

- temperature
- RH
- rainfall
- soil moisture
- wind speed & direction
- leaf wetness
- barometric pressure
- PAR
- solar radiation
- water level
- light intensity
- event
- pulse input
- voltage input
- 4-20mA input
- tilt/motion

Outdoor/Underwater Monitoring 2008

HUBO



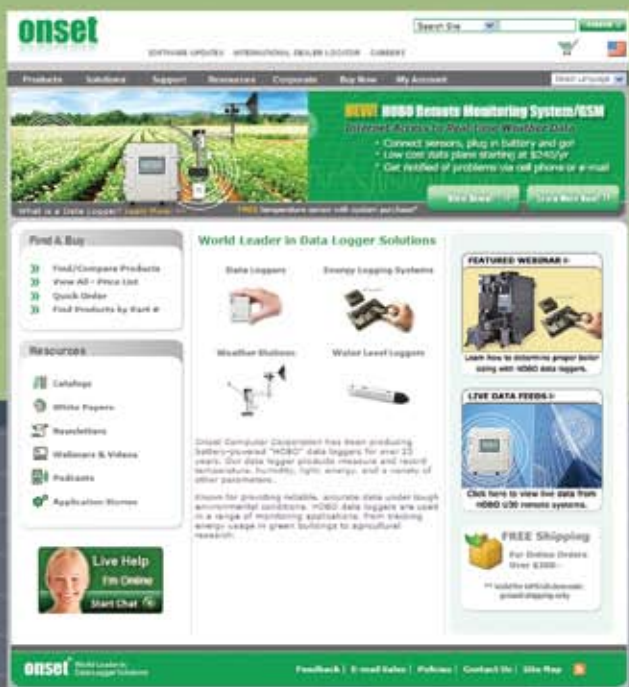
Data Loggers



NEW!

Wi-Fi Based Energy Monitoring System

- Provides real-time, remote access to energy and environmental data via Wi-Fi
- Rugged enclosure ensures reliable performance in indoor and outdoor environments
- Get notified of problems via cell phone or e-mail



Our new HOBO Water Level Kits include everything to start logging right away. **SEE PAGE 25**



Our new Soil Moisture Smart Sensors provide high-accuracy measurements in a range of soil types. **SEE PAGE 11**



Our data logger podcasts provide insider tips and techniques to help make your data logger projects successful.



FREE SHIPPING

Get free shipping with on-line purchases over \$200.

Valid for UPS U.S. domestic ground shipping only.

Visit us at onsetcomp.com to browse our full line of HOBO data logging solutions, shop our new online store, and access our Data Logger Resources Library.

Welcome


Thank you for your interest in Onset, the world leader in data logging solutions.

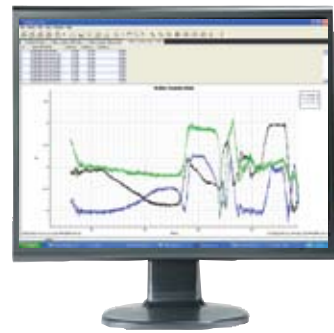
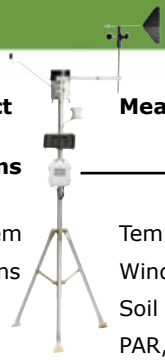
At Onset, we know how important your data is to you. Our products are designed from the ground up with quality and reliability foremost in mind.

In this catalog, you will find a wide range of data logging solutions, from our new wireless weather station to underwater temperature loggers.

For the very latest product updates and detailed product specifications, please visit us on the web at onsetcomp.com.



Product	Measurements	Page
Outdoor Monitoring Systems		
HOBO Remote Monitoring System	Temperature, Relative Humidity,	4 -15
HOBO Weather/Micro Stations	Wind Speed, Wind Direction, Rainfall, Soil Moisture, Solar Radiation, PAR, Barometric Pressure, Leaf Wetness, 4-20mA Input, Voltage Input, Pulse Input	7 -13
Outdoor Data Loggers		
HOBO Pro v2 Loggers	Temperature, Relative Humidity	16-17
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HOBO U14 LCD Logger	Temperature, Relative Humidity	22-23
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Underwater Data Loggers		
HOBO Pendant Loggers	Temperature, Light Intensity, Tilt/Motion/Acceleration in 3-axes	18-19
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- **Web-based environmental monitoring**
- **All electronics housed within a research grade, tamperproof enclosure**
- **Setup is quick and easy with plug-and-play sensors**
- **GSM Cellular, Wi-Fi and non-wireless options available**

Available Models Include:

HOBO® U30/GSM



\$799

- Internet access to real-time data
- Double weather proof, tamperproof enclosure
- Connect sensors, plug in battery, and go!

HOBO U30/Wi-Fi



\$724

- Connect sensors, plug in battery, and go!
- Ruggedized hardware, with integrated Wi-Fi
- Get notified of problems via cell phone or e-mail

HOBO U30/NRC



\$420

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

Research-grade dependability

The HOBO 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 systems' electronics are housed within a rugged double-weatherproof, tamperproof enclosure. This provides twice the protection and ensures years of reliable monitoring performance.



The HOBO Remote Monitoring System offers GSM cellular, Wi-Fi and non-wireless communications options.

Fast, easy deployment



The systems' plug-and-play architecture enables any combination of Smart Sensors to be plugged in without extensive user programming, wiring, or calibration.

Wide range of measurements

The HOBO U30 Remote Monitoring System can be configured with any of the following research-grade Smart Sensors (see page 9 for details):

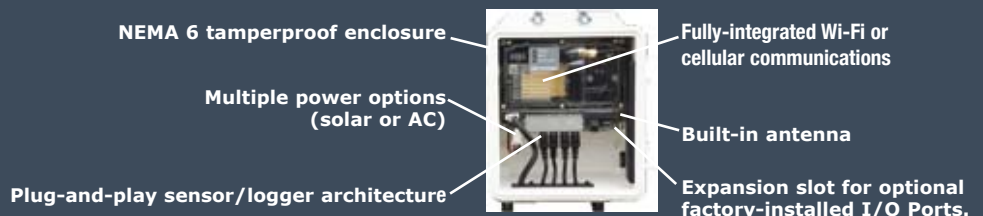
- Temperature
- Relative Humidity
- Rainfall
- Soil Moisture
- Wind Speed & Direction
- Leaf Wetness
- PAR
- Solar Radiation
- Pulse Input
- Barometric Pressure

An optional analog sensor port provides two analog inputs, and power with user-selectable warm-up time.

See our outdoor monitoring systems comparison chart on page 8.

Learn More:

- See specifications on page 6
- See comparison chart on page 8
- See pricing on pages 14-15



HOBO U30 Remote Monitoring Systems

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HOBOLink™

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



A secure web-based platform, HOBOLink provides users with password-protected accounts and 128-bit encrypted connection. You can keep your data entirely private, or make it accessible to others with a "Public Access" feature. Data can be provided in either text or HOBOWare® Pro format.



T-Mobile
authorized dealer

See page 14 for data service plans.




HOBOLink can automatically notify you via cell phone text message or e-mail when conditions exceed user-defined limits or if there is a sensor failure or low battery.



HOBO Remote Monitoring Systems Specifications

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Technical Specifications

GSM Wireless Communication	Quad-Band GSM/GPRS 850/900/1800/1900 MHz
Wi-Fi Wireless Communication	2.412 - 2.484 GHz, IEEE 802.11 b/g
Alarm Relay	User-configured as normally open, normally closed, or pulsed (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 104°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 of sensors, logging, alarms, and remote communication
Logging Interval	1 minute to 18 hours, user-specified
Station-to-Internet Upload Interval	10 minutes minimum, user-specified
Power	An Onset solar panel (1.2 w, 3 w, 6 w) or AC adapter is required
Battery Type	4 Volt, 10 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

Designed for stand-alone datalogging applications, HOBO Weather Stations offer reliable monitoring performance at industry-leading prices. Both the 15-channel HOBO Weather Station and 4-channel HOBO Micro Station accept Onset's full suite of plug-and-play Smart Sensors, and are battery-powered for up to one year.



