required for outside connections)	S-EXT-CASE \$21	
<i>(required for Wind Speed/Direction sensor or tripod mounting)</i>			Full Cross Arm	M-CAA \$65	
Smart Sensor Ordering			Half Cross Arm	M-CAB \$45	
Temperature/RH:			<i>(a crossarm is recommended for use with wind sensors)</i>		
2 m cable	S-THB-M002	\$185	Solar Radiation Shield	RS3 \$59	
8 m cable	S-THB-M008	\$195	<i>(for use with temperature and temp/RH sensors)</i>		
Temperature:			Light Sensor Bracket	M-LBB \$29	
2 m cable	S-TMB-M002	\$95	<i>(for mounting PAR and solar radiation sensors on masts or flat vertical surfaces)</i>		
6 m cable	S-TMB-M006	\$105	NDVI Light Sensor Bracket	M-NDVI \$18	
17 m cable	S-TMB-M017	\$120	Light Sensor Level	M-LLA \$35	
Wind Speed/Direction	S-WSET-A	\$560	<i>(recommended for installing PAR and solar radiation sensors)</i>		
Wind Speed	S-WSA-M003	\$239	Tripod/Masts and Accessories		
Wind Direction	S-WDA-M003	\$350	2 m Tripod with Mast		
R.M. Young Wind Sensor Adapters:			<i>(M-SKB recommended)</i>	M-TPB \$55	
Wind Monitor AQ	S-WCB-M003	\$150	Complete 2 Meter Tripod Kit	M-TPB-KIT \$190	
Marine Wind Monitor	S-WCC-M003	\$150	3 m Tripod with Mast		
Wind Sentry	S-WCD-M003	\$150	<i>(M-SKA recommended)</i>	M-TPA \$150	
Wind Alpine	S-WCE-M003	\$150	Complete 3 m Tripod Kit	M-TPA-KIT \$275	
Rain Gauge Aluminum: (.01 in)			1.5 m Mast	M-MPB \$25	
2 m cable	S-RGA-M002	\$420	3 m Mast	M-MPA \$45	
Rain Gauge Aluminum: (0.2 mm)			Guy Wire Kit	M-GWA \$40	
2 m cable	S-RGB-M002	\$420	1/4 in Stake Kit	M-SKB \$11	
Soil Moisture (EC-5)	S-SMC-M005	\$139	1/2 in Stake Kit	M-SKA \$29	
Soil Moisture (10HS)	S-SMD-M005	\$139	Grounding Kit	M-GKA \$45	
Leaf Wetness	S-LWA-M003	\$110	2 m Weatherproof Comm. Cable	CABLE-HWS2 \$30	
PAR	S-LIA-M003	\$220	17 m Weatherproof Comm. Cable	CABLE-HWS17 \$55	
Silicon Pyranometer	S-LIB-M003	\$210	Lithium Batteries, 4 pack	HWSB-LI \$22	
Pulse Input Adapter:			Mast Level	M-MLA \$13	
-Electronic Switch	S-UCC-M00x	\$70	<i>(recommended for installing masts or tripods)</i>		
-Contact Closure	S-UCD-M00x	\$70	Software and Communications		
4-20mA Input Adapter	S-CIA-CM14	\$85	HOBOWare Pro Software	BHW-PRO-CD \$99	
0-5v DC Input Adapter	S-VIA-CM14	\$85	USB-to-Serial-Cable	ADAPT-SER-USB \$49	
Sensor Mounting Accessories			U-Shuttle Data Transporter	U-DT-1 \$260	
Smart Sensor Extension Cables limited to 100 m of total cable length per logger <i>(optional for use individually or combined)</i> .			<i>HOBOWare includes USB interface cable.</i>		
5 m length	S-EXT-M005	\$25	Prices subject to change		
10 m length	S-EXT-M010	\$30			
25 m length	S-EXT-M025	\$45			

See page 57 for additional sensors



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<http://www.inmtn.com>
info@inmtn.com



HOBO U30 systems provide real-time access to data from any web browser. Whether you're tracking climate conditions for field research, or measuring energy usage in a commercial building, HOBO U30 monitoring systems deliver accurate, dependable data right to your desktop via Onset's HOBOLink web-based software (see page 55 for details).

Key Advantages:

- Web-based energy and environmental monitoring
- All electronics are housed within 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
- Works with Onset's E50B2 Power & Energy Meter to measure Power Factor (PF), Reactive Power (VAR), Watt Hours (Wh) and more

Industrial-grade dependability

HOBO U30 Remote Monitoring Systems deliver high accuracy measurements you can count on — in even the harshest environmental conditions. All at a fraction of the cost of competitive solutions.

Incorporating patented technology, all of the system's electronics are housed within a rugged double-weatherproof, tamperproof enclosure. This provides twice the protection and ensures years of reliable monitoring performance.

Fast, easy deployment

Plug-and-play architecture enables



any combination of Smart Sensors to be plugged in without extensive user programming, wiring, or calibration.

Plug in your sensors, connect the battery, and you're streaming real time data!

Learn More:

See specifications on page 45
See pricing on pages 46-47

See page 55 to learn more about HOBOLink, a web-based software platform that provides access to the HOBO U30 Remote Monitoring Systems.

Wide range of measurements

HOBO U30 systems measure and record a wide range of parameters including:

INDOOR ENVIRONMENTAL

- Temperature
- Relative Humidity
- CO₂
- Air Velocity
- VOCs

ENERGY/POWER

- kW & kWh
- Power Factor
- Volt Amp Reactive Hour
- Watt Hours
- Amp Hours
- True Power
- AC/DC Current
- AC/DC Voltage
- Differential Pressure
- Gauge Pressure
- Compressed Air Flow
- Reactive Power
- Volts-Amps
- Amps

WEATHER

- Temp/RH
- Solar Radiation
- PAR
- Rainfall
- Wind Speed & Direction
- Wind Speed
- Soil Moisture
- Barometric Pressure
- Leaf Wetness

An optional analog sensor port provides sensor power with user-selectable warm-up time.

Available models include:

HOBO U30/GSM



- Built-in GSM cellular means no IT road-blocks
- Double weather proof, tamperproof enclosure

Starts at \$850

HOBO U30/Wi-Fi



- Ruggedized hardware, with integrated Wi-Fi
- Get notified of problems via cell phone or email

Starts at \$770

HOBO U30/ETH



- Remote access to real-time data over Ethernet
- Simplifies facility-wide monitoring

Starts at \$675

HOBO U30/NRC



- Fast data offload via direct USB
- Optional analog inputs with sensor excitation

Starts at \$399

Specifications

GSM Wireless Communications	Quad-Band GSM/GPRS 850/900/1800/1900 MHz
Wi-Fi Wireless Communications	2.412 - 2.484 GHz IEEE 802.11 b/g
Ethernet	10Base-T or 100Base-TX (using external RJ45 jack) 256-bit AES Rijndael encryption
Alarm Relay	Can be activated, deactivated or pulsed on user-defined sensor alarms. The relay can be configured as normally open or normally closed, (30V, 1A Max)
Alarm Notification Latency	Logging interval plus 2 to 4 minutes (typical)
Certifications	FCC Certified. Check www.onsetcomp.com for the latest certifications.
Smart-Sensor Inputs	5 or 10
Data Channels	Maximum of 15 (some sensors use more than one data channel)
Sensor Network Cable Length	100 m (328 ft) maximum
Normal Operating Range	-20 to 40°C (-4 to 140°F)
Extended Operating Range	-40 to 60°C (-40 to 140°F) see battery life, Note: the GSM module will not communicate below -30°C (-22°F)
Local Communication	USB
Data Storage Memory	512K bytes local storage in non-volatile flash memory
Operational Indicators	LEDs show status
Logging Interval	1 minute to 18 hours, user-specified
Station-to-Internet Upload Interval	10 minutes minimum, user-specified (depends on HOBOLink data service plan)
Power	An Onset solar panel (1.2w, 3w, 6w) or AC adapter is required
Battery Type	4 Volt, 10 AHR, or 4.5 AHR Rechargeable Sealed Lead Acid
Battery Life	Typical 3-5 years depending upon conditions of use. Regular operation outside of the normal operating range will reduce battery life to 1-2 years.
Environmental Rating	Weatherproof; tested to NEMA 6
Dimensions	17.8 H x 11.7 D x 19.3 W cm (7.0 H x 4.6 D x 7.6 W inches)
Weight	2 kg (4.30 lbs.)
Mounting	Up to 1.63 in (4.1 cm) mast or wall mount
Enclosure Access	Hinged door secured by two latches, which can be further secured with user-supplied padlocks
Optional Analog Sensor Port	
Inputs	2 channels - User-configured as either 0-20 mA or 0-20 VDC
Sensor Power	Switched 12 VDC, up to 50 mA: user-selectable warm-up from 5 milliseconds to 2 minutes
Scaling	Linear scaling to user units
Accuracy	±0.25% full scale

Note: Some HOBO U30 models require high-speed internet access and a data plan with HOBOLink.com, an Onset-hosted and managed web service. See page 46 for more details.

<p>IEI Monitoring & Control Systems</p>	<p>Sales & Support: (435) 755-0774 http://www.inmtn.com info@inmtn.com</p>
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HOBO Remote Monitoring Systems with GSM Communications		GSM Cellular to Internet	U30-GSM - ___ - ___ - S100 - ___	\$850
Sensor Port Options	No sensor port	000		included
	2-channel analog sensor port	VIA		\$89
Smart Sensor Input Options	5 smart sensor inputs	05		included
	10 smart sensor inputs	10		\$39
Battery Option	10 Ah rechargeable battery	S100		included
	20 minute calling (1 min log)	303		\$576/1yr
Global Data Service (work with T-Mobile networks in the US; includes HOBOLink service)*	30 minute calling (1 min log)	304		\$420/1yr
	20 calls per day (1 min log)	305		\$300/1yr
T-Mobile-Only Plans (includes HOBOLink Service)*	10 minute calling (1 min log)	102		\$699/1yr
	1 call per day (15 min log)	105		\$240/1yr
AT&T-Only Plan (includes HOBOLink Service)*	10 minute calling (1 min log)	202		\$1020/1yr
				\$576/1yr
				\$300/1yr
*Early termination fees apply. A \$200 fee will be charged if you cancel the plan after 30 days.				
HOBO Remote Monitoring Systems with Wi-Fi Communications				\$770
Sensor Port Options				included
				\$89
Smart Sensor Input Options				included
				\$39
Battery Option	4.5 Ah rechargeable battery	S045		included
	10 Ah rechargeable battery required when using analog sensor port for sensor power	S100		\$19
HOBOLink Data Service	10 minute upload (1 sec log)	001		\$240/1yr
	10 minute upload (1 min log)	002		\$120/1yr
	1 hr uploads (5 min log)	003		included
See onsetcomp.com for the latest selection of service plans. **Pre-N routers are Preliminary and should not be used with U30 Wi-Fi Remote Monitoring Systems.				

Important update
HOBO U30 Battery Options and Data Plans have changed. Please contact us for current information.

