HOBO®

Data Loggers

PRODUCT CATALOG

darvas, s.l.

Productos para la medición
forestal, geodésica y topográfica
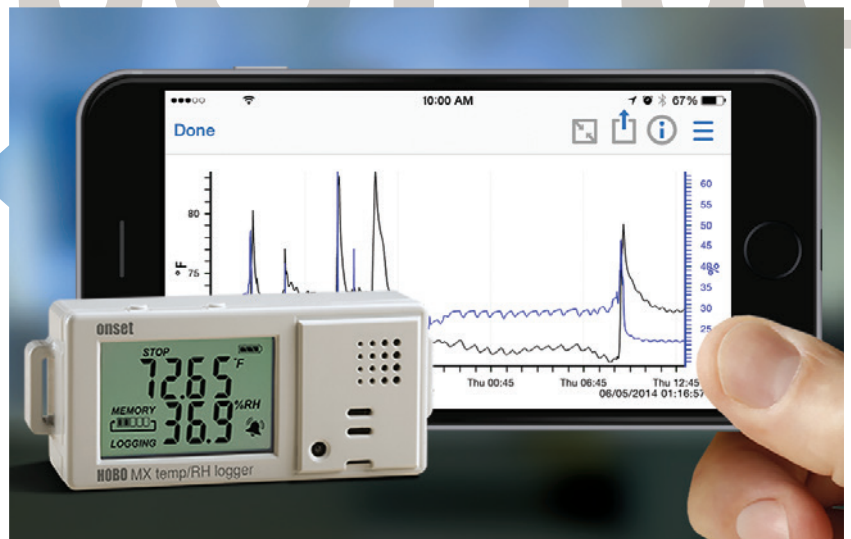
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ONSET

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Indoor Data Loggers

HOBO MX1101 Logger

Bluetooth Low Energy temperature and relative humidity data logger
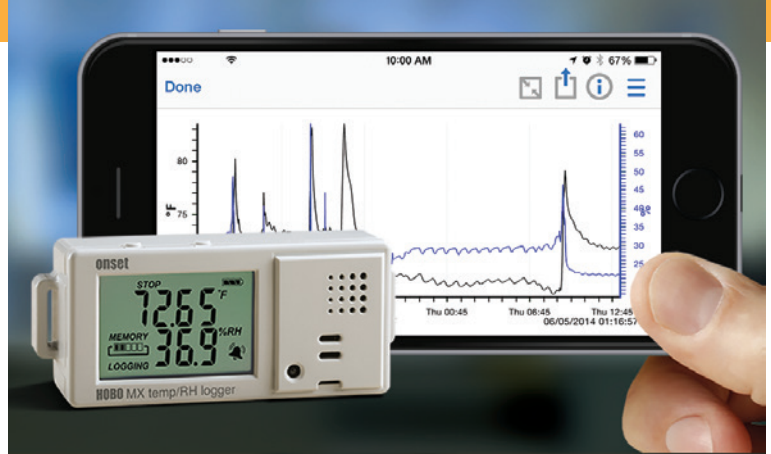
Onset's HOBO MX1101 is a Bluetooth® Low Energy (BLE) data logger that measures and transmits temperature and relative humidity data wirelessly to mobile devices via BLE technology.

The self-contained wireless data logger, which works with Onset's free HOBOmobile® app for logger setup and data management, enables users to access data anytime from their mobile device over a 100-foot range. It communicates instantly and enables you to "cut the cord" by requiring no dedicated equipment beyond a mobile device for configuring the logger or reading out data. This saves considerable time and money.