The HOBO Weather/Micro Station can be configured with any of the following research-grade Smart Sensors (see page 9 for details):

- Temperature
- Relative Humidity
- Rainfall
- Soil Moisture
- Wind Speed & Direction
- Leaf Wetness
- Barometric Pressure
- PAR
- Solar Radiation
- Pulse Input
- Voltage Input
- 4-20mA Input

Learn More:
See pricing and ordering information on pages 8



HOBO Weather Station
\$420 H21-001
18 x 23 x 10 cm
(7 x 9 x 4 in)
0.9 kg (2 lbs)

- Up to 15 inputs for maximum system flexibility
- 10 sensor inputs, expandable to 15 with optional 1-to-2 sensor adapters
- Up to 10 voltage or 4-20 mA input adapters
- Built-in weatherproof communication port for use with remote communication accessories
- Mast mounting brackets included



HOBO Micro Station
\$199 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)

- Compact and low-cost with 4 sensor inputs
- Up to 2 voltage or 4-20mA input adapters
- Optional Adapter Cable (CABLE-HWS-F) required for connection to Onset-approved remote communications accessories
- Mount on 3.5 inch wide post; use optional mast mounting kit (M-MKA) for tripod (either CABLE-HWS-G or CABLE-HWS-F is required for mast mounting to provide proper grounding)

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

Several remote communications options are available for the HOBO Weather Station and Micro Station. See onsetcomp.com for details.

HOBO Outdoor Monitoring Systems Comparison Chart

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HOBO Outdoor Monitoring Systems

	HOBO Remote Monitoring System/GSM 	HOBO Remote Monitoring System/Wi-Fi 	HOBO Remote Monitoring System/NRC 	HOBO Weather Station 	HOBO Micro Station 
Product Number	U30-GSM	U30-WIF	U30-NRC	H21-001	H21-002
Price	\$799	\$724	\$420	\$420	\$199
Remote Communications	Yes	Yes	No	No	No
Internet access to real-time data	Yes	Yes	No	No	No
Enclosure	Double weatherproof tamperproof	Double weatherproof tamperproof	Double weatherproof tamperproof	Weatherproof	Weatherproof
Fully-integrated, expandable communications	Yes	Yes	No	No	No
* Solar power with rechargeable batteries	Yes*	Yes*	Yes*	No	No
Optional analog inputs with configurable sensor power	2	2	2	No	No
Smart Sensor compatible	Yes	Yes	Yes	Yes	Yes
# of inputs	5 expandable to 10	5 expandable to 10	5 expandable to 10	10 expandable to 15	4
USB connectivity	Yes	Yes	Yes	Requires Adapter	Requires Adapter
Operating Range	- 20 to 40C normal operation - 40 to 60C extended range (some limitations)	- 20 to 40C normal operation - 40 to 60C extended range (some limitations)	- 20 to 40C normal operation - 40 to 60C extended range (some limitations)	- 20 to 50C standard - 40 to 70C with optional Lithium batteries	- 20 to 50C standard - 40 to 70C with optional Lithium batteries
Battery Life Without External Power:	30 days (1hr connection interval)	30 days (1hr connection interval)	6 months (typical)	1 year (typical)	1 year (typical)
Data Storage Memory:	Unlimited in HOBOLink	Unlimited in HOBOLink	500,000 measurements	500,000 measurements	500,000 measurements

* Solar panel purchased separately.

HOBO Outdoor Monitoring Systems

Smart Sensors

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Wind Speed & Direction
\$520 S-WCA-M003
3 m (9.8 ft) Cable

	Speed	Direction
Range:	0 to 44 m/s (0 to 99 mph)	0 to 358°, 2° dead band
Accuracy:	Greater of ± 0.5 m/s (1.1 mph) or $\pm 4\%$ of reading	$\pm 5^\circ$
Resolution:	0.19 m/s (0.42 mph)	1.4°
Starting threshold:	≤ 0.5 m/s, (1.1 mph)	
Data channels:	3 (average wind speed, direction, and highest 3-sec gust) Survival to 54 m/s (120 mph) <i>Cross arm recommended for mounting. Grounding wire required for using this sensor with H21-002 Micro Station. Either the CABLE-HWS-G or CABLE-HWS-F can be used.</i>	



Wind Speed
\$229 S-WSA-M003
3 m (9.8 ft) Cable

Range:	0 to 45 m/s (0 to 100 mph)
Accuracy:	± 1.1 m/s (2.4 mph) or $\pm 4\%$ of reading, whichever is greater
Resolution:	0.38 m/s
Starting threshold:	≤ 1 m/s (2.2 mph)
Data channels:	2 (average wind speed and highest 2 sec gust) Survival to 54 m/sec (120 mph) <i>Cross arm or pole mount recommended (2x hose clamps required for pole mount). not recommended for use with The HOBO Remote Monitoring System.</i>



Barometric Pressure
\$119 S-BPA-CM10
10 cm (4 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) Additional temperature induced error of ± 5.0 mbar (0.148 in. Hg)
Resolution:	0.1 mbar (0.003 in. Hg) <i>Use inside logger enclosure to protect from direct exposure to the weather; not recommended for use with The HOBO Remote Monitoring System.</i>



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) Additional temperature induced error of ± 5.0 mbar (0.148 in. Hg)
Resolution:	0.1 mbar (0.003 in. Hg) <i>Includes cable ties for mast mounting Recommended for use with The HOBO Remote Monitoring System.</i>

HOBO Outdoor Monitoring Systems

Smart Sensors

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Photophysically Active Radiation (PAR)
\$210 S-LIA-M003
3 m (9.8 ft) Cable

Range: 0 to 2500 $\mu\text{mol}/\text{m}^2/\text{sec}$
Spectral range: 400 to 700 nm
Accuracy: $\pm 5 \mu\text{mol}/\text{m}^2/\text{sec}$ or $\pm 5\%$, whichever is greater in sunlight, Cosine corrected 0 to 80 degrees
Resolution: 2.5 $\mu\text{mol}/\text{m}^2/\text{sec}$
Light sensor bracket (M-LBA) and light sensor level (M-LLA) recommended.



Silicon Pyranometer
\$199 S-LIB-M003
3 m (9.8 ft) Cable

Range: 0 to 1280 W/m^2
Spectral range: 300 to 1100nm
Accuracy: $\pm 10 \text{W}/\text{m}^2$ or $\pm 5\%$, whichever is greater in sunlight, Cosine corrected 0 to 80 degrees
Resolution: 1.25 W/m^2
Light sensor bracket (M-LBA) and light sensor level (M-LLA) recommended.



Temperature/RH
\$175-\$185 S-THB-M00x
2 m, 8 m, (6.5 ft, 26 ft)
cable lengths available

Ranges: -40° to 75°C (-40° to 167°F); 0 to 100% RH from -40° to 75°C (-40° to 167°F)
Accuracy: $\pm 0.2^\circ$ @ 25°C ($\pm 0.36^\circ$ @ 77°F); $\pm 2.5\%$ 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: 8 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.



12-bit Temperature
\$90-\$115 S-TMB-M0xx
2 m, 6 m, 17 m
(6.5 ft, 20 ft, 56 ft)
cable lengths available

Range: -40° to 75°C (-40° to 167°F)
Accuracy: $\pm 0.2^\circ$ from 0° to 50°C ($\pm 0.36^\circ$ 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 $\leq 50^\circ\text{C}$ (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.

NIST-traceable temperature accuracy certification service available for all temperature sensors.

All smart sensors are CE compliant when used with H21-00x loggers.



Rainfall
\$389 0.2 mm: S-RGB-M002
0.01in: S-RGA M002
Cable 2 m (6.5 ft)

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: $\pm 1.0\%$ at up to 20 mm/hour or 1 in/hour
Comes with side bracket for post or tripod mount and feet for surface mount.



Leaf Wetness
\$105 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: $\pm 5\%$
Resolution: 0.59%
Includes mounting bracket. Adjustable angle allows better matching to leaf characteristics.