HOBO Remote Monitoring Systems with Ethernet Communications		Ethernet to Internet	U30-ETH - ___ - ___ - ___ - ___	\$675
Sensor Port Options	No sensor port	000		included
	2-channel analog sensor port	VIA		\$89
Smart Sensor Input Options	5 smart sensor inputs	05		included
	10 smart sensor inputs	10		\$39
Battery Option	4.5 Ah rechargeable battery	S045		included
	10 Ah rechargeable battery required when using analog sensor port for sensor power	S100		\$19
HOBOLink Data Service				\$240/1yr
				\$120/1yr
				included
HOBO Remote Monitoring Systems without remote communications				\$399
Sensor Port Options				included
				\$89
Smart Sensor Input Options				included
				\$39
Battery Options	4.5 Ah rechargeable battery	S045		included
	10 Ah rechargeable battery required when using analog sensor port for sensor power	S100		\$19
Data Plan	No data plan needed	000		N/A

Important update
HOBO U30 Battery Options and Data Plans have changed. Please contact us for current information.

Software (one required)

HOBO U30 Shuttle
HOBOWare Pro (Windows/Mac)

U-DT-2 **\$260**
BHW-PRO-CD **\$99**

See next page for Sensors and Accessories



Power Source Options

1.2 Watt Solar Panel for sunny locations and/or locations with low data transfer requirements (readout every 2 hours or longer).
SOLAR-1.2W **\$85**

3.0 Watt Solar Panel for moderately sunny locations and/or medium data transfer requirements (such as hourly readout).
SOLAR-3W **\$129**

6.0 Watt Solar Panel for cloudy locations and/or high data transfer requirements (faster than 15 minute readouts).
SOLAR-6W **\$149**

AC Power Adapter (120V, 60Hz) for locations with AC power available. The adapter is not weatherproof.
AC-U30 **\$35**

AC Power Adapter (EU) (240V, 50Hz) for locations with AC power available. The adapter is not weatherproof.
AC-U30-EU **\$35**

Weather Sensors

Temperature		
2-m cable	S-TMB-M002	\$95
6-m cable	S-TMB-M006	\$105
17-m cable	S-TMB-M017	\$120
Temp/RH		
2-m cable	S-THB-M002	\$189
8-m cable	S-THB-M008	\$195
Wind Speed/Direction	S-WSET-A	\$560
Wind Direction	S-WDA-M003	\$350
Wind Speed Sensor	S-WSA-M003	\$239
Rain Gauge: (0.01 in)	S-RGA-M002	\$420
Rain Gauge: (0.2 mm)	S-RGB-M002	\$420
Soil Moisture (EC-5)	S-SMC-M005	\$139
Soil Moisture (10HS)	S-SMD-M005	\$139
Leaf Wetness	S-LWA-M003	\$110
PAR	S-LIA-M003	\$220
Solar Radiation	S-LIB-M003	\$210
Barometric Pressure	S-BPB-CM50	\$249

E50B2 Power & Energy Meter T-VER-E50B2 **\$599**
(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

Sensors that require Pulse Input Adapter

kWh		
Wye config 208/240	T-WNB-3Y-208	\$229
Wye config opt P3	T-WNB-3Y-208-P	\$249
Delta/Wye config 208/240	T-WNB-3D-240	\$269
Delta/Wye config 480	T-WNB-3D-480	\$269
"B" Series Voltage Lead Set	A-WNB-LEADSET	\$70
Veris kWh		
1-phase, 300 Amp	T-VER-8051-300	\$642
3-phase, 800 Amp	T-VER-8053-800	\$849
Water Flow Meter	T-MINOL-130	\$105

Sensor Adapters

Pulse Input Adapter:		
-Electronic Switch	S-UCC-M00x	\$70
-Contact Closure	S-UCD-M00x	\$70

Sensors that require Analog Sensor Port

Ashcroft Gauge Pressure		
100 psig	T-ASH-G2-100	\$190
200 psig	T-ASH-G2-200	\$190
500 psig	T-ASH-G2-500	\$190
Differential Air Pressure Transducer		
.01-10.0 WC	T-VER-PXU-L	\$220
.01-10.0 WC	T-VER-PXU-X	\$195
CO ₂ /Temp	TEL-7001	\$465
CO ₂ /Temp Port Cable	CABLE-2070	\$35
kW	T-VER-8044-100	\$815
Duct-Mount Temp/RH	T-VAI-HMD-40Y	\$299
DC Amperage	T-VER-H970-080	\$190
DC Current		
0-200 Amp	T-VER-H970-200	\$205
-200-200 Amp	T-VER-971BP-200	\$229
Air Velocity Sensor		
0.15-10 m/s	T-DCI-F900-L-P	\$319
0.15-5 m/s	T-DCI-F900-L-O	\$319
0.15-10 m/s	T-DCI-F900-S-P	\$235
0.15-5 m/s	T-DCI-F900-S-O	\$235
Compressed Air Flow Meter		
1-80 SCFM	T-CDI-5200-10S	\$495
3-350 SCFM	T-CDI-5400-20S	\$629

Sensors that require True RMS Adapter

TRMS Module	S-FS-TRMSA-D	\$105
AC Amperage		
0-5 Amp	T-MAG-SCT-005	\$55
0-20 Amp	T-MAG-SCT-020	\$55
0-50 Amp	T-MAG-SCT-050	\$55
0-100 Amp	T-MAG-SCT-100	\$55
0-200 Amp	T-MAG-SCT-200	\$55
0-600 Amp	T-MAG-SCT-600	\$65
AC Amperage (mini CT)		
0-5 Amp	T-MAG-0400-05	\$30
0-10 Amp	T-MAG-0400-10	\$30
0-20 Amp	T-MAG-0400-20	\$30
0-50 Amp	T-MAG-0400-50	\$30
0-75 Amp	T-MAG-0400-75	\$30
AC Voltage		
0-150 Volt	T-MAG-SPT-150	\$79
0-300 Volt	T-MAG-SPT-300	\$79
0-600 Volt	T-MAG-SPT-600	\$79


Adapters for R.M. Young Wind Monitoring Sensors

Wind Monitor AQ	S-WCB-M003	\$150
Marine Wind Monitor	S-WCC-M003	\$150
Wind Sentry	S-WCD-M003	\$150
Wind Alpine	S-WCE-M003	\$150

Tripod/Masts and Accessories

2m Tripod with Mast		
(M-SKB recommended)	M-TPB	\$55
Complete 2 Meter Tripod Kit	M-TPB-KIT	\$190
3m Tripod with Mast		
(M-SKA recommended)	M-TPA	\$150
Complete 3 Meter Tripod Kit	M-TPA-KIT	\$275
3 m Mast	M-MPA	\$45
1.5 m Mast	M-MPB	\$25
Guy Wire Kit	M-GWA	\$40
1/4 in. State Kit	M-SKB	\$11
1/2 in. State Kit	M-SKA	\$29
Grounding Kit	M-GKA	\$45
(does not provide protection from direct lightning strikes)		
Mast Level	M-MLA	\$13
(recommended for installing masts or tripods)		
Full Cross Arm	M-CAA	\$65
Half Cross Arm	M-CAB	\$45
(a crossarm is recommended for use with wind sensors)		
Solar Radiation Shield	RS3	\$59
(for use with temperature and temp/RH sensors)		
Light Sensor Bracket	M-LBB	\$29
(for mounting PAR and solar radiation sensors on masts or flat vertical surfaces)		
Light Sensor Level	M-LLA	\$29
(recommended for installing PAR and solar radiation sensors)		
NDVI Light Sensor Bracket	M-NDVI	\$18
Smart Sensor Extension Cables		
(total cable length of all sensor cables is limited to 100 m (300 ft))		
2-m length	S-EXT-M002	\$20
5-m length	S-EXT-M005	\$25
10-m length	S-EXT-M010	\$30
25-m length	S-EXT-M025	\$45
Weatherproof Connection Housing		
(required for outside connections)	S-EXT-CASE	\$21
1 to 2 Sensor Adapter	S-ADAPT-5	\$19
This allows a single Smart Sensor input to branch to two Smart Sensors.		
Cable Caddy	M-CDY	\$59
Smart Sensor Expansion Box	S-ADAPT-6	\$95

For more details on accessories, see page 50 **Prices subject to change**



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HOBO Energy Logger

\$315 H22-001

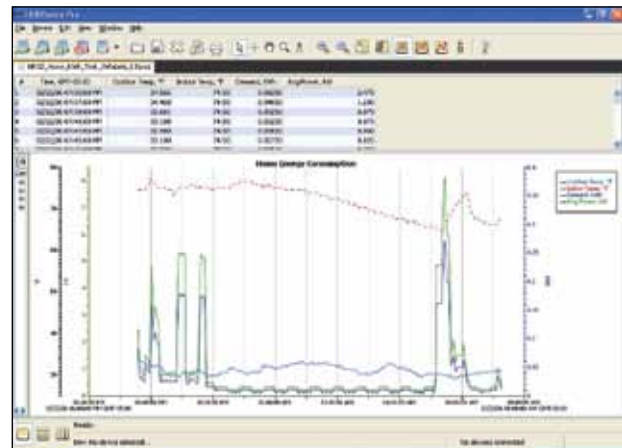
15.4 x 9.4 x 5.1 cm
 (6.06 x 3.69 x 2.00 in)
 418.7 g (14.77 oz)

- 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
- Relative Humidity
- Temperature
- Volatile Organic Compound
- Volt-Amp Reactive
- Volt-Amp Reactive Hour
- Volt-Amps
- Water Flow
- Watt Hours
- Watts
- Wind

The HOBO Energy Logger is a modular, re-configurable 15-channel data logging system for energy and environmental monitoring applications.

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 (PF), Reactive Power (VAR), Watt Hours (Wh) and more



HOBOWare Pro Software provides easy logger launch, data readout, and plotting.