Supported Measurements:

Temperature, Relative Humidity, Dew Point

Key Advantages:

- Bluetooth Low Energy technology for use with mobile devices
- No internet access, cables, or computer required
- Download data any time from 100 ft. away
- Audible and visual alarms keep you notified of problems
- Easily share data and graph images for analysis

Minimum System Requirements:

HOBO
HOBOmobile
See pg 39

Mobile
device

Part number	MX1101
Memory	84,650 Measurements
Sampling Rate	1 second to 18 hours, user selectable
Battery Life	1 year, typical with logging rate of 1 minute and sampling interval of 15 seconds or greater, user replaceable, 2AAA
Dimensions	3.66 x 8.48 x 2.29 cm (1.44 x 3.34 x 0.9 in.)
Temperature	
Range	-20° to 70°C (-4° to 158°F)
Accuracy	±0.21°C from 0° to 50°C (±0.38°F from 32° to 122°F)
Resolution	0.024°C at 25°C (0.04°F at 77°F)
Response Time	7.30 minutes in air moving 1 m/s (2.2 mph)
Relative Humidity	
Range	1% - 90%RH, non-condensing
Accuracy	±2.0% from 20%RH to 80%RH typical to a maximum of ±4.5% including hysteresis at 25°C (77°F); below 20%RH and above 80%RH ±6% typical
Hysteresis	±2% RH
Resolution	0.01%RH
Response Time	20 seconds to 90% in air moving of 1 m/s (2.2 mph)
CE compliant	Yes

Note: Temp & RH NIST certification services available for this product.

HOBO MX1102 Logger

Bluetooth Low Energy CO₂, temperature, and relative humidity data logger

Onset's HOBO MX1102 CO₂ logger makes it more convenient than ever to measure and record CO₂ in buildings and other non-condensing environments. It measures CO₂ from 0 – 5,000 parts per million (ppm) – and our free HOBOmobile app allows you to access data right from your mobile phone or tablet within a 100-foot range.

The MX1102 also features a USB port so it can be used with a computer running HOBOware Pro graphing and analysis software.

Supported Measurements:

CO₂, Temperature, Relative Humidity, Dew Point

Key Advantages:

• Wireless communication via BLE technology
• Six-month battery life at 5-minute CO₂ logging rate
• Easy to deploy & offload using free HOBOmobile App
• Visual and audible high & low alarm thresholds
• Self-calibrating CO₂ sensor technology ensures optimal accuracy at lower maintenance costs

Minimum System Requirements:

HOBO
HOBOmobile
See pg 39

Mobile device

Part number	MX1102
Memory	84,650 Measurements
Logging Rate	1 second to 18 hours
Battery Life	6 months, typical with logging and sampling intervals of 5 minutes or slower; 6 months or less with logging and sampling intervals faster than 5 minutes while logging CO₂, user replaceable, 4AA
Dimensions	7.62 x 12.95 x 4.78 cm (3.0 x 5.1 x 1.88 inches)
CO₂	
Range	0 to 5,000 ppm
Accuracy	±50 ppm ±5% of reading at 25°C (77°F), less than 70% RH and 1,013 mbar
Warm-up Time	15 seconds
Calibration	Auto or manual to 400 ppm
Non-linearity	<1% of FS
Temperature	
Range	0° to 50°C (32° to 122°F)
Accuracy	±0.21°C from 0° to 50°C (±0.38°F from 32° to 122°F)
Resolution	0.024°C at 25°C (0.04°F at 77°F)
Response Time	12 minutes to 90% in airflow of 1 m/s (2.2 mph)
Relative Humidity	
Range	1% - 90%RH, non-condensing
Accuracy	±2.0% from 20%RH to 80%RH typical to a maximum of ±4.5% including hysteresis at 25°C (77°F); below 20%RH and above 80%RH ±6% typical
Hysteresis	±2%RH
Resolution	0.01%RH
Drift	<1%RH per year typical
Response Time	**CO₂**: 1 minute to 90% in airflow of 1 m/s (2.2 mph), **Temp**: 12 minutes to 90% in airflow of 1 m/s (2.2 mph), **RH**: 1 minute to 90% in airflow of 1 m/s (2.2 mph)
CE compliant	Yes

Note: Temp & RH NIST certification services available for this product.

HOBO MX100 Temperature Logger

Splash-proof BLE logger for indoor environments