HOBO Outdoor Monitoring Systems

Smart Sensors

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Soil Moisture-ECHO-20
\$139 S-SMA-M005
 254 x 32 x 1.0 mm
 (10 x 1.25 x 0.04 in)
 Cable 5 m (16 ft)

Range: -0.29 to 1.4475 m³/m³ volumetric water content (full scale)
 Accuracy: Typical: ±0.041 m³/m³ (±4%) for most soils,
 ±0.020 m³/m³ (±2%) with soil-specific calibration
 Resolution: ±0.0004 m³/m³ (±0.04%)



Soil Moisture-ECHO-10
\$139 S-SMB-M005
 152 x 32 x 1.0 mm
 (6 x 1.25 x 0.04 in)
 Cable 5 m (16 ft)

Range: -0.376 to 1.964 m³/m³ volumetric water content (full scale)
 Accuracy: Typical: ±0.041 m³/m³ (±4%) for most soils,
 ±0.020 m³/m³ (±2%) with soil-specific calibration
 Resolution: ±0.0006 m³/m³ (±0.06%)



Soil Moisture-ECHO-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)

Range: -0.401 to 2.574 m³/m³ volumetric water content (full scale)
 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%)



4-20mA
Input Adapter
\$79 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



0-5V Input Adapter
\$69 S-VIA-CM14

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



Pulse Input Adapter
Electronic Switch Version
\$69 S-UCC-M006

Compatibility: Electronic switch closures (FET, open-collector outputs, or CMOS-level logic)
 Maximum input frequency: 120Hz (120 pulses per second)
 Range: 0-65,533 counts per logging interval
 User connection: 2-wire input (24 AWG wire; 2 wire nuts included)
 Preferred pulse polarity: Active low



Pulse Input Adapter
Contact Closure Version
\$69 S-UCD-M006
 6.5 m (21 ft) Cable

Compatibility: Contact closures (tipping-bucket rain gauges or reed switches)
 Maximum input frequency: 2Hz (2 pulses per second)
 Range: 0-65,533 counts per logging interval
 User connection: 2-wire input (24 AWG wire; 2 wire nuts included)
 Preferred switch type: Normally-open

HOBO Outdoor Monitoring Systems

Accessories

onset

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

2 Meter Tripod*

\$50 #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

\$165 #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*

\$140 #M-TPA

- 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

\$245 #M-TPA-KIT

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



Half Cross Arm

\$40 M-CAB

Half cross arm (49 cm or 19.2 in)



Solar Radiation Shield

\$59 RS3

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



Light Sensor Bracket

\$25 M-LBA

Includes leveling screws
and u-bolts for mast mounting



Light Sensor Level

\$30 M-LLA

Purchase one for use on any number
of light sensors.



Smart Sensor Extension Cables

\$25-\$40 S-EXT-M0xx

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

Use individually or connected
together to optimize sensor
placement. A weatherproof
housing is required for
outdoor connections
(Part# S-EXT-CASE \$20).
Limited to 100 meters
per data logger.

Use individually or connected
together to optimize sensor
placement. A weatherproof
housing is required for
outdoor connections
(Part# S-EXT-CASE \$20).
Limited to 100 meters
per data logger.



HOBO Outdoor Monitoring Systems

Ordering Guide

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HOBO Weather Stations

HOBO Weather Station Logger	H21-001	\$420	Radio Modem, Remote Modem, Software and Accessories		
HOBO Weather Station Logger & Smart Sensor Kit	H21-SYS-A	\$1214	2 m Weatherproof Comm. Cable		
HOBO Micro Station Logger	H21-002	\$199	CABLE-HWS2	\$25	
HOBO Micro Station Mast Mounting Kit	M-MKA	\$20	17 m Weatherproof Comm. Cable		
	CABLE-HWS-G	\$15	CABLE-HWS17	\$50	
HOBO Micro Station Grounding Wire			Lithium Batteries, 4 pack	HWSB-LI	\$20
			<i>(for Remote Modem)</i>		
<i>(required for Wind Speed/Direction sensor or tripod mounting)</i>			HOBO Micro Station Adapter Cable		
Micro Station Adapter Cable	CABLE-HWS-F	\$39		CABLE-HWS-F	\$39
<i>(includes Grounding Wire)</i>					
Lithium Batteries, 4 pack	HWSB-LI	\$20			

SolarStream products are purchased directly from Upward Innovations at www.upwardinnovations.com.

Common to all Systems

Smart Sensor Ordering

Temperature/RH:		
2 m cable	S-THB-M002	\$175
8 m cable	S-THB-M008	\$185
Temperature:		
2 m cable	S-TMB-M002	\$90
6 m cable	S-TMB-M006	\$100
17 m cable	S-TMB-M017	\$115
Wind Speed/Direction	S-WCA-M003	\$520
Wind Speed	S-WSA-M003	\$229
Rain Gauge: (.01 in)		
2 m cable	S-RGA-M002	\$389
Rain Gauge: (0.2 mm)		
2 m cable	S-RGB-M002	\$389
Soil Moisture (ECH0-20)	S-SMA-M005	\$139
Soil Moisture (ECH0-10)	S-SMB-M005	\$139
Soil Moisture (ECH0-5)	S-SMC-M005	\$139
Leaf Wetness	S-LWA-M003	\$105
PAR	S-LIA-M003	\$210
Silicon Pyranometer	S-LIB-M003	\$199
Pulse Input Adapter:		
-Electronic Switch	S-UCC-M006	\$69
-Contact Closure	S-UCD-M006	\$69

*HOBO Remote Monitoring System has 15 input data channels.
The total smart-sensor cable length is limited to 100 m.*

Sensor Mounting Accessories

Smart Sensor Extension Cables limited to 100 m of total cable length		
per logger <i>(optional for use individually or combined).</i>		
5 m length	S-EXT-M005	\$25
10 m length	S-EXT M010	\$30
25 m length	S-EXT-M025	\$40

Sensor Mounting Accessories *(continued)*

Weatherproof Connection Housing		
	S-EXT-CASE	\$20
<i>(required for outside connections)</i>		
Half Cross Arm	M-CAB	\$40
<i>(recommended for use with wind sensors)</i>		
Solar Radiation Shield	RS3	\$59
<i>(for use with temperature and temp/RH sensors)</i>		
Light Sensor Bracket	M-LBA	\$25
<i>(for mounting PAR and solar radiation sensors on masts or flat vertical surfaces)</i>		
Light Sensor Level	M-LLA	\$30
<i>(recommended for installing PAR and solar radiation sensors)</i>		
Tripod/Masts and Accessories		
2 m Tripod with Mast		
<i>(M-SKB recommended)</i>	M-TPB	\$50
Complete 2 Meter Tripod Kit	M-TPB-KIT	\$165
3 m Tripod with Mast		
<i>(M-SKA recommended)</i>	M-TPA	\$140
Complete 3 m Tripod Kit	M-TPA-KIT	\$245
1.5 m Mast	M-TPB	\$20
Guy Wire Kit	M-GWA	\$35
1/4 in Stake Kit	M-SKB	\$10
1/2 in Stake Kit	M-SKA	\$25
Grounding Kit	M-GKA	\$40
<i>(does not provide protection from direct lightning strikes)</i>		
Mast Level	M-MLA	\$12
<i>(recommended for installing masts or tripods)</i>		

HOBO U30 Remote Monitoring Systems Ordering Guide

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HOBO Remote Monitoring Systems with GSM Communications	GSM Cellular to Internet	U30-GSM	-	----	-	---	-S100	-	----	\$799
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
HOBOLink/T-Mobile Data Service*	10 minute calling (100MB)	102								\$699/1yr
	20 calls per day (5 MB)	104								\$420/1yr
	1 call per day (0.5 MB)	105								\$240/1yr
HOBOLink/AT&T Data Service*	10 minute calling (50 MB)	202								\$1020/1yr
	20 minute calling (20 MB)	203								\$828/1yr
	20 calls per day (5 MB)	204								\$540/1yr
	1 call per day (0.5 MB)	205								\$300/1yr

See onsetcomp.com for the latest selection of service plans.

*Early termination fees apply. A \$200 fee will be assessed for terminating the service plan within 30 days. No refund will be applied for terminating the plan after 30 days.

HOBO Remote Monitoring Systems without remote communications	No remote communication	U30-NRC	-	----	-	-----	-000			\$420
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 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

HOBO Remote Monitoring Systems with Wi-Fi Communications**	Wi-Fi to Internet **	U30-WIF	-	----	-	-----	-	----		\$724
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	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.