- Memory: Up to 512,000 measurements, number varies based on sensor selection
- Sample rate: 1 second to 18 hours, user-selectable
- Battery life: 1-year typical, based on 75mA sensor excitation, 1 second-warmup time, and 10-minute logging interval user-replaceable, AC adapter (optional)



- Ideal for**
- Building Commissioning
 - LEED Projects
 - Compressed Air Auditing
 - Energy Management & Facilities Management
 - HVAC/R Diagnostics
 - IAQ Projects
 - Chiller Optimization
 - M&V Projects
 - Performance Verification
 - Renewable Energy Installations

*See page 49 for external sensors and attachment accessories.
 See onsetcomp.com for application and specific system diagrams.*



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HOBO Energy Logger Ordering Guide

HOBO Energy Logger	H22-001	\$315	Veris kW	T-VER-8044-100	\$815
FlexSmart® TRMS Module	S-FS-TRMSA	\$95	Ashcroft Gauge Pressure		
FlexSmart Analog Module	S-FS-CVIA	\$89	100 psig	T-ASH-G2-100	\$190
			200 psig	T-ASH-G2-200	\$190
			500 psig	T-ASH-G2-500	\$190
Pulse Input Adapter	S-UCC-M006	\$75	Differential Air Pressure Transducer		
Sensors			0.01-10.0 WC	T-VER-PXU-L	\$220
<i>Smart Sensors (plug-and-play, no module required).</i>			0.01-10.0 WC	T-VER-PXU-X	\$195
12-bit Temperature			Vaisala Duct-Mount RH/Temp		
2-m cable	S-TMB-M002	\$95	Telaire CO ₂ /Temp	T-VAI-HMD-40Y	\$299
6-m cable	S-TMB-M006	\$105	Cable to Module	TEL-7001	\$465
17-m cable	S-TMB-M017	\$120		CABLE-2070	\$35
12-bit Temp/RH			DC Current		
2-m cable	S-THB-M002	\$189	0-200 Amp	T-VER-H970-200	\$205
8-m cable	S-THB-M008	\$195	-200 to 200 Amp	T-VER-971BP-200	\$229
E50B2 Power & Energy Meter	T-VER-E50B2	\$599	Air Velocity Sensor		
(requires 1 to 3 Pulse Input Adapters)			0.15-10 m/s	T-DCI-F900-L-P	\$319
Measurements: AC Current, AC Voltage, Amp Hour, Amps, Kilowatt			0.15-5 m/s	T-DCI-F900-L-O	\$319
Hours, Kilowatts, Power Factor, Volt-Amp Reactive, Volt-Amp			0.15-10 m/s	T-DCI-F900-S-P	\$235
Reactive Hour, Volt-Amps, Volts, Watt Hours, Watts			0.15-5 m/s	T-DCI-F900-S-O	\$235
WattNode kWh			Compressed Air Flow Meter		
<i>Pulse Input Adapter required.</i>			1-80 SCFM**	T-CDI-5200-10S	\$495
Wye config 208/240	T-WNB-3Y-208	\$229	3-350 SCFM**	T-CDI-5400-20S	\$629
Wye 208/240 opt	T-WNB-3Y-208-P	\$249	Volatile Organic Compound (VOC)		
Delta/Wye config 208/240	T-WNB-3D-240	\$269	0-10, 0-100, 0-1000 ppm	T-ION-TVOC	\$2995
Delta/Wye config 480	T-WNB-3D-480	\$269			
"B" Series Voltage Lead Set	A-WNB-LEADSET	\$70	Solar & Wind		
			Silicon Pyranometer	S-LIB-M003	\$210
			(solar radiation)		
Veris kWh			Wind Sensor Set	S-WSET-A	\$560
<i>Pulse Input Adapter required.</i>			Wind Speed Sensor	S-WSA-M003	\$239
1-phase, 300 Amp	T-VER-8051-300	\$642	Wind Direction Sensor	S-WDA-M003	\$350
3-phase, 800 Amp	T-VER-8053-800	\$849			
Water Flow			Adapters for R.M. Young Wind Monitoring		
Water Flow Meter	T-MINOL-130	\$105	Wind Monitor AQ	S-WCB-M003	\$150
			Marine Wind Monitor	S-WCC-M003	\$150
			Wind Sentry	S-WCD-M003	\$150
			Wind Alpine	S-WCE-M003	\$150
True RMS Current and Voltage			Accessories		
<i>FlexSmart TRMS Module required (Part #S-FS-TRMSA).</i>			Mounting Feet Kit	A-H22-MOUNT-1	\$9
Magnelab Split-Core AC Current (also used with WattNode)			DIN Mount Kit	A-H22-DINMOUNT-1	\$19
0-5 Amp	T-MAG-SCT-005	\$55	AC power adapter	P-AC-1	\$29
0-20 Amp	T-MAG-SCT-020	\$55	Smart Sensor Extension Cables		
0-50 Amp	T-MAG-SCT-050	\$55	(total cable length of all sensor cables is 100 m (300 ft)).		
0-100 Amp	T-MAG-SCT-100	\$55	2-m length	S-EXT-M002	\$20
0-200 Amp	T-MAG-SCT-200	\$55	5-m length	S-EXT-M005	\$25
0-600 Amp	T-MAG-SCT-600	\$65	10-m length	S-EXT-M010	\$30
			25-m length	S-EXT-M025	\$45
Magnelab (mini CT) Split-Core AC Current			1-to-2 Sensor Adapter***	S-ADAPT-5	\$19
(also used with WattNode)			Software		
0-5 Amp	T-MAG-0400-05	\$30	HOBOWare Pro Software		
0-10 Amp	T-MAG-0400-10	\$30	(Windows/Mac)	BHW-PRO-CD	\$99
0-20 Amp	T-MAG-0400-20	\$30	Serial Interface Cable		
0-50 Amp	T-MAG-0400-50	\$30	(Required)	CABLE-PC-3.5	\$10
0-75 Amp	T-MAG-0400-75	\$30	USB Interface Cable	ADAPT-SER-USB	\$49
Magnelab AC Voltage			Optional Communications		
0-150 Volt	T-MAG-SPT-150	\$79	HOBO U-Shuttle*	U-DT-2	\$260
0-300 Volt	T-MAG-SPT-300	\$79	Serial to Ethernet Server	SERVER-DS203	\$135
0-600 Volt	T-MAG-SPT-600	\$79			

Analog Input Sensors

These sensors require a FlexSmart Analog Module (Part #S-FS-CVIA).


Prices subject to change

*Requires HOBOWare Pro software, see page 52 for details.

**Can also be configured for pulse output

*** When used with Smart Sensor Extension Cables, this allows a single smart sensor input to branch to two Smart Sensors.

Complete system requires logger, sensor and software.



Sales & Support:
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<http://www.inmtn.com>
info@inmtn.com

- Tripods and masts provide convenient system deployment
- Sensor mounting accessories provide proper spacing for accurate measurements
- Kits available for ordering convenience



2 Meter Tripod*

\$55 M-TPB

- Height range: 1.72 to 2.13 m (5.6 to 7 ft)
- Mast diameter: 4.1 cm (1.63 in)
- Weight: 5.8 kg (12.8 lbs)

* M-GKA Grounding Kit is recommended when using tripods in exposed locations.

2 Meter Tripod Kit

\$190 M-TPB-KIT

- 2-meter tripod (M-TPB)
- Grounding Kit (M-GKA)
- Guy Wire Kit (M-GWA)
- 1/2 in. Stake Kit (M-SKA) for guy wires
- 1/4 in. Stake Kit for tripod (M-SKB)
- Mast Level (M-MLA)



3 Meter Tripod*

\$150 M-TPA (shown at right)

- Height range: 2.74 to 3.20 m (9 to 10.5 ft)
- Mast diameter: 4.1 cm (1.63 in)
- Weight: 12.7 kg (28 lbs)
- Maximum slope: 13 degrees for installation on moderately uneven ground

* M-GKA Grounding Kit is recommended when using tripods in exposed locations.

3 Meter Tripod Kit

\$275 M-TPA-KIT

- 3-meter tripod (M-TPA)
- 1/2 in. Stake Kit (M-SKA) for guy wires
- Grounding Kit (M-GKA)
- Guy Wire Kit (M-GWA)
- Mast Level (M-MLA)



Cable Caddy

\$59 M-CDY

- Extends sensor cable life by securing extra cables inside it
- Provides a convenient place to mount the S-BPB barometric pressure sensor
- Includes U-bolt for mast mounting and 4 cable ties

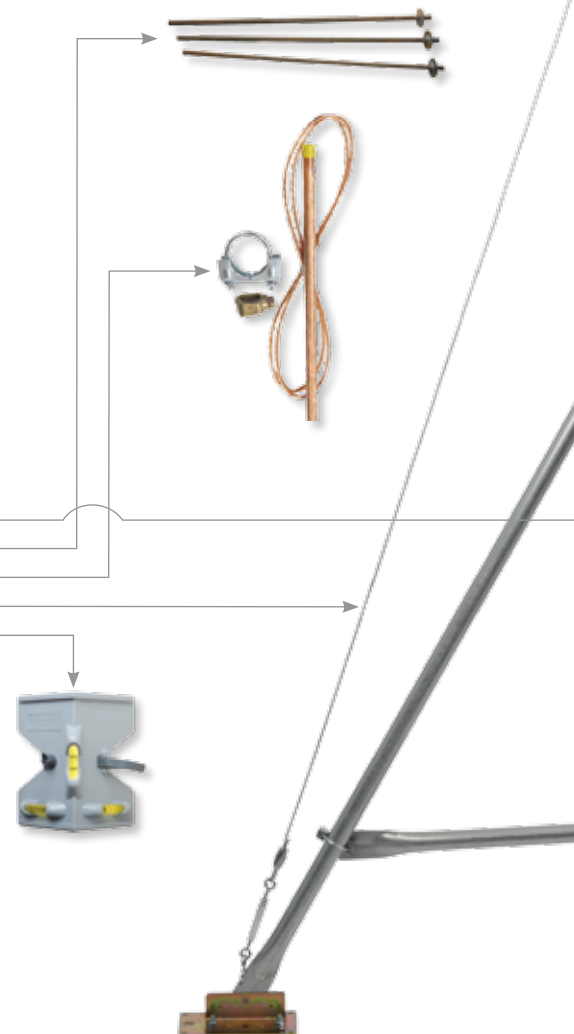


Wind Speed

Full Cross Arm



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Data Logging Systems



Light Sensor Bracket

\$29 M-LBB

Includes leveling screws and u-bolts for mast mounting

Solar Radiation Shield

\$59 RS3

Pre-assembled
For S-THBs, S-TMBs
includes clamp for mast mounting.



Full Cross Arm

\$65 M-CAA

91.5 cm (36 in)

For use with Onset tripods or masts, the full cross arm assures unobstructed wind measurement.



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NDVI Light Sensor Bracket

\$18 M-NDVI

Used to mount 2 PAR sensors and 2 solar radiation sensors for making NDVI measurements. Also requires M-LBB light sensor bracket



Light Sensor Level

\$35 M-LLA

Purchase one for use on any number of light sensors.



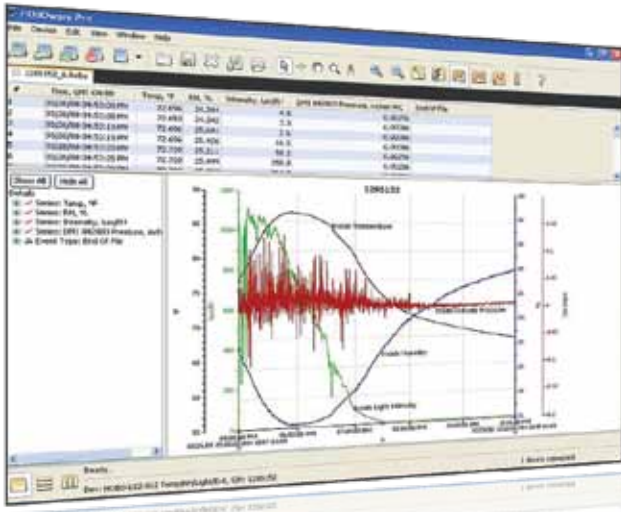
Smart Sensor Extension Cables

\$20-\$45 S-EXT-M0xx

2 m, 5 m, 10 m, 25 m
(16 ft, 33 ft, 82 ft)

cable lengths available. Use individually or connected together to optimize sensor placement. A weatherproof housing is required for outdoor connections (Part# S-EXT-CASE \$21). Limited to 100 meters per data logger.