Software (one required)

HOBOWare Pro (Windows)
HOBOWare Pro (Mac)

BHW-PC
BHW-MAC

\$99
\$99

HOBO U30 Remote Monitoring Systems

Ordering Guide

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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

Smart Sensors

Temperature			
2-m cable	S-TMB-M002		\$90
6-m cable	S-TMB-M006		\$100
17-m cable	S-TMB-M017		\$115
Temp/RH			
2-m cable	S-THB-M002		\$175
8-m cable	S-THB-M008		\$185
Wind Speed/Direction	S-WCA-M003		\$520
Rain Gauge: (.01 in)	S-RGA-M002		\$389
Rain Gauge: (0.2 mm)	S-RGB-M002		\$389
Soil Moisture (ECHO 20)	S-SMA-M005		\$139
Soil Moisture (ECHO 10)	S-SMB-M005		\$139
Soil Moisture (ECHO 5)	S-SMC-M005		\$139
Leaf Wetness	S-LWA-M003		\$105
PAR	S-LIA-M003		\$210
Solar Radiation	S-LIB-M003		\$199
Barometric Pressure	S-BPB-CM50		\$249
Pulse Input Adapter:			
-Electronic Switch	S-UCC-M006		\$69
-Contact Closure	S-UCD-M006		\$69

Sensors that require Pulse Input Adapter

kWh			
Wye config	208/240	T-WNB-3Y-208	\$270
Delta/Wye config	208/240	T-WNB-3D-240	\$280
Delta/Wye config	480	T-WNB-3D-480	\$295
Veris kWh			
1-phase, 300 Amp		T-VER-8051-300	\$642
3-phase, 800 Amp		T-VER-8053-800	\$849
Pulse Input Adapter		S-UCC-M006	\$69

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			
0.25 in WC		T-SET-265-R25	\$165
1 in WC		T-SET-265-001	\$165
2.5 in WC		T-SET-265-2R5	\$165
5 in WC		T-SET-265-005	\$165
10 in WC		T-SET-265-010	\$165
CO ₂ /Temp		TEL-7001	\$465
CO ₂ /Temp Port Cable		CABLE-2070	\$35
kW		T-VER-8044-100	\$815
DC Duct-Mount Temp/RH		T-VAI-HMD-40Y	\$290
Amperage		T-VER-H970-080	\$205

Sensors that require True RMS Adapter

TRMS Module	S-FS-TRMA-D	\$100
AC Amperage		
0-5 Amp	T-MAG-SCT-005	\$50
0-20 Amp	T-MAG-SCT-020	\$50
0-50 Amp	T-MAG-SCT-050	\$50
0-100 Amp	T-MAG-SCT-100	\$50
0-200 Amp	T-MAG-SCT-200	\$50
0-600 Amp	T-MAG-SCT-600	\$55
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

Tripod/Masts and Accessories

2m Tripod with Mast (M-SKB recommended)	M-TPB	\$50
Complete 2 Meter Tripod Kit	M-TPB-KIT	\$165
3m Tripod with Mast (M-SKA recommended)	M-TPA	\$140
Complete 3 Meter Tripod Kit	M-TPA-KIT	\$245
3 m Mast	M-MPA	\$40
1.5 m Mast	M-TPB	\$20
Guy Wire Kit	M-GWA	\$35
1/4 in. State Kit	M-SKB	\$10
1/2 in. State Kit	M-SKA	\$25
Grounding Kit	M-GKA	\$40
<i>(does not provide protection from direct lightning strikes)</i>		
Mast Level	M-MLA	\$12
<i>(recommended for installing masts or tripods)</i>		
Half Cross Arm	M-CAB	\$40
<i>(recommended for use with wind sensors)</i>		
Solar Radiation Shield	RS3	\$59
<i>(for use with temperature and temp/RH sensors)</i>		
Light Sensor Bracket	M-LBA	\$25
<i>(for mounting PAR and solar radiation sensors on masts or flat vertical surfaces)</i>		
Light Sensor Level	M-LLA	\$30
<i>(recommended for installing PAR and solar radiation sensors)</i>		
Smart Sensor Extension Cables		
<i>(total cable length of all sensor cables is limited to 100 m (300 ft))</i>		
5-m length	S-EXT-M005	\$25
10-m length	S-EXT-M010	\$30
25-m length	S-EXT-M025	\$40
1 to 2 Sensor Adapter	S-ADAPT-5	\$18
<i>This allows a single Smart Sensor input to branch to two Smart Sensors.</i>		
Weatherproof		
Connection Housing	S-EXT-CASE	\$20
<i>(required for outside connections)</i>		
Cable Caddy	M-CDY	\$59

- 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 with these).

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: ±0.18°@ 25°C (±0.32°@ 77°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: 4 minutes (90% in airflow of 1 m/s; RH change only)

External Temperature

Measurement range: U23-002: -40° to 70°C (-40° to 158°F)
 U23-003 & 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: ±0.18°@ 25°C (±0.32°@ 77°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.

HOBO Pro v2 Comparison & Ordering Information

		Internal Temp/RH HOBO Pro v2	External Temp/RH HOBO Pro v2	2x External Temp HOBO Pro v2	Temp/External Temp HOBO Pro v2
Product Number		U23-001*	U23-002*	U23-003	U23-004
Price		\$149	\$179	\$149	\$129
Number of Channels		2	2	2	2
Internal Sensors	Temperature	yes	--	--	yes
	Relative Humidity	yes	--	--	--
Integrated External Sensors	Temperature	--	yes	yes	yes
	Relative Humidity	--	yes	-	--
Size	cm	10.2 x 3.8	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	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	0.5 cm (0.38 in) diameter probe on 1.8 m (6 ft) cable
Weight	grams	57	118	138	102
	ounces	1.5	3.1	3.7	2.7

Complete system requires logger, software and base station.

*** Replaceable RH Sensors Available**

Software, Communications and Accessories

Software

HOBOware Pro Software (Windows®)	BHW-PC	\$99
HOBOware Pro Software (Mac®)	BHW-MAC	\$99
HOBOware Lite Software	BHW-LITE	\$39
Optic USB Base Station* with Couplers	BASE-U-4	\$110

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)	U-DT-1	\$249
HOBO Waterproof Shuttle with Couplers	U-DTW-1	\$219
Solar Radiation Shield**	RS1	\$75
<i>U23-001 only</i>	<i>M-RSA</i>	<i>\$90</i>
Solar Radiation Shield**	RS3	\$59
<i>U23-002, 003, 004</i>		
Mounting Clamp <i>(for mounting U23-001 and 004 in RS1 or M-RSA)</i>	U23-RS-CLAMPKIT	\$5
Replaceable RH Sensor for U23-001	HUM-RHPCB-1	\$60
Replaceable RH Sensor for U23-002	HUN-RHPCB-2	\$60
Replaceable RH Sensor Caps for U23-002 (5 pack)	HUM-RHCAP-2	\$45

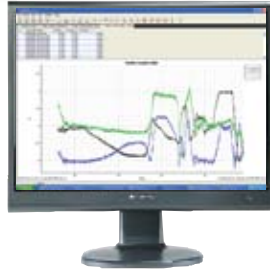
* HOBO Waterproof Shuttle can also be used as a Base Station (See page 34 for details on Data Shuttles and Base Stations).

** Accurate temperature and RH measurements in sun require a radiation shield. Use the RS1 for internal sensors and the RS3 for external sensors.

- 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



HOBO Pendant Loggers



USB



BASE-U-1



Pendant



Memory: **BASE-U-1 is recommended with this logger**
 UA-001-08 — 6,500 measurements
 UA-001-64 — 52,000 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



Temperature

Measurement range: -20° to 70°C (-4° to 158°F) in air
 -20° to 50°C (-4° to 122°F) in water

Accuracy: ±0.47°@ 25°C (±0.85°@ 77°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.

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



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 Loggers

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HOBO Pendant Comparison & Ordering Information

		Temperature w/ Alarm Logger	Temperature w/ Alarm Logger	Temperature/ Light Logger	Temperature/ Light Logger	Acceleration/ Tilt/Motion
						
Product Number		UA-001-08	UA-001-64	UA-002-08	UA-002-64	UA-004-64
Price		\$39	\$49	\$39	\$49	\$69
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.

Software, Communications and Accessories

Software

HOBOware Pro Software (Windows®)	BHW-PC	\$99
HOBOware Pro Software (Mac®)	BHW-MAC	\$99
Pendant Base Station**	BASE-U-1	\$59
HOBOware Lite	BHW-LITE	\$39

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)*	U-DT-1	\$249
HOBO Waterproof Shuttle with Couplers	U-DTW-1	\$219
Solar Radiation Shield***	RS1	\$75

* Requires HOBOware Pro software. See page 32 and 33 for details.

** HOBO Waterproof Shuttle or Optic USB Base Station (BASE-U-4) may be used instead of the Pendant Base Station (See pages 34-35 for details).

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

- Self-contained rainfall logger includes a HOBO Pendant Event data logger (see page 19 for more details) with a high quality tipping-bucket rain gauge
- Time and date stamp is stored for each tip, providing detail needed to determine rainfall rates and duration
- Reliable, field-proven rain gauge
- Also records temperature when used with an optional radiation shield



- Constructed from field-proven, corrosion-resistant components: aluminum housing and collector ring; stainless steel shaft and brass bearings; tipping bucket is high-precision, injection-molded, high-impact ABS plastic
- Three mounting feet to use on flat, level surfaces (three screws included)
- Side bracket for mast mounting (hose clamps included)
- 15.4cm (6.06in.) collector ring
- Self-emptying for continuous rainfall logging

Memory: 64K; number of data points depends on rainfall rate
 16K to 23K tips when recording rainfall only
 25K to 30K tips and temperature measurements when recording both

Battery life: 1 year (typical)— user-replaceable

Data Logging Rain Gauge \$399

0.2 mm RG3-M
 0.01 in RG3
 15.24 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])

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)
 Response time: 15 minutes (to 90% in airflow of 1 m/s)
 Sample rate: 1 second to 18 hours, user-selectable

Optional NIST-traceable certification available (temperature only).

Software, Communications and Accessories

Software

HOBOware Pro Software (Windows®)	BHW-PC	\$99
HOBOware Pro Software (Mac®)	BHW-MAC	\$99
Pendant Base Station (required)	BASE-U-1	\$59

HOBOware includes USB interface cable

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)*	U-DT-1	\$249
HOBO Waterproof Shuttle with Couplers**	U-DTW-1	\$219
Solar Radiation Shield	RS1	\$75

* Requires HOBOware Pro software. See pages 32 and 33 for details.
 ** Data Shuttles can be used in place of base station (See pages 34-35 for details).

**Complete system requires logger, software and base station.*

- Ideal for recording rainfall with tipping-bucket rain gauges
- 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



HOBO Pendant Event

\$89 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)

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: ±0.47° @ 25°C (±0.85° @ 77°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.

Software, Communications and Accessories

Software

HOBOware Pro Software (Windows®)	BHW-PC	\$99
HOBOware Pro Software (Mac®)	BHW-MAC	\$99
Pendant Base Station	BASE-U-1	\$59

HOBOware includes USB interface cable

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)*	U-DT-1	\$249
HOBO Waterproof Shuttle with Couplers**	U-DTW-1	\$219
Solar Radiation Shield	RS1	\$75

* Requires HOBOware Pro software. See pages 32 and 33 for details.

** Data Shuttles can be used in place of base station (See pages 34-35 for details).

****Complete system requires logger and software and base station.***

- 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 downloading 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 required for outdoor use (U14-CASE-4x).
 Internal Sensor version not suitable for outdoor use.*



Internal Temperature

Measurement range: -20° to 50°C (-4° to 122°F)
 Accuracy: ±2.2°C from 0° to 50°C (±0.36°F from 32° to 122°F)
 Resolution (12 bit): 0.03° @ 25°C (0.05° @ 77°F)
 Response time: 15 minutes (to 90% in airflow of 1 meter/second)

Internal RH

Measurement range: 0-100% RH, -20° to 50°C (-4° to 122°F)
 Accuracy: ± 2.5% typical, 3.5% maximum, from 10 - 90% RH
 Resolution (12 bit): 0.03% RH @ 25°C (77°F)
 Response time: 2 minutes (to 90% in airflow of 1 meter/second)

External Temperature/Temp/RH Sensors

Temperature

Measurement range: -40° to 100°C (-40° to 212°F) for sensor tip only
 Accuracy: ±0.2°C from 0° to 50°C (±0.36°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 meter/second)

Temperature

Measurement range: -40° to 75°C (-40°F to 167°F)
 Accuracy: ±0.2°C from 0° to 50°C (0.36°F from 32° to 122°F)
 Resolution (12 bit): 0.03°C @ 25°C (0.04°F @ 77°F)
 Response time: 5 minutes (to 90% in airflow of 1 meter/second)

RH

Measurement range: 0 - 100% RH @ -40° to 75°C (-40° to 167°F)
 Accuracy: ±2.5% 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 meter/second) with protective cap



External Temperature Probe

- \$90 S-TMB-M002*
- \$100 S-TMB-M006*
- \$115 S-TMB-M017*



External Temperature/RH Probe

- \$175 S-THB-M002*
- \$185 S-THB-M008*

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

HOBO U14 LCD Logger

onset



Remote Alarm
\$89 ARA

Remote Alarm (for indoor use)

- 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
\$169 AVD-45

Auto Dialer (for indoor use)

- 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
\$75 H14-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 clear 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.

NIST-traceable temperature accuracy certification is available.

HOBO U14 Model Comparison & Ordering Information

Contact Onset for availability		Internal Temp/RH	External Temp or Temp/RH
		 For indoor use only. U14-001	 External Sensors sold separately. See page 22. U14-002
Price		\$199	\$159
Product Number		U14-001	U14-002
Number of Channels		2	2
Internal Sensors	Temperature	yes	--
	Relative Humidity	yes	--
External Sensor	Temperature	--	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


Software and Accessories

HOBOWare Pro Software (Windows®)	BHW-PC	\$99
HOBOWare Pro Software (Mac®)	BHW-MAC	\$99
HOBOWare Lite	BHW-LITE	\$39
Two-Zone Remote Alarm	ARA	\$89
Auto Dialer	AVD-45	\$169
Protective Case	H14-CASE-4x	\$75
HOBO U-Shuttle	U-DT-1	\$249
Solar Radiation Shield*	RS3	\$59

* Accurate measurements in sunlight require a radiation shield.

- Available in 4 depth ranges
- Ideal for use in wells, streams, lakes, wetlands and tidal areas
- No-vent-tube design for easy and reliable deployment
- Available in stainless steel and titanium* versions
- Durable ceramic pressure sensor



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 

HOBO Water Level Logger

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 Loggers

Product Number Range	U20-001-04 0-13'	U20-001-04-TI 0-13'	U20-001-01 0-30'	U20-001-01-TI 0-30'	U20-001-02 0-100'	U20-001-03 0-250'
Price	\$495	\$745	\$495	\$745	\$495	\$495
Housing	Stainless	Titanium	Stainless	Titanium	Stainless	Stainless

Water Level Specifications (all models)

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	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	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)

* Titanium version recommended for saltwater deployment.
 ** Depth range specifications are nominal values based on using the logger at sea level.
 *** Using reference water level measurement and Barometric Compensation Assistant.

HOBO Water Level Logger Kits

onset

- Available in 2 versions – A Deluxe Kit and The Starter Kit
- \$200 Saving on Deluxe Kit; \$100 Savings on Starter Kit
- Everything included to start logging
- 0.01 foot accuracy, no bulky vent tubes



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. Available in 13', 30' and 100' depths.

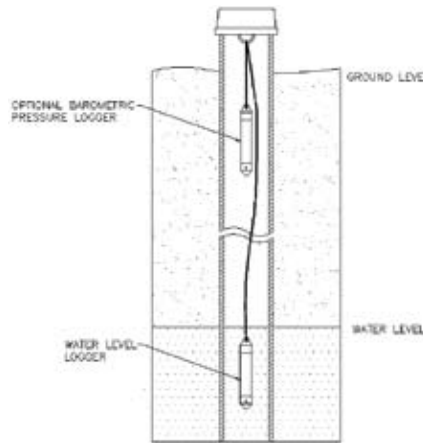


The Starter Kit includes a HOBO Water Level Logger, HOBOWare® Pro Software, and an Optic USB Base Station. Available in 13', 30' and 100' depths.