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
- Advanced data delivery options via FTP, email
- \$99 per licensed copy; one time price with free lifetime updates

**HOBOWare Pro Software
BHW-PRO-CD**

 **HOBOWare Pro
30-Day FREE TRIAL**
Visit onsetcomp.com for details



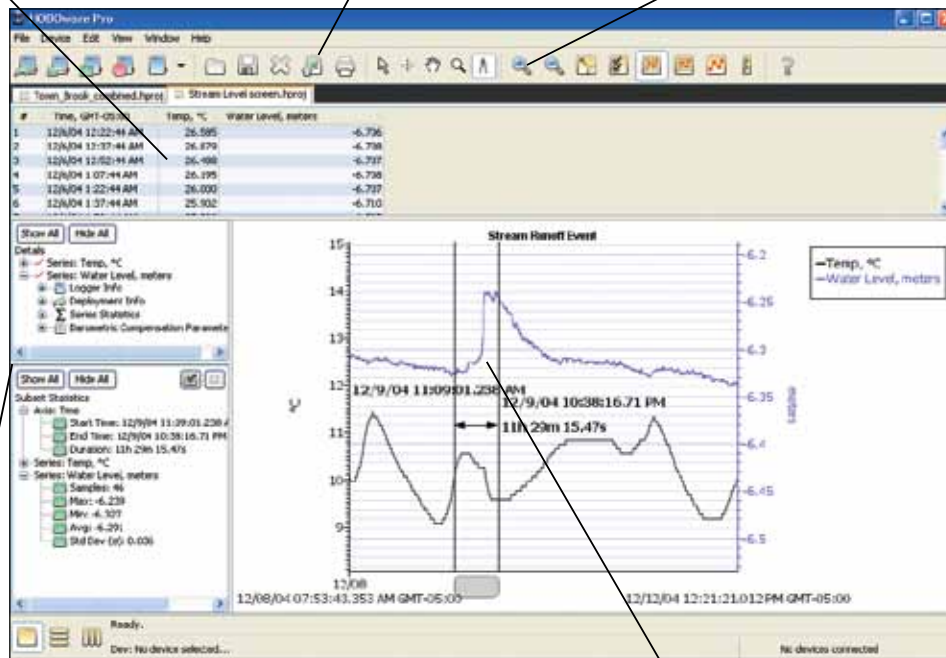
Logged data can be presented in tabular format, in addition to graphs.



Data can be easily exported to spreadsheets within a few clicks.




Zoom tool lets you focus in on data of interest.



The Series Statistics pane includes the number of samples, average reading, and sample time.



Powerful analysis tools extract key information from logged data.

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Easy Logger Setup and Readout– HOBOWare Pro makes it fast and easy to set up HOBO data loggers for deployment, and 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 are included with HOBOWare Pro, such as Conductivity, Barometric Compensation, Linear Scaling, Pulse Scaling, kWh Assistant, Growing Degree Days, and Grains Per Pound.



Easy logger setup - select launch parameters and go!



HOBONode Manager

For use with HOBO ZW Series Data Nodes

- Get real-time graphs of your building data
- Receive text messages or email when conditions exceed thresholds
- Map deployed data nodes throughout your facility
- One-click data export to spreadsheet programs

See page 19 for more details



Software

Ordering Information

Software

HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD	\$99
USB Serial Adapter (for H Series)	ADAPT-SER-USB	\$49
Serial Interface Cable (for H Series)	CABLE-PC-3.5	\$10

HOBOWare includes USB interface cable.

Onset also offers HOBOWare Lite (\$45) which is an entry-level graphing and analysis package. See onsetcomp.com for more details.

Prices subject to change

HOBOWare software is available for download via the web. Visit onsetcomp.com for details.

HOBOWare Pro for Windows System Requirements

- PC: Windows 7 (Pro, Ultimate and Home Premium), Windows XP Pro, Windows XP Home, Vista Business, Vista Home Premium
- Java Runtime Environment (JRE) 1.6 (32-bit or 64-bit).
- One of the following Internet browsers (version number listed is the highest major version we tested): Safari 5 or greater, Firefox 7 or greater, Microsoft Internet Explorer 9.0.
- Minimum screen resolution of 1024x768
- 1.8 GHz single core CPU, 1 GB RAM*

* HOBONode users require up to 2.9 GHz dual core and 3GB RAM. See onsetcomp.com for details.

HOBOWare Pro Mac System Requirements

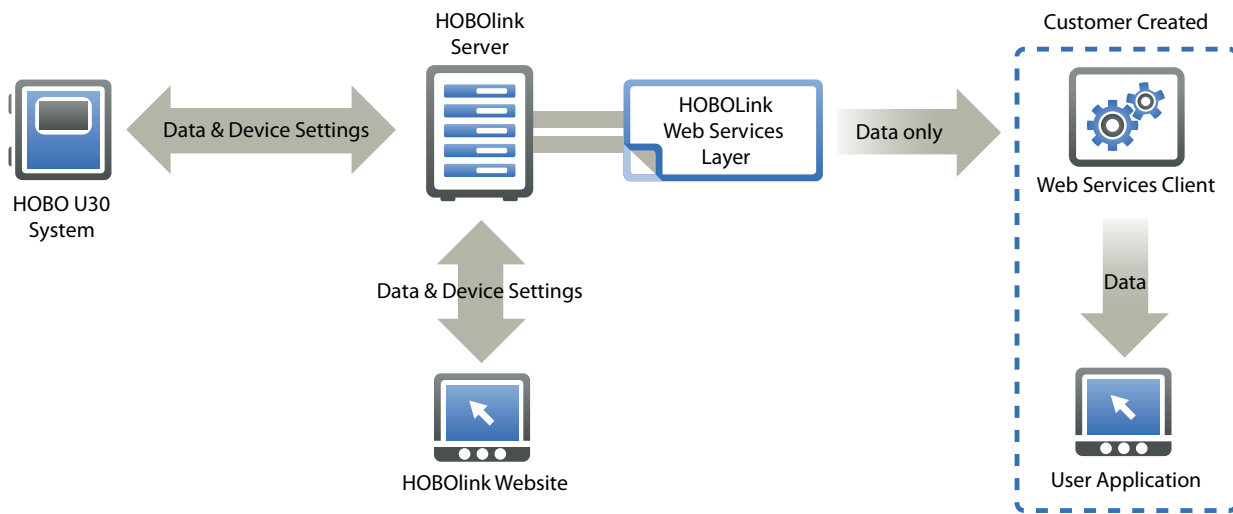
- Mac: OS X Versions 10.5.x, 10.6.x and 10.7.x.
- Java Runtime Environment (JRE) 1.6. Please note that version 1.6, also known as Java 6, is officially supported on OS X only on Intel Core 2 Duo processors or newer
- One of the following Internet browsers (version number listed is the highest major version we tested): Safari 5 or greater, Firefox 7 or greater, Microsoft Internet Explorer 9.0.
- Minimum screen resolution of 1024x768
- 1.8 GHz single core CPU, 1 GB RAM*


HOBOLink Web Services API Enables Data Integration with Custom Software Applications

The HOBOLink Web Services API is an application programming interface that enables organizations to easily integrate energy and environmental data from Onset HOBOLink web servers with custom software applications. It will be utilized by a range of users, from building energy dashboard suppliers to developers looking to embed real-time weather data from Onset HOBO U30 monitoring systems into web-based portals.

The HOBOLink Web Services API supports the Simple Object Access Protocol (SOAP) and Representational State Transfer (REST) architecture. Data can be fetched through the web services either in CSV format or SensorML (Sensor Model Language) format, depending upon the type of web service chosen by the user.

To find out more about the Web Services API, please call 1-866-244-3197 to speak with an Onset Product Application Specialist.



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

Key Advantages:

- 24/7 web access to view your data and monitor U30 system status
- Set up and manage alarm notifications over the web
- Integrate data from HOBOLink into your applications in real time through "HOBOLink Web Services"
- Push data from HOBOLink to external dashboards and web portals, specific to your applications

Security HOBOLink provides you with password-protected accounts and a 128-bit encrypted connection. You can keep your data private or make it accessible to others through the "Public Access" features in HOBOLink.

Easy data access In addition to viewing your data in web-based graphs, you can quickly download your HOBOLink data in ".csv" format to import into third-party software or in ".dtf" format for detailed analysis in HOBOWare Pro.

Dashboard Integration HOBOLink is set up to readily integrate with advanced dashboards from our partners for energy monitoring applications. For weather monitoring applications, HOBOLink provides a turnkey feature to integrate your U30 weather station data with Weather Underground. (www.wunderground.com)


The dashboard integration feature provides users with more flexibility to set custom views for their data outside of HOBOLink by using different tools provided by the dashboards/web portals.

HOBOLink web services HOBOLink Web Services offer the ability for third-party developers and partners to write their own programs to extract data from the HOBOLink servers for their application needs. Onset also provides free tools for HOBOLink users to use these web services.

Alarm notifications HOBOLink users can set up and manage alarm notifications through the web. HOBOLink will send a text message to your phone and email to your computer when conditions exceed set thresholds, if there is a sensor failure or low battery.

Software

Ordering Information			
HOBOLink U30/GSM Global Data Service (includes HOBOLink Service)	Limited Coverage, Low Use (2 hour connection, 1 min log)	SP-801	\$240/year
	Expanded Coverage, Low Use	SP-802	\$360/1yr
	Limited Coverage, High Use (10 min connection, 1 min log)	SP-803	\$480/1yr
	Expanded Coverage, High Use	SP-804	\$720/1yr
Limited Coverage plans recommended in the US; all other countries see onsetcomp.com for further information on coverage detail and use definition.			
HOBOLink U30/WiFi HOBOLink Data Service	10 minute upload (1 sec log)	SP-001	\$240/1yr
	10 minute upload (1 min log)	SP-002	\$120/1yr
	1 hr uploads (5 min log)	SP-003	included
HOBOLink U30/Ethernet HOBOLink Data Service	10 minute upload (1 sec log)	SP-001	\$240/1yr
	10 minute upload (1 min log)	SP-002	\$120/1yr
	1 hr uploads (5 min log)	SP-003	included
Software (one required)	HOBOWare Pro (Windows/Mac)	BHW-PRO-CD	\$99




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Prices subject to change

Weather/Environmental Sensors							
Measurement	Part#	Price	U30	H21-002	H22-001	U12-008	Notes
Barometric Pressure	S-BPB-CM50	\$249	x	x	♦		
Leaf Wetness	S-LWA-M003	\$110	x	x	♦		
Solar Radiation (Silicone Pyranometer)	S-LIB-M003	\$210	x	x	♦		
Photosynthetically Active Radiation (PAR)	S-LIA-M003	\$220	x	x	♦		
Rain (0.01") Aluminum	S-RGA-M002	\$420	x	x	♦		
Rain (0.2mm) Aluminum	S-RGB-M002	\$420	x	x	♦		
Soil Moisture - EC-5	S-SMC-M005	\$139	x	x	♦		
Soil Moisture - 10HS	S-SMD-M005	\$139	x	x	♦		
Temperature	S-TMB-M0xx	\$95-\$120	x	x	x		
Temperature	TMCX-HD	\$29-\$42				x	
Relative Humidity & Temperature	S-THB-M00x	\$189-\$195	x	x	x		
Wind Speed	S-WSA-M003	\$239	x	x	♦		
Wind Direction	S-WDA-M003	\$350	x	x	♦		
Adapters for R.M. Young Wind Sensors	S-WCx-M00x	\$150	x	x	♦		
Analog and Digital Adapters for Connecting Sensors							
0-5 Volt DC	S-VIA-CM14	\$85	x	x	x		Provides 2.5VDC, 1mA Excitation
0-10 Volt DC Input Cable	CABLE-ADAP10	\$12				x	Does not provide Excitation Voltage
0-5 Volt DC Input Cable	CABLE-ADAP5	\$12				x	Does not provide Excitation Voltage
0-2.5 Volt DC Input Cable	CABLE-2.5-STEREO	\$9				x	Does not provide Excitation Voltage
4-20mA	S-CIA-CM14	\$85	x	x	x		Does not provide Excitation Voltage
4-20mA Input Cable	CABLE-4-20mA	\$25				x	
Pulse Input Adapter electronic	S-UCC-M00x	\$70	x	x	x		
Pulse Input Adapter contact closure	S-UCD-M00x	\$70	x	x	x		
U30 Built in Analog Input Port (2 inputs)	VIA	\$89	x				Provides 12VDC, 50mA Excitation

♦ These sensors are not generally used with the H22-001, but they are compatible as long as the H22 is in an indoor environment


Prices subject to change

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Energy Sensors														
Measurement	Part#	Price	Required Items				Excitation Required	U30	H22	H21-002	U12	ZW	UX90	UX120
			U30	H22	U12	ZW								
AC Voltage Transmitters	T-CON-ACT-xxx	\$139				CABLE-4-20mA					x	x		
Split-Core AC Current Sensor up to 600 AMP	CTV-x	\$90-\$115									x	x		
AC Current Switch	CSV-A8	\$89											x	x
TRMS AC Amperage	T-MAG-xxx-xxx	\$30-\$65	S-FS-TRMSA-D	S-FS-TRMSA			x	x						
TRMS AC Voltage	T-MAG-xxx-xxx	\$79	S-FS-TRMSA-D	S-FS-TRMSA			x	x						
Air Velocity	T-DCI-F900-S-x	\$235	Built in VIA	S-FS-CVIA		CABLE-ADAP5 & AC-SENS-1	12 VDC, 70mA	x	x		x	x		
Air Velocity	T-DCI-F900-L-x	\$319	Built in VIA	S-FS-CVIA		CABLE-ADAP5 & AC-SENS-1	12 VDC, 70mA	x	x		x	x		
Carbon Dioxide	TEL-7001	\$465	Built in VIA & CABLE-2070	S-FS-CVIA & CABLE-2070		CABLE-CO2		x	x		x	x		
Compressed Air Flow Meter	T-CDI-5200-10S	\$495	Built in VIA	S-FS-CVIA		CABLE-4-20mA		x	x	x	x	x		
Compressed Air Flow Meter	T-CDI-5400-20S	\$629	Built in VIA	S-FS-CVIA		CABLE-4-20mA		x	x	x	x	x		
DC Amperage -200 to 200 AMP	T-VER-971BP-200	\$229	Built in VIA	S-FS-CVIA		CABLE-4-20mA & AC-SENS-1	12 VDC, 35mA	x	x		x	x		
DC Amperage 0-200 AMP	T-VER-H970-200	\$205	Built in VIA	S-FS-CVIA		*CABLE-ADAP5 & AC-SENS-1	12 VDC, 35mA	x	x		x	x		
Differential Air Pressure	T-VER-PXU-L	\$220	Built in VIA	S-FS-CVIA		*CABLE-ADAP5 & AC-SENS-1	12 VDC, 35mA	x	x		x	x		
Differential Air Pressure	T-VER-PXU-X	\$195	Built in VIA	S-FS-CVIA		*CABLE-ADAP5 & AC-SENS-1	12 VDC, 35mA	x	x		x	x		
Gauge Pressure	T-ASH-G2-xxx	\$190	Built in VIA	S-FS-CVIA		CABLE-ADAP5 & AC-SENS-1	12 VDC, 5mA	x	x		x	x		
Power- 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	T-VER-E50B2	\$599	S-UCC-M006 & T-MAG-xxx-xxx			CABLE-2.5-STEREO		x	x	x		x		x
Kilowatt Hours (kWh) Delta/Wye 240	T-WNB-3D-240	\$269	S-UCC-M006 & T-MAG-xxx-xxx			CABLE-2.5-STEREO		x	x	x		x	x	x
Kilowatt Hours (kWh) Delta/Wye 480	T-WNB-3D-480	\$269	S-UCC-M006 & T-MAG-xxx-xxx			CABLE-2.5-STEREO		x	x	x		x	x	x
Kilowatt Hours (kWh) Delta/Wye 208/240	T-WNB-3Y-208	\$229	S-UCC-M006 & T-MAG-xxx-xxx			CABLE-2.5-STEREO		x	x	x		x	x	x
Kilowatt Hours (kWh) Delta/Wye 208/240	T-WNB-3Y-208-P	\$249	S-UCC-M006 & T-MAG-xxx-xxx			CABLE-2.5-STEREO		x				x	x	x
Power (kW) 3 phase, 100 AMP	T-VER-8044-100	\$815	Built in VIA	S-FS-CVIA		CABLE-4-20mA & AC-SENS-1		x	x		x	x		
Temperature	S-TMB-M0XX	\$95-\$120						x	x	x				
Air Water Soil Temperature	TMCx-HD	\$32-\$45									x	x		
Pipe Temperature	TMC6-HE	\$35									x	x		
Stainless Steel Temp Probe	TMC6-HC	\$79									x	x		
Relative Humidity & Temperature	S-THB-M00x	\$189-\$195						x	x	x				
Relative Humidity	T-VAI-HMD-40Y	\$299	Built in VIA	S-FS-CVIA			12 VDC, 20mA	x	x					
Volatile Organic compound (VOC)	T-ION-TVOC	\$2,995	Built in VIA	S-FS-CVIA		CABLE-4-20mA & AC-SENS-1	12 VDC, 300mA	x	x		x	x		
Water Flow Meter	T-MINOL-130	\$105	S-UCD-M006			CABLE-2.5-STEREO		x	x	x		x	x	x
Analog and Digital Adapters for connecting sensors				Notes										
0-5 Volt DC	S-VIA-CM14	\$85			Provides 2.5VDC, 1mA Excitation			x	x	x				
4-20mA	S-CIA-CM14	\$85			Does not provide Excitation Voltage			x	x	x				
4-20mA Input cable	CABLE-4-20mA	\$25			Does not provide Excitation Voltage						x	x		
0 -10 Volt DC Input Cable	CABLE-ADAP10	\$12			Does not provide Excitation Voltage						x	x		
0 - 5 Volt DC Input cable	CABLE-ADAP5	\$12			Does not provide Excitation Voltage						x	x		
0-2.5 Volt DC Input cable	CABLE-2.5-STEREO	\$9			Does not provide Excitation Voltage						x	x		
Pulse input	CABLE-2.5-STEREO	\$9			Does not provide Excitation Voltage							x	x	
Pulse input	S-UCC-M00x	\$70-\$75			Does not provide Excitation Voltage			x	x	x				
Pulse input	S-UCD-M00x	\$70-\$75			Does not provide Excitation Voltage			x	x	x				
Analog Input Adapter	S-FS-CVIA	\$89			Provides 12VDC, 200mA Excitation				x					
TRMS Input Module	S-FS-TRMSA	\$95			N/A				x					
TRMS Smart Input Module	S-FS-TRMSA-D	\$105			N/A			x	x					
U30 Built in Analog Input Port (2 inputs)	VIA	\$89			Provides 12VDC, 50mA Excitation			x						

*4-20mA output option requires CABLE-4-20mA

Prices subject to change



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Weather/Environmental



Barometric Pressure
\$249 S-BPB-CM50
 50 cm (20 in) Cable

Range: 660 mbar to 1070 mbar (19.47 to 31.55 in. Hg)
 Accuracy: ± 3.0 mbar (0.088 in. Hg) over full pressure range at 25°C (77° F) max error of ± 5.0 mbar (0.148 in. Hg) over -40° to +70°C (-40° to +158°F)
 Resolution: 0.1 mbar (0.003 in. Hg)
 User connection: 2-wire input (24 AWG wire; 2 wire nuts included)

*Includes cable ties for mast mounting.
 Recommended for use with the HOBO U30 Remote Monitoring System.*

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Leaf Wetness
\$110 S-LWA-M003
 Sensor Plate
 4.7 x 5.1 cm
 (1.8 x 2.0 in) Tube
 12.2 cm x 1.8 cm diameter
 (4.8 x 0.7 in) Cable 3 m (9.8 ft)

Range: 0 (dry) to 100% (wet)
 Sensor Type: Capacitive Grid
 Repeatability: ±5%
 Resolution: 0.59%

Includes mounting bracket. Adjustable angle allows better matching to leaf characteristics.

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Photosynthetically Active Radiation (PAR)
\$220 S-LIA-M003
 3 m (9.8 ft) Cable

Range: 0 to 2500 µmol/m²/sec
 Spectral range: 400 to 700 nm
 Accuracy: ± 5 µmol/m²/sec or ± 5%, whichever is greater in sunlight. Cosine corrected 0 to 80 degrees
 Resolution: 2.5 µmol/m²/sec

Light sensor bracket (M-LBB) and light sensor level (M-LLA) recommended.

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Solar Radiation (Silicon Pyranometer)
\$210 S-LIB-M003
 3 m (9.8 ft) Cable


Range: 0 to 1280 W/m²
 Spectral range: 300 to 1100 nm
 Accuracy: ±10W/m² or ±5% whichever is greater in sunlight. Cosine corrected 0 to 80 degrees
 Resolution: 1.25 W/m²

Light sensor bracket (M-LBB) and light sensor level (M-LLA) recommended.

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



♦ These sensors are not generally used with the H22-001, but they are compatible as long as the H22 is in an indoor environment



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Mechanism: Tipping bucket, with 154 mm (6.06 in) receiving orifice
 Range: Up to 12.7 cm/hr or 5 in/h, maximum 4000 tips per interval
 Resolution: 0.2 mm (S-RGB) and 0.01 in. (S-RGA)
 Calibration accuracy: ±1.0% at up to 20 mm/hour or 1 in/hour
 Comes with side bracket for post or tripod mount and feet for surface mount.