HOBO Water Level Logger Kits

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 one 0-13' and one 13'	U20-001-01 0-30'	U20-001-01 Kit includes one 0-13' and one 30'	U20-001-02 0-100'	U20-001-03 Kit includes one 0-13' and one 100'
Price	\$604	\$1,137	\$604	\$1,137	\$604	\$1,137
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
Software	BHW-PC HOBOWare® Pro	BHW-PC HOBOWare® Pro	BHW-PC HOBOWare® Pro	BHW-PC HOBOWare® Pro	BHW-PC HOBOWare® Pro	BHW-PC HOBOWare® Pro
Housing	Stainless	Stainless	Stainless	Stainless	Stainless	Stainless

- Convenient connector-free data offload
- Fully-sealed housing ensures years of trouble-free operation
- High-accuracy measurements at a sensible price



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



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

- 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 Weather Station, or import ASCII barometric data for barometric compensation when needed (typically one barometric data set can be used with all water level loggers in that area).

NIST-Traceable temperature accuracy certification service available.



Optional carrying case with foam inserts holds four HOBO Water Level Loggers and an Optic USB Base Station or Waterproof Shuttle. (Loggers, Base Station and Waterproof Shuttle sold separately)

Water Level Logger Carrying Case

\$29 U20-CASE-1
 35.6 x 26.7 x 10.2 cm
 (14 x 10.5 x 4 in)
 0.7 kg (1.5 lbs)

Software, Communications and Accessories

Software

HOBOWare Pro Software (Windows®)	BHW-PC	\$99
HOBOWare Pro Software (Mac®)	BHW-MAC	\$99
Optic USB Base Station with Couplers*	BASE-U-4	\$110
<i>HOBOWare includes USB interface cable.</i>		

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)	U-DT-1	\$249
HOBO Waterproof Shuttle with Couplers*	U-DTW-1	\$219
Water Level Logger Carrying Case	U20-CASE-1	\$29
1/16 in Teflon-coated stainless steel cable:		
50 feet	CABLE-1-50	\$55
300 feet	CABLE-1-300	\$245
Crimp Sleeve for cables (12-pack)	CABLE-1-CRIMP	\$25

* HOBO Waterproof Shuttle can also be used as a Base Station
 (See pages 34-35 for details on Data Shuttles and Base Stations).

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



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



Tidbit v2 Temp Logger

\$125 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)
 23 g (0.8 oz)

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 **CE**

Measurement range: -20° to 70°C (-4° to 158°F) in air
 -20° to 30°C (-4° to 86°F) in water
 Accuracy: ±0.2°@ 25°C (±0.36°@ 77°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.



Protective Boot
 5 for \$20
 BOOT-TIDBIT-WH



Protective Boot
 5 for \$20
 BOOT-TIDBIT-BK

Software, Communications and Accessories

Software

HOBOWare Pro Software (Windows®)	BHW-PC	\$99
HOBOWare Pro Software (Mac®)	BHW-MAC	\$99
Optic USB Base Station with Couplers**	BASE-U-4	\$110

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)*	U-DT-1	\$249
HOBO Waterproof Shuttle with Couplers**	U-DTW-1	\$219
Solar Radiation Shield***	RS1	\$75
Protective Boot 5-pack, black	BOOT-TIDBIT-BLK	\$20
Protective Boot 5-pack, white	BOOT-TIDBIT-WHT	\$20

* Requires HOBOWare Pro software. See page 32 and 33 for details.
 ** HOBO Waterproof Shuttle can also be used as a Base Station.
 (See pages 34-35 for details on Data Shuttles and Base Stations)
 *** Accurate temperature measurement in sunlight requires a radiation shield.

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

HOBO Water Temp Pro v2 Loggers

onset

- 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



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

HOBO Water Temp Pro v2 Logger

\$115 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)

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: -20° to 70°C (-4° to 158°F) in air
 -20° to 50°C (-4° to 122°F) in water
 Accuracy: ±0.2°@ 25°C (±0.36°@ 77°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.



Protective Boot

\$15 BOOT-xxx

Software, Communications and Accessories

Software

HOBOWare Pro Software (Windows®)	BHW-PC	\$99
HOBOWare Pro Software (Mac®)	BHW-MAC	\$99
Optic USB Base Station with Couplers**	BASE-U-4	\$110

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station)*	U-DT-1	\$249
HOBO Waterproof Shuttle with Couplers	U-DTW-1	\$219
Solar Radiation Shield***	RS1	\$75
Protective Boot, black	BOOT-BLK	\$15
Protective Boot, white	BOOT-WHT	\$15

* Requires HOBOWare Pro software. See pages 32 and 33 for details

** HOBO Waterproof Shuttle can also be used as a Base Station.

(See pages 34-35 for details on Data Shuttles and Base Stations)

*** Accurate temperature measurement in sunlight requires a radiation shield.

**Complete system requires logger, software and base station.*

- Designed for high temperature and deep water applications
- Waterproof to 1,500 meters (4,900 feet)
- Data readout in less than 30 seconds via fast, 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: ±0.22°@ 25°C (±0.4°@ 77°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 1 m/s)
 U12-015-02: 20 seconds (to 90% in water)



NIST-traceable accuracy certification service available from -30° to 120°C (-22° to 248°F)

HOBO U12 Model Comparison & Ordering Information

		Stainless Temp HOBO U12 Logger 	Stainless Temp HOBO U12 Logger with 5 inch probe 
Product Number		U12-015	U12-015-02
Price		\$249	\$339
Number of Channels		1	1
Sensors	Temperature	Yes - internal	Yes - in probe
Size	cm	1.75 x 10.2	1.75 x 10.2
	inches	0.69 x 4.0	0.69 x 4.0
Probe	cm	--	0.401 x 12.4
	inches	--	0.16 x 4.9
Weight	grams	72	82
	ounces	2.9	2.9

Complete system requires logger and software.

Software and Communications

Software

HOBOWare Pro Software (Windows®)	BHW-PC	\$99
HOBOWare Pro Software (Mac®)	BHW-MAC	\$99
<i>HOBOWare includes USB interface cable</i>		

Optional Communications

HOBO U-Shuttle*	U-DT-1	\$249
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*Requires HOBOWare Pro software. See pages 32 and 33 for details.

HOBO U12 Outdoor/Industrial

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- 4 Channels of external input for multiple measurements with one logger
- Connects to Onset external temperature sensors, or sensors with 0-2.5 volt or 4-20mA output



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

CE

Weatherproof case tested to NEMA 4X and IP67.

HOBO U12 Outdoor/Industrial Logger

\$199 U12-008
 14.0 x 13.7 x 3.2 cm
 (5.50 x 5.38 x 1.25 in)
 200 g (7 oz)



Voltage Input Cable
\$8 CABLE-2.5-STEREO

Analog Input for use with the following sensors and cables

Input Range: 0 to 2.5 volts DC
 Accuracy: \pm mV \pm 2.5% of reading
 Resolution (12 bit): 2 mV
 Output power: 2.5 volts DC at 4mA,
 active only during measurements
Inputs share a common ground.



4-20mA Cable
\$22 CABLE-4-20mA

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



Air/Water/Soil Temperature Sensors
\$28-\$40 TMCx-HD

Range: -40° to 100°C (-40° to 212°F) in air
 -40° to 50°C (-40° to 122°F) in soil or water
 Accuracy: \pm 0.25°@ 25°C (\pm 0.45°@ 77°F)
 Resolution: 0.03% @ 25°C (\pm 0.45°@ 77°F)
 Response time: 3 minutes (to 90% in airflow of 1m/s)
 30 seconds typical to (to 90% in stirred water)
Sensor tip and cable immersion in fresh water up to 50°C (122°F) for 1 year; radiation shield recommended for use in sunlight.



Stainless Steel Temperature Probe
\$75 TMC6-HC

Range: -40° to 100°C (-40° to 212°F) in air or water (tip only)
 Accuracy: \pm 0.25°@ 25°C (\pm 0.45°@ 77°F)
 Resolution: 0.03% @ 25°C (\pm 0.45°@ 77°F)
 Response time: 3 minutes (to 90% in airflow of 1 m/s)
 30 seconds typical to (to 90% in stirred water)

Software and Communications

Software

HOBOWare Pro Software (Windows®)	BHW-PC	\$99
HOBOWare Pro Software (Mac®)	BHW-MAC	\$99
<i>HOBOWare includes USB interface cable</i>		

Optional Communications

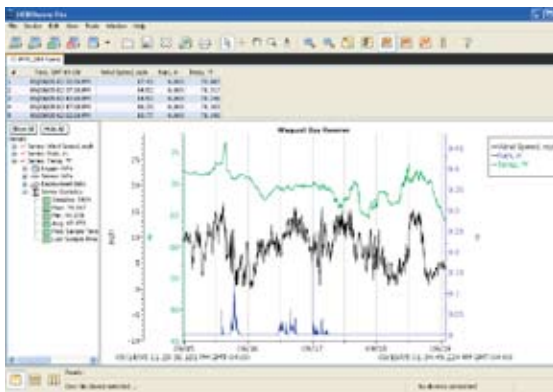
HOBO U-Shuttle*	U-DT-1	\$249
Solar Radiation Shield**	RS3	\$59

* Requires HOBOWare Pro software. See pages 32 and 33 for details.