	√	♦	√					CE
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120	

Rain Gauge Smart Sensors

\$420
0.2 mm: S-RGB-M002
0.01in: S-RGA M002
 Cable 2 m (6.5 ft)



Range: 0 to 0.57 m³/m³ volumetric water content
 Accuracy: Typical: ±0.033 m³/m³ (±3%) up to 10 ds/m,
 ±0.020 m³/m³ (±2%) with soil-specific calibration
 Resolution: ±0.0008 m³/m³ (±0.08%)

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120

Soil Moisture-10HS
\$139 S-SMD-M005
 160 x 32 x 2 mm
 (6.5 x 1.25 x 0.08 in)
 Cable 5 m (16 ft)

Note: no more than 6 per H21-002 logger
 For CE compliant solution, use part number T-DEC-10HS with U30 Analog Sensor (VIA)




Range: 0 to 0.55 m³/m³ volumetric water content
 Accuracy: Typical: ±0.031 m³/m³ (±3%) up to 8 ds/m,
 ±0.020 m³/m³ (±2%) with soil-specific calibration
 Resolution: ±0.0007 m³/m³ (±0.07%)

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120

Soil Moisture-EC-5
\$139 S-SMC-M005
 89 x 15 x 1.5 mm
 (3.5 x 0.62 x 0.06 in)
 Cable 5 m (16 ft)

♦ These sensors are not generally used with the H22-001, but they are compatible as long as the H22 is in an indoor environment



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12-bit Temperature
\$95-\$120 S-TMB-M0xx
 2 m, 6 m, 17 m
 cable lengths available:
 (6.5 ft, 20 ft, 56 ft)

Range: -40° to 75°C (-40° to 212°F)
 Accuracy: ± 0.21° from 0° to 50°C (±0.38° from 32° to 122°F)
 Resolution: 0.03° from 0° to 50°C (0.054° from 32° to 122°F)
 Environment: Sensor tip and cable rated for 1-year immersion
 in fresh water ≤ 50°C (122°F)
 Response Time: < 3 minutes (to 90% in airflow of 1 m/s)
*Solar radiation shield (RS3) recommended for accurate temperature
 measurements in sunlight.*

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Temperature/RH
\$189-\$195 S-THB-M00x
 cable lengths available
 2 m, 8 m, (6.5 ft, 26 ft)

Ranges: -40° to 75°C (-40° to 167°F); 0 to 100%
 Accuracy: RH from -40° to 75°C (-40° to 167°F)
 ± 0.21° @ 25°C (±0.386° @ 77°F);
 ± 2.5% typical, 3.5% maximum, from 10 - 90% RH
 Resolution: 0.02° @ 25°C (0.04° @ 77°F); 0.1% RH @ 25°C (77°F)
 Response Time: Temp: 5 minutes, RH: 5 minutes (to 90% in airflow of 1 m/s)
 Data Channels: 2
*Solar radiation shield (RS3) recommended for accurate
 temperature measurements in sunlight.*

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Wind Sensor Set
\$560 S-WSET-A
 3 m (9.8 ft) Cables

Range:	0 to 45 m/s (0 to 100 mph)	Wind Direction	0 to 355 degrees, 5 degree dead band
Accuracy:	± 1.1 m/sec (24 mph) or ± 4% of reading, whichever is greater		± 5 degrees
Resolution:	0.38 m/s (0.8 mph)		1.4 degrees
Starting threshold:	1.0 m/s (2.2 mph)		1.0 m/s (2.2 mph)
Data channels:	2**		1**
Logger Inputs:	1		1

Survival to 54 m/sec (120 mph)
 Full Cross Arm (M-CAA) recommended for mounting

Note: This wind sensor set includes the Wind Speed (S-WSA-M003) and Wind Direction (S-WDA-M003) smart sensors which are also sold separately. Please visit onsetcomp.com for more details.

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



♦ These sensors are not generally used with the H22-001, but they are compatible as long as the H22 is in an indoor environment



**R.M. Young
Wind Monitor-AQ
(model 05305) Adapter
\$150 S-WCB-M003**

3m (9.8 ft) cable from the adapter housing that plugs into logger. Adapter housing dimensions – 19.6 cm(7.7 in) long, 2.7 cm (1.05 in) diameter

Range: 0 to 50 m/s (0 to 112 mph)
Accuracy: 0.20 m/s (0.4 mph)
Data channels: 3 (average wind speed, direction, and highest 3 second gust)

Speed

Direction

0 to 50 m/s (0 to 112 mph)

0 to 360 degrees

0.20 m/s (0.4 mph)

± 3 degrees

3 (average wind speed, direction, and highest 3 second gust)

NOTE: This adapter is not compatible with models 05305L or 05305V

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



**R.M. Young
Marine Wind Monitor
(model 05106) Adapter
\$150 S-WCC-M003**

3m (9.8 ft) cable from the adapter housing that plugs into logger. Adapter Housing Dimensions – 19.6 cm(7.7 in) long, 2.7 cm (1.05 in) diameter.

Range: 0 to 100 m/s (0 to 224 mph)
Accuracy: ± 0.3 m/s (0.6 mph)
Data channels: 3 (average wind speed, direction, and highest 3 second gust)

Speed

Direction

0 to 100 m/s (0 to 224 mph)

0 to 355 degrees

± 0.3 m/s (0.6 mph)

± 3 degrees

3 (average wind speed, direction, and highest 3 second gust)

NOTE: This adapter is not compatible with models 05603C or 05631C

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



**R.M. Young
Wind Sentry
(model 03002) Adapter
\$150 S-WCD-M003**

3m (9.8 ft) cable from the adapter housing that plugs into logger. Adapter Housing Dimensions – 19.6 cm(7.7 in) long, 2.7 cm (1.05 in) diameter

Range: 0 to 50 m/s (0 to 112 mph)
Accuracy: 0.25 m/s (0.55 mph)
Data channels: 3 (average wind speed, direction, and highest 3 second gust)

Speed

Direction

0 to 50 m/s (0 to 112 mph)

0 to 355 degrees

0.25 m/s (0.55 mph)

1.4 degrees

3 (average wind speed, direction, and highest 3 second gust)

NOTE: This adapter is not compatible with models 03002L or 03002M

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



**R.M. Young
Wind Monitor adapter for Wind/Alpine
(models 05103, and 05103-45)
\$150 S-WCE-M003**

3m (9.8 ft) cable from the adapter housing that plugs into logger. Adapter Housing Dimensions – 19.6 cm(7.7 in) long, 2.7 cm (1.05 in) diameter

Range: 0 to 100 m/s (224 mph)
Accuracy: ± 0.3 m/s (0.6 mph)
Data channels: 3 (average wind speed, direction, and highest 3 second gust)

Speed

Direction

0 to 100 m/s (224 mph)

0 to 360 degrees

± 0.3 m/s (0.6 mph)

± 3 degrees


3 (average wind speed, direction, and highest 3 second gust)

NOTE: This adapter is not compatible with models 05103L, 05103V, 05103L-45, or 05103V-45

	√	♦	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



♦ These sensors are not generally used with the H22-001, but they are compatible as long as the H22 is in an indoor environment



Sales & Support:
(435) 755-0774
<http://www.inmtn.com>
info@inmtn.com

Analog and digital Adapters for connecting sensors



0-5V Input Adapter
\$75 S-VIA-CM14

Range: 0-5V DC
Accuracy: ±0.025V
Resolution: 1.221 millivolts
Sensor trigger: Open collector or 2.5V

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



4-20mA Input Adapter
\$85 S-CIA-CM14

Range: 0-20 mA
Accuracy: ±0.1 mA
Resolution: ±4.93 µA
Choice of non-switched or switched input to save external battery power
Sensor trigger: 2.5 V

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Electronic Pulse Input Adapter
\$70-\$75 S-UCC-M00X
cable lengths available:
1 M, 6 M, (3.3 ft, 21 ft)

Maximum Frequency: 120 Hz (120 pulses per second)
Range: 0-65, 533 counts per logging interval
User Connection: 2-wire input (wire nuts included)

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Contact Closure Pulse Input Adapter
\$70-\$75 S-UCD-M00X
cable lengths available:
1 M, 6 M, (3.3 ft, 21 ft)

Maximum Frequency: 120 Hz (120 pulses per second)
Range: 0-65, 533 counts per logging interval
User Connection: 2-wire input (wire nuts included)

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



U30 Built in Analog Input Port (2 inputs)
\$89 VIA

Inputs: 2 channels – User configured as 0-20mA or 0-20VDC
Sensor Power: Switched 12 VDC, up to 50 mA: user-selectable warm-up from 5 milliseconds to 2 minutes
Scaling: Linear scaling to user units
Accuracy: +/- 0.25% full scale

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Energy/Power



Power & Energy Meter
\$599
T-VER-E50B2

Works with CTs (T-MAG-XXX-XXX) to provide True RMS Power and Energy measurements including AC Current, AC Voltage, Amp Hour (Ah), Amps (A), Kilowatt Hours (kWh), Kilowatts (kW), Power Factor (PF), Volt-Amp Reactive (VAR), Volt-Amp Reactive Hour (VARh), Volt-Amps (VA), Volts (V), Watt Hours (Wh), Watts (W). The LCD screen on the face plate allows instant output viewing.

Ranges: 90 – 600 Volts AC; 5 to 32,000 Amps AC; Wye & Delta Configurations; One to Three phase AC System

Measurement Type: True RMS up to the 21st Harmonic 60 Hz

Accuracy: ANSI 12.20 0.5%, IEC 62053-22 Class 0.5S

	√	√	√	√	√	√	√	CE
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120	



AC Voltage
\$139 T-CON-ACT-xxx
 11.4 x 7.3 x 3.25 cm
 (4.49 x 2.87 x 1.28 in)
 300 g (10.6 oz)

Ranges: 90 to 150 or 180 to 300 volts RMS

Accuracy: 0.1% of span

Self-powered transmitter for monitoring sine wave, single-phase 60Hz AC voltage. Requires 4-20mA Input Cable (CABLE-4-20mA) for use with HOBO U12 loggers.

				√	√			CE
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120	



Split-Core AC Current Sensors
\$90-\$115 CTV-x
 Cable length: 1.8 m (6 ft)

Ranges: 0-20, 0-50, 0-100, 0-200, 0-600

Accuracy: ± 4.5% of full scale

				√	√			CE
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120	



AC Current Switch
\$89 CSV-A8

Range: .5 to 175 Amps continuous

						√	√	CE
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120	



AC Current
\$30 T-MAG-0400-XX

Ranges: 0-5, 0-10, 0-20, 0-50, 0-75 Amps

Accuracy: ±1% (from 10% to 130% of rated voltage)

	√	√					√	CE
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120	

	Sales & Support: (435) 755-0774 http://www.inmtn.com info@inmtn.com

Sensors



AC Current
\$55-\$65 T-MAG-SCT-XXX

Ranges: 0-5, 0-20, 0-50, 0-100, 0-200, 0-600 Amps
Accuracy: ±1% (from 10% to 130% of rated voltage)

	√	√				√	CE
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



AC Voltage
\$75 T-MAG-SPT-XXX

Ranges: 0-150, 0-300, 0-600 volts
Accuracy: ±1% (from 10% to 130% of rated voltage)

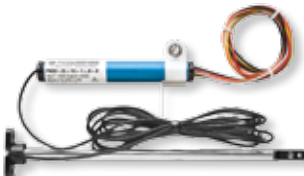
	√	√				√	
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Air Velocity Sensor
\$235 T-DCI-F900-S-P
T-DCI-F900-S-O

Ranges: 0.15 to 10 m/s (30 to 1969 fpm)
Accuracy: Greater of 10% of reading or +/- 0.05 m/s or 1% full-scale
Ranges: 0.15 to 5 m/s (30 to 985 fpm)

	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Air Velocity Sensor
\$319 T-DCI-F900-L-P
T-DCI-F900-L-O

Ranges: 0.15 to 10 m/s (30 to 1969 fpm)
Accuracy: Greater of 10% of reading or +/- 0.05 m/s or 1% full-scale
Ranges: 0.15 to 5 m/s (30 to 985 fpm)


	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Carbon Dioxide/Temp
\$465 TEL-7001

Ranges: 0 to 2500 ppm CO₂ , 0° to 40°C (32° to 104°F)
Accuracy: ±50ppm or ±5% of reading; ±1°C (±2°F)

	√	√		√	√		CE
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Monitoring & Control Systems

Sales & Support:
(435) 755-0774
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info@inmtn.com



Compressed Air Flow Meter
\$495 T-CDI-5200-10S

Ranges: 1 to 80 SCFM
Accuracy: calibrated range: 5% of reading plus 1% of F.S. between 40° and 120° F
Can be configured for either analog or pulse output.

	√	√	√		√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Compressed Air Flow Meter
\$629 T-CDI-5400-20S

Ranges: 3 to 350 SCFM (3 to 600 SCFM extended range)
Accuracy: calibrated range: 5% of reading plus 1% of F.S. between 40° and 120° F
Can be configured for either analog or pulse output.

	√	√	√		√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Split-Core Bi-Polar DC Transducer
\$229 T-VER-971BP-200

Ranges: -200 to 200 Amps DC
Accuracy: +/- 0.5A F.S.

	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Split-Core 200A DC Transducer
\$205 T-VER-H970-200

Ranges: 0 to 200 Amps DC (selectable 0-50, 0-100, 0-200)
Accuracy: +/- 3% F.S.

	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120

	Sales & Support: (435) 755-0774 http://www.inmtn.com info@inmtn.com



Differential Air Pressure Transducer with LCD
\$220 T-VER-PXU-L

Ranges: User selectable: 0.1; 0.25; 0.50; 1.0; 2.5; 5.0; 10.0 "WC (inches of water column)
Accuracy: +/- 1% F.S. of selected range

	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Differential Air Pressure Transducer
\$195 T-VER-PXU-X

Ranges: User selectable: 0.1; 0.25; 0.50; 1.0; 2.5; 5.0; 10.0 "WC (inches of water column)
Accuracy: +/- 1% F.S. of selected range

	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Gauge Pressure
\$190 T-ASH-G2-XXX

Ranges: 0-100, 0-200, 0-500 psig
Accuracy: ±1% of span from -20° to 85°C (-4° to 185°F)

	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120




kWh Transducer
\$229-\$269
T-WNB-3X-XXX

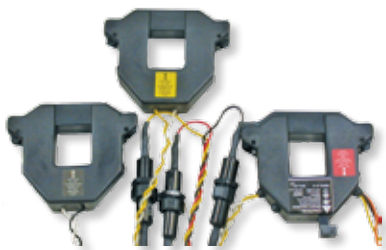
Works with CTs (T-MAG-XXX-XXX) to provide True RMS kilowatt hours of energy used, even for loads with non-sinusoidal waveforms.
Ranges: 208/240 VAC and 480 VAC ±15% Delta and Wye systems
Accuracy: ±0.45% of reading ±0.05% FS through 25th harmonic

	√	√	√		√	√	√
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120





Sales & Support:
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<http://www.inmtn.com>
info@inmtn.com



kW Transducer
\$815 T-VER-8044-100

Ranges: 3 phase, 50/60 Hz, 480 VAC, 0 to 100 Amps
Accuracy: ±3% per ANSI C12.1 (from 10% to 100% of CT rating)

	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



12-bit Temperature
\$95-\$120 S-TMB-M0xx
2 m, 6 m, 17 m
cable lengths available:
(6.5 ft, 20 ft, 56 ft)

Range: -40° to 75°C (-40° to 212°F)
Accuracy: ± 0.21° from 0° to 50°C (±0.38° from 32° to 122°F)
Resolution: 0.03° from 0° to 50°C (0.054° from 32° to 122°F)
Environment: Sensor tip and cable rated for 1-year immersion in fresh water ≤ 50°C (122°F)
Response Time: < 3 minutes (to 90% in airflow of 1 m/s)
Solar radiation shield (RS3) recommended for accurate temperature measurements in sunlight.

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Air/Water/Soil/Temperature
\$32-\$42 TMCx-HD

Sensor diameter: 0.5 cm (0.2 in) diameter
Cable lengths: 0.3, 1.8, 6.1, 15.2 m (1, 6, 20, 50 ft) available

Range: -40° to 100°C (-40° to 212°F) in air;
-40° to 50°C (-40° to 122°F) in water or soil
Accuracy: ± 0.21°C from 0° to 50°C (0.38°F from 32° to 122°F)
Resolution: 0.03° @ 25°C (0.05° @ 77°F)
Response time: 3 minutes (to 90% in airflow 1 m/s); 1 minute in water

Note: Sensor tip and cable immersion in fresh water up to 50°C (122°F) for one year; radiation shield (RS3) recommended for use in sunlight

				√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120




Stainless Steel Temperature Probe
\$79 TMC6-HC

0.3 cm diameter x 10.2 cm (0.12 in x 4 in)
cable length: 1.8 m (6 ft)

10.2 cm (4 in) food-grade stainless-steel probe with pointed tip; 0.3 cm (0.12 in) diameter, 1.8 m (6 ft) cable
Range: -40° to 100°C (-40° to 212°F) in air;
-40° to 50°C (-40° to 122°F) in water or soil
Accuracy: ± 0.21°C from 0° to 50°C (0.38°F from 32° to 122°F)
Resolution: 0.03° @ 25°C (0.05° @ 77°F)
Response time: 3 minutes (to 90% in air moving 1 m/s); 15 seconds in stirred water

				√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Sales & Support:
(435) 755-0774
<http://www.inmtn.com>
info@inmtn.com



Temperature Sensor
\$35 TMC6-HE
 0.3 cm diameter x 10.2 cm
 (0.12 in x 4 in)
 cable length: 1.8 m (6 ft)

Range: -40° to 100°C (-40° to 212°F) in air
 Accuracy: ± 0.21°C from 0° to 50°C (0.38°F from 32° to 122°F)
 Resolution: 0.03 @ 20°C (0.05° @ 68°F)
 Response time: In air: 2 minutes typical to 90% in air moving 1 m/s
On a pipe: Typically 2 times faster than the TMCX-HD. Typically less than 1 minute to 90%.

				√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Temperature/RH
\$189-\$195 S-THB-M00x
 cable lengths available
 2 m, 8 m, (6.5 ft, 26 ft)

Ranges: -40° to 75°C (-40° to 167°F); 0 to 100%
 Accuracy: RH from -40° to 75°C (-40° to 167°F)
 ± 0.21° @ 25°C (±0.38° @ 77°F);
 ± 2.5% typical, 3.5% maximum, from 10 - 90% RH
 Resolution: 0.02° @ 25°C (0.04° @ 77°F); 0.1% RH @ 25°C (77°F)
 Response Time: Temp: 5 minutes, RH: 5 minutes (to 90% in airflow of 1 m/s)
 Data Channels: 2
Solar radiation shield (RS3) recommended for accurate temperature measurements in sunlight.

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Volatile Organic Compound (VOC) Sensor
\$2,995 T-ION-TVOC

Range: selectable 0 - 10, 0 - 100, 0 - 1000 ppm (parts per million)
 Accuracy: (0-10 and 0-100 ppm) ±2%; (100-1000 ppm) ±5%
 Linearity: (0 - 100 ppm) > 98%
 Response time: sensor T90 < 5 sec.

	√	√		√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Water Flow Meter Sensor
\$105 T-MINOL-130

Ranges: 0 to 22 gpm (gallon per minute)
 Accuracy: 0.25-1 gpm

	√	√		√	√	√	√
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



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Analog and Digital Adapters for Connecting Sensors



4-20mA Cable
\$25 CABLE-4-20mA
 45.7 cm (18 in) cable
 with 8.9 cm (3.5 in)
 tinned braided wire leads

Range: 0 to 20.1 mA
 Accuracy: ± 0.02 mA, $\pm 2.5\%$ of reading
 Resolution: 0.03% of full scale

	√	√	√				
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Voltage Input Adapter Cable
\$12 CABLE-ADAPX
 Length 1.9m (6.3 ft.)
 Weight 38.6g (1.4 oz.)

Accuracy: CABLE-ADAP5 provides user analog sensor input of 0-5 Vdc max.
 CABLE-ADAP10 provides user analog sensor input of 0-10 Vdc max.
 Max. error of 0.2%

				√	√		
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



Voltage Input Cable
\$9 CABLE-2.5-STEREO
 1.8 m (6 ft) cable with 1.27 cm
 (0.5 in) tinned braided wire leads

For voltage input specifications, refer to the external input specifications of the model you will be using.

				√	√	√	
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120



FlexSmart Analog Module (2 channels)
\$89 S-FS-CVIA

User-configurable
 Ranges: 0-20mA, 0-20VDC (suitable for 2.5, 5, and 10V sensors)
 Accuracy: $\pm 0.25\%$ FS over range selected from 50mV to FS
Provides 12V sensor excitation

		√					
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120




FlexSmart Analog Module (2 channels) w/modular plug
\$105 S-FS-TRMSA-D
 3.5cm x 5.7cm x 1.9cm (1.38 in.
 x 2.25 in. x 0.75 in.)

Range: 5mV to 512mV input; compatible with 333mV FS output sensors
 Accuracy: $\pm 0.3\%$ of reading $\pm 0.5\%$ FSR*
**Crest factor may cause additional error*

	√	√					
Compatible with:	U30	H22-001	H21-002	U12	ZW	UX90	UX120





Sales & Support:
 (435) 755-0774
<http://www.inmtn.com>
info@inmtn.com

Onset offers a range of data retrieval and communication options to make data offload from HOBO loggers fast and easy.