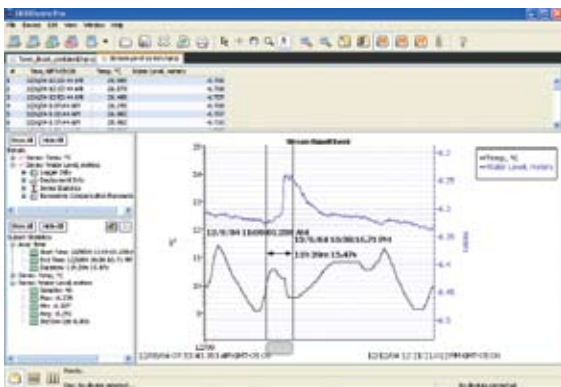
** Accurate temperature measurements in sunlight require a radiation shield.

- Onset's most powerful software for logger launch, readout, data graphing, analysis, and data export
- Supports all HOBOWare® U-Series loggers and Data Shuttles, HOBOWare Weather Station/Micro Station, HOBOWare Energy Logger Pro™, and HOBOWare Remote Monitoring Systems
- Data Assistants and the Real-Time Alarm and Readout Tool provide advanced data analysis and monitoring/notification of out-of-range conditions
- Available for PC or Mac

HOBOWare Pro Software
\$99 BHW-xx



Powerful graphing features let you plot and filter data from multiple loggers or deployments.



HOBOWare Pro's Subset Statistics tool calculates statistics over user-defined intervals.

HOBOWare Pro vs HOBOWare Lite

Features	HOBOWare Pro	HOBOWare Lite
Support for HOBOWare U-Series Loggers	•	•
Support for HOBOWare Weather Station and HOBOWare Micro Station	•	
Support for HOBOWare U-Shuttle and HOBOWare Waterproof Shuttle	•	
Launch supported loggers	•	•
Launch time-saving options	•	
Graphing and analysis with ability to view multiple data files on one graph	•	•
Readout and open-file time-saving options	•	
Filters to extract key series information such as daily min/max	•	•
Subset Statistics Tool	•	
Save (Project) Changes	•	•
Import ASCII text data	•	
Export ASCII text data	•	•
Check Logger Status and view current readings	•	•
Data Assistants for Water Level Barometric Compensation, Linear Scaling, Pulse Scaling, and Growing Degree Day Assistance (included with software)	•	
HOBOWare Setup Assistant	•	
Ability to add Data Assistants and plug-in Tools	•	
21 CFR Part 11 Secure Data Storage	•	
Bulk Export Tool	•	

HOBOWare Lite Software

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- Entry-level software for HOBOWare U-Series loggers
- Easy logger launch, readout, and data plotting
- Ideal for users looking to save money and who don't need all the features of HOBOWare Pro



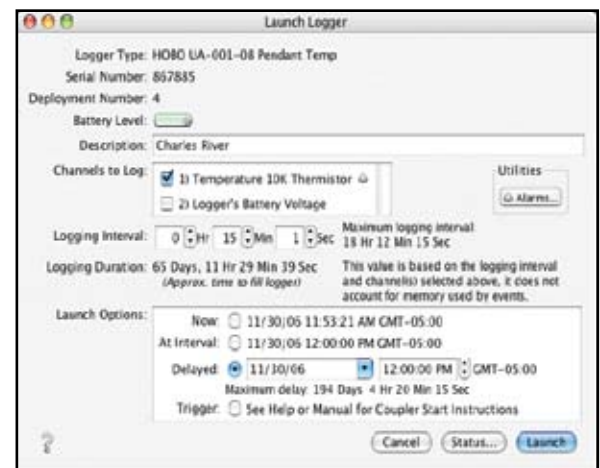
HOBOWare Lite Software
\$39 BHW-LITE

HOBOWare for Windows® System Requirements

- Vista Pro, Vista Home Premium, Microsoft Windows XP Professional or Home Edition, Windows 2000 Professional, or Windows 2000 Server
- Java Runtime Environment (JRE) version 1.5.0_15
- 256 MB system RAM (512 MB recommended)
- 3.5 MB free disk space after installing the Java Runtime Environment
- USB port required for U-Series loggers
- Serial port or USB Serial Adapter for HOBOWare Weather Station, Micro Station or HOBOWare Energy Logger Pro
- 800 x 600 (minimum) display resolution, 256 colors (1024 x 768 or greater recommended)

HOBOWare for Mac® System Requirements

- Mac OS X versions 10.3.9 or 10.4.x and greater
- Java Runtime Environment (JRE) version 1.5.0_13
- 256 MB system RAM (512 MB recommended)
- 7 MB free disk space after installing JRE
- USB port required for U-Series loggers
- Serial port or USB Serial Adapter for HOBOWare Weather Station, Micro Station or HOBOWare Energy Logger Pro
- 1024 x 768 (minimum) display resolution



Easy logger setup - select launch parameters and go!

HOBOWare Lite System Requirements are the same as HOBOWare Pro Software. See Page 32.

Ordering Information

Software

HOBOWare Pro Software (Windows®)	BHW-PC	\$99
HOBOWare Pro Software (Mac®)	BHW-MAC	\$99
HOBOWare Lite Software (Windows®/Mac®)*	BHW-LITE	\$39
USB Serial Adapter (for H Series)	CABLE-USB232	\$45
Serial Interface Cable (for H Series)	CABLE-PC-3.5	\$9

HOBOWare includes USB interface cable.

** HOBOWare Lite does not support Data Shuttles.*

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



HOBO U-Shuttle

\$249 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 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
- LCD display provides current sensor readings (excluding HOBO U12 Family loggers), battery and logger status
- CABLE-HOBO-SHTL and CABLE-USBMB included

Specifications:

4 MB non-volatile memory: 504 8K loggers, 63 64K loggers
Operating temperature range 0° to 50°C (32° to 122°F)
Battery life: 1-year (typical) — user-replaceable
Requires HOBOWare Pro Software **CE**



HOBO Waterproof Shuttle

\$219 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 **CE**



Optic USB Base Station

\$110 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 **CE**



Pendant Base Station

\$59 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) **CE**
Offloads full 64K logger in 30 seconds

Ordering Information

Data Shuttle and Base Stations

HOBO Waterproof Shuttle with Couplers*	U-DTW-1	\$219
HOBO U-Shuttle*	U-DT-1	\$249
Pendant Base Station	BASE-U-1	\$59
Optic USB Base Station with Couplers	BASE-U-4	\$110

*Data Shuttles require HOBOWare Pro for offload. See onsetcomp.com for specifications.

Data Shuttles/Base Stations Comparison Chart

onset

HOBO Shuttle and Base Station Compatibility

		HOBO U-Shuttle Data Transporter  U-DT-1	HOBO Waterproof Shuttle  U-DTW-1*	Pendant Base Station  BASE-U-1	Optic USB Base Station  BASE-U-4*
Price		\$249	\$219	\$59	\$110
Storage Capacity	504 loggers/8k memory	✓	✓		
	63 loggers/64k memory	✓	✓		
	7 loggers/512k memory	✓			
HOBO U9		✓			
HOBO U10		✓			
HOBO U11		✓			
HOBO U12 (12-bit Family)		✓			
HOBO U12 Outdoor		✓			
HOBO U12 Stainless		✓			
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 Weather Station		✓			
HOBO Micro Station		✓			
HOBO Energy Logger Pro		✓			

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

* Couplers are included.