HOBO U-Shuttle
\$260 U-DT-1
 11.0 x 6.9 x 2.7 cm
 (4.35 x 2.7 x 1.05 in)
 153 g (5.4 oz)

- Enables convenient, easy data offload from HOBO U-Series, H21 and H22 data loggers and UX 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

Specifications:

4 MB non-volatile memory: 504 8K loggers, 63 64K loggers, 7 readouts of 512k loggers, 1 readout of a 4mb logger.
 Operating temperature range 0° to 50°C (32° to 122°F)
 Battery life: 1-year (typical) — user-replaceable
 Requires HOBOWare Pro Software 2.2 or greater



HOBO U30 Shuttle
\$260 U-DT-2
 11.0 x 6.9 x 2.7 cm
 (4.35 x 2.7 x 1.05 in)
 153 g (5.4 oz)

- 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

Specifications:

4 MB non-volatile memory: 7 readouts of 512K loggers
 Operating temperature range 0° to 50°C (32° to 122°F)
 Battery life: 1-year (typical) 50 complete memory fills - user replaceable
 Requires HOBOWare Pro Software 2.6 or greater



HOBO Waterproof Shuttle
\$230 U-DTW-1
 15.2 x 4.8 cm
 (6.0 x 1.9 in)
 150 g (5.3 oz)

- 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 m
- Checks and indicates its own battery status

Specifications:

4 MB non-volatile memory: up to 63 loggers
 Operating temperature range 0° to 50°C (32° to 122°F)
 Battery life: 1-year (typical) — user-replaceable
 Requires HOBOWare Pro Software



Optic USB Base Station
\$115 BASE-U-4
 15.2 x 4.8 cm
 (6.0 x 1.9 in)
 150 g (5.3 oz)

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

Specifications:

Operating temperature range 0° to 50° C (32° to 122° F)
 Cable length 183 cm (6 ft)
 Offloads full 64K logger in 30 seconds



Pendant Base Station
\$65 BASE-U-1
 9.5 x 4 x 2.8 cm
 (3.75 x 1.6 x 1.1 in)
 45 g (1.6 oz)


- Provides fast optical infrared (IR) communications for easy launch and readout of all HOBO Pendant loggers
- Connects via USB cable to host computer while Coupler attaches the logger to Base Station
- Splash-resistant

Specifications:

Operating temperature range 0° to 50° C (32° to 122° F)
 Cable length 183 cm (6 ft)
 Offloads full 64K logger in 30 seconds



Communications




Monitoring & Control Systems

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HOBO Shuttle and Base Station Compatibility						
		U-Shuttle Data Transporter U-DT-1	U30 Shuttle Data Transporter U-DT-2	Waterproof Shuttle U-DTW-1*	Pendant Base Station BASE-U-1	Optic USB Base Station BASE -U-4*
		\$260	\$260	\$230	\$65	\$115
Storage Capacity	504 loggers/8k memory	✓				
	63 loggers/64k memory	✓		✓		
	7 loggers/512k memory	✓	✓			
HOBO UX90		✓				
HOBO UX120		✓				
HOBO U10		✓				
HOBO U11		✓				
HOBO U12 (12-bit Family)		✓				
HOBO U12 Outdoor		✓				
HOBO U12 Stainless		✓				
HOBO U24 Conductivity		√B		✓		✓
HOBO Pendant loggers		√B		✓	✓	✓
Pendant Event		√B		✓	✓	✓
HOBO Water Level Loggers		√B		✓		✓
HOBO Water Temp Pro V2		√B		✓		✓
HOBO Pro V2		√B		✓		✓
TidbiT Temp V2		√B		✓		✓
Rain Gauge		√B		✓	✓	✓
HOBO Micro Station		✓	✓			
HOBO Energy Logger		✓	✓			
HOBO U30 Remote Monitoring Systems			✓			

Products with a "√B" require a base station for use with the U-Shuttle. * Couplers are included

Ordering Information		
Data Shuttle and Base Stations		
HOBO Waterproof Shuttle with Couplers*	U-DTW-1	\$230
HOBO U-Shuttle*	U-DT-1	\$260
HOBO U30 Shuttle*	U-DT-2	\$260
Pendant Base Station	BASE-U-1	\$65
Optic USB Base Station with Couplers	BASE-U-4	\$115
*Data Shuttles require HOBOWare Pro for offload. See page 52 for details. Prices subject to change		



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NIST Certification

NIST Certification: Test and certify the accuracy of new and previously purchased Onset temperature loggers using standards traceable to the U.S. National Institute of Standards & Technology (NIST). Each logger certified receives a certificate showing the logger's temperature accuracy versus a NIST-traceable standard. Depending on the product, available from -30 to 120°C. Onset's NIST traceable certification complies with ISO 10012-1:1992 (E) requirements (excluding pressure calibration certificates). Onset also offers a Certificate of Compliance which certifies logger compliance with the specifications described in its product manual.

Computer Interface Cables

	Part Number	Price
NIST Traceable Setup/logger	NIST-SETUP	\$35
NIST per-point/channel	NIST-TEMP-POINT	\$35
Interface cable for most PCs	CABLE-PC-3.5	\$10
USB Cable for HOBO U-series	CABLE-USBMB	\$10
USB Interface Cable	ADAPT-SER-USB	\$49

Replacement Batteries

Batteries for HOBO UX90, U10, U11, U12, (box of 6) Pendant	HRB-TEMP	\$15
Replacement 4.5 Ahr battery for U30, w/ cable	HRB-U30-S045	\$25
Replacement 10 Ahr battery for U30, w/ cable	HRB-U30-S100	\$39
Battery for HOBO Pro v2 (U23) (single)	HP-B	\$13

Subminiature Connectors for HOBO Thermocouple Logger


for Type J wire	SMC-J	\$9
for Type K wire	SMC-K	\$9
for Type T wire	SMC-T	\$9

Additional Replacement Parts

Replacement O-Ring Kit for U12-015-03 Stainless Temp EPDM	U12-015-03-ORING-KIT	\$20
Viton	U12-015-ORING-E	\$13
	U12-015 ORING-V	\$16
Replacement Parts Kit (U12-008)	H8x4-BK	\$29
Set of two U-bolts (U12-008)	U-BOLT-KIT	\$6
Replacement RH Sensor for HOBO U23-001	HUM-RHPCB-1	\$65
Replacement RH Sensor for HOBO U23-002/S-THB/ZW-005 & ZW-007	HUM-RHPCB-2	\$65
Replacement Sensor for HOBO U14-001	HUM-RHPCB-3	\$55 (S/N less than 9847173)
	HUM-RHPCB-3A	\$55 (S/N greater than 9847173)
Desiccant 25 pack for U23, UA-001/2/4	DESICCANT1	\$13
Desiccant 25 pack for H07, U-DTW-1	DESICCANT2	\$18
Desiccant 25 pack for UA-003	DESICCANT5	\$12
Desiccant Pack for U12-008	DESIC-PACK	\$8
Desiccant pack for HOBO Micro Station, LCD CASE	85-DESICCANT6	\$7
Desiccant pack for U12-008	DESIC-PACK	\$8
25 small Desiccant Packs for UA and U23 Loggers	DESICCANT1	\$13
Replacement Parts Kit (UA-001/2/4)	UA-PARTSKIT	\$16
Replacement RH Cap Kit 5-pack (S-THB and U23-002 Cables)	HUM-RHCAP2	\$48
Replacement Sensor Cable for ZW-005 and ZW-007	CABLE-TEMP/RH	\$80
Replacement Sensor Cable for U23-002	CABLE-U23-002	\$90

Additional Replacement Parts (continued)

Prices subject to change



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Optic USB Base Station and HOBO Waterproof Shuttle Replacement Couplers

	Part Number	Price
Coupler for HOBO Pendant (with BASE-U-1)	COUPLER-UA	\$16
Coupler for HOBO Pendant (with BASE-U-4 or U-DTW-1)	COUPLER2-A	\$11
Coupler for HOBO Water Level Logger (U20)	COUPLER2-B	\$11
Coupler for HOBO Water Temp Pro v2 (U22) & Conductivity U24	COUPLER2-C	\$11
Coupler for TidbiT v2 (UTBI)	COUPLER2-D	\$11
Coupler for HOBO Pro v2 (U23)	COUPLER2-E	\$11

Additional Accessories

For HOBO 4-Channel Pulse Data Logger		
Spare Terminal Blocks	A-UX120-TERM-BLOCK	\$9
For HOBO E50B2 Power & Energy Meter		
Single Phase Fuse Kit	T-VER-AH02	\$80
Wiring Kit	A-E50B2-LEADSET	\$37
For HOBO Water Temp Pro v2		
Protective Boot, black (Cap included)	BOOT-BLK	\$19
Protective Boot, white (Cap included)	BOOT-WHT	\$19
Replacement Cap for Protective Boot, black	85-CAPLUG-H20-B	\$2
Replacement Cap for Protective Boot, white	85-CAPLUG-H20-W	\$2
For TidbiT v2 Temp Logger		
Protective Boot 5-pack, black	BOOT-TIDBIT-BK	\$25
Protective Boot 5-pack, white	BOOT-TIDBIT-WH	\$25
For HOBO Water Level Logger		
Water Level Logger carrying case	U20-CASE-1	\$30
Protective Housing	HOUSING-U2X	\$38
1/16 in. diameter Teflon-coated stainless steel cable		
50 ft	CABLE-1-50	\$59
300 ft	CABLE-1-300	\$260
Crimp Sleeve (12-pack) for above cables	CABLE-1-CRIMP	\$29
For HOBO Conductivity Logger		
Protective Housing	HOUSING-U2X	\$38
Solar Radiation Shields		
Solar Radiation Shield (U23-001, 004)	RS1	\$79
Assembled Solar Radiation Shield (U23-001, 004, UA-00x-xx, U22, UTBI)	M-RSA	\$105
Solar Radiation Shield (W-TMB, U23-002, 003, S-THB-M0xx, S-TMB-M0xx)	RS3	\$59
Mounting Clamp (for mounting HOBO U23-001 in the RS1 & M-RSA ,U23-004)	U23-RS-CLAMPKIT	\$6


Submersible Cases and Accessories

To use HOBO U10 and U12 loggers underwater		
Submersible case, dome-top, white or grey	SUBCASE-WH	\$39
25 Desiccant packs for submersible cases	DESICCANT2	\$18
Sealant for submersible cases	85-ORING	\$2

Factory Battery Replacement and Calibration Services

Contact Onset for RMA# for factory battery replacements Email: loggerhelp@onsetcomp.com Phone: 508-759-9500/1-800-LOGGERS		
Factory Battery Replacement for HOBO U12 Stainless Temp Logger (U12-015)	contact Onset	\$105
Factory Battery Replacement for HOBO U12 Stainless 5 in Probe Temp Logger (U12-015-02)	contact Onset	\$142
Factory Battery Replacement for HOBO Water Temp Pro v2 (U22-001)		\$48
Factory Battery Replacement for HOBO Water Level Logger & Calibration (U20)		\$198
Recalibration service w/3-point certificate of pressure accuracy for HOBO Water Level Logger (U20)		\$95

Prices subject to change



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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 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

One of the things that surprise many customers is that when they call Onset, a live person answers the phone. Our world-class technical service department is staffed by friendly, knowledgeable people who will listen carefully to your questions and guide you through any challenges that come up. Unlike many technology companies, Onset offers free technical support for the life cycle of your purchase.



"HOBO data logging systems are flexible and can be adapted for multiple monitoring requirements. Their ability to easily accommodate third party sensors is beneficial since our engineers don't know exactly what data-collection requirements they'll have down the road."

Ryan Thordson, energy engineer,
New York State Power Authority



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About Onset

Onset is the world's 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

Contact Us

Our goal is to make your data logging project a success. Our skilled Product Application Specialists are standing by to discuss your needs and recommend the right solution for your project.



-  Speak with a Product Application Specialist by calling **1-800-564-4377**
-  Email your inquiry to sales@onsetcomp.com
-  Go to **onsetcomp.com** to browse our white papers, application stories, videos, and webinars

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