Services/Parts/Accessories

Ordering

onset

Computer and Logger Interface Cables

Serial Interface cable (H-Series)	CABLE-PC-3.5	\$9
USB Interface Cable (U-Series)	CABLE-USBMB	\$9
USB Serial Adapter	CABLE-USB232	\$45
HOBO U-Shuttle Interface Cable (for H-Series loggers)	CABLE-HOBO-SHTL	\$9

Replacement Batteries

Batteries for HOBO Pendant & U12, U11, U10, U9 (box of six)	HRB-TEMP	\$14
Battery for HOBO Pro v2 (U23 Series)	HP-B	\$12

Optic USB Base Station and HOBO Waterproof Shuttle Replacement Couplers

Coupler for HOBO Pendant (with BASE-U-1)	COUPLER-UA	\$15
Coupler for HOBO Pendant (with BASE-U-4 or U-DTW-1)	COUPLER2-A	\$10
Coupler for HOBO Water Level Logger (U20)	COUPLER2-B	\$10
Coupler for HOBO Water Temp Pro v2 (U22)	COUPLER2-C	\$10
Coupler for TidbiT v2	COUPLER2-D	\$10
Coupler for HOBO Pro v2 (U23)	COUPLER2-E	\$10

Additional Accessories

For HOBO Water Temp Pro v2

Protective Boot, black (Cap included)	BOOT-BLK	\$15
Protective Boot, white (Cap included)	BOOT-WHT	\$15
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	\$20
Protective Boot 5-pack, white	BOOT-TIDBIT-WH	\$20

For HOBO Water Level Logger

Water Level Logger carrying case	U20-CASE-1	\$29
1/16 in. diameter Teflon-coated stainless steel cable		
50 ft	CABLE-1-50	\$55
300 ft	CABLE-1-300	\$245
Crimp Sleeve (12-pack) for above cables	CABLE-1-CRIMP	\$25

For U12-008 Loggers

4-20mA cable	CABLE-4-20MA	\$22
Voltage input cable	CABLE-2.5-STEREO	\$8

For Temperature Loggers

Radiation Shield	RS3	\$59
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Replacement Parts

Desiccant pack for HOBO Micro Station, LCD CASE	85-DESICCANT6	\$7
Desiccant pack for U12-008	DESIC-PACK	\$7
Replacement O-Ring Kit (U12-015 Stainless Temp)		
EPDM	U12-015-ORING-E	\$12
Viton	U12-015 ORING-V	\$15
25 small Desiccant Packs for UA and U23 Loggers	DESICCANT1	\$12
Replacement Parts Kit (UA-001/2/4)	UA-PARTS KIT	\$15
Replacement RH Sensor for U23-001	HUM-RHPCB-1	\$60
Replacement RH Sensor for U23-002 and S-THB	HUM-RHPCB-2	\$60
Replacement RH Cap Kit 5-pack (S-THB and U23-002 Cables)	HUM-RHCAP2	\$45

Submersible Cases and Accessories

To use HOBO U10 and U12 loggers underwater

Submersible case, dome-top, white	SUBC2-WH	\$35
Submersible case, dome-top, grey	SUBC2-GR	\$35
Dome-top subcase service kit includes:	SUBC2-KIT	\$7
1 O-ring, 1 sealant, 1 foam disc, 2 desiccant packs		
25 Desiccant packs for submersible cases	DESICCANT2	\$14
Sealant for submersible cases	85-ORING	\$2

Services/Parts/Accessories Ordering

onset

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	\$100
Factory Battery Replacement for HOBO U12 Stainless 5 in. Probe Temp Logger	\$136
Factory Battery Replacement for HOBO Water Temp Pro v2	\$44
Factory Battery Replacement for HOBO Water Level Logger & Calibration	\$198
Recalibration service w/3-point certificate of pressure accuracy for HOBO Water Level Logger	\$95

NIST Certification

NIST-Traceable Setup	NIST-SETUP	\$30
NIST per-point/channel	NIST-TEMP-POINT	\$30

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 in accordance to a NIST-traceable standard.

Onset also offers a Certificate of Compliance which certifies logger compliance with the specifications described in its product manual.

For full range of HOBO Remote Monitoring Systems, HOBO Weather/Micro Station accessories and ordering options, see pages 4-13.

HOBOS for Indoor Monitoring

Onset also manufactures a full line of data loggers for monitoring energy and indoor environmental conditions. Visit onsetcomp.com to see our full line of indoor monitoring solutions.



HOB0 Energy Logger Pro
\$299
H22-001



HOB0 U12 Loggers
\$79-\$125
U12-0xx



HOB0 U10 Loggers
\$59-\$75
U10-0xx

The HOB0 Energy Logger Pro is Onset's most flexible logger with easy configuration at a reasonable cost. The 15 channels enable professionals to quickly and efficiently solve a broad range of monitoring applications with pre-configured smart sensors. FlexSmart™ TRMS and Analog Modules retain configurations until the user changes them, providing plug-and-play convenience for commonly used third-party sensors. Wireless communication options are available for remote data offload and near real-time data access.

Common Features

- Smart sensors simply plug in and are ready for logging — no calibration or complex wiring, required
- 1-year (typical) — user-replaceable batteries
- Large memory capacity (up to 512,000 measurements) for long-term deployments
- Easy data offload in the field with the HOB0 U-Shuttle

Measurements

- AC Current/Voltage
- AC Power (single phase and 3-phase)
- CO₂
- Line Pressure
- Duct Pressure
- Flow
- Temperature
- Temperature/RH
- Wind Speed & Direction
- Solar Radiation
- 4-20mA Input Adapter
- Voltage Input Adapter
- Pulse Input Adapter
- PAR
- Soil Moisture

Stand-Alone HOB0 Loggers

Onset offers self-contained data loggers for measuring temperature, relative humidity, events, light on/off, motor on/off, open/closed, carbon monoxide, and carbon dioxide. The sensors are built into the loggers for the ultimate in convenient deployment. Learn more at onsetcomp.com

About Onset

Onset Computer Corporation designs and manufactures data loggers and weather stations. Onset introduced its first data logger more than 25 years ago and revolutionized the portable data logging industry with the first temperature logger under \$100 - the original HOBO data logger.

Today, more than one million HOBO data loggers are in use around the globe in a broad range of applications, from stream temperature monitoring to agricultural research.

Onset offers a wide range of USB-based stand-alone data loggers for indoor, outdoor, and underwater monitoring applications.

The Onset Advantage

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 are known for providing the most reliable, accurate data under some of the world's toughest environmental conditions.

Simple, Cost-Effective Solutions

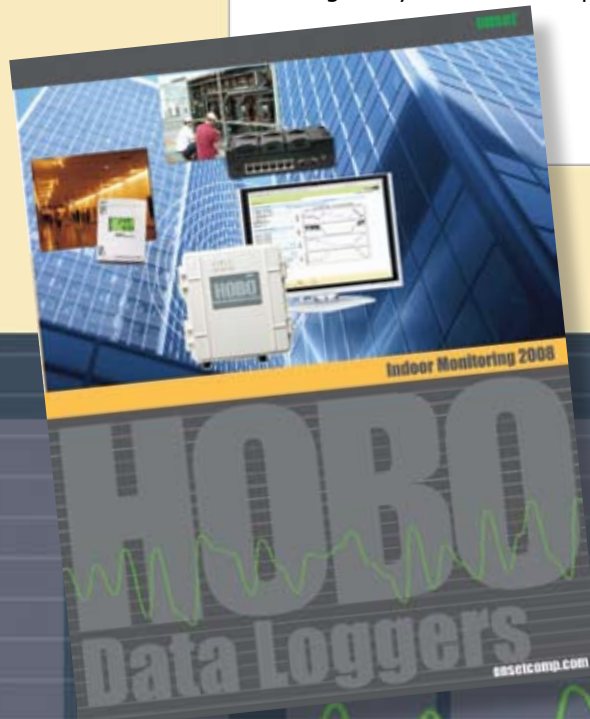
At Onset, we realize our customers – and their technology budgets – can vary widely. For that reason, our products are designed from the ground up with ease-of-use and affordability foremost in mind.

Application Expertise

With more than two decades of experience in solving data logging applications, Onset has developed applications expertise that is second to none. Whether you are an entomologist who needs climate data, or a crop consultant helping growers operate more efficiently chances are we've seen your application before and know what it takes to solve it.

World-Class Support

Our world-class Customer Service department is staffed by friendly, knowledgeable people who will listen carefully to your questions and guide you to the best possible solution.



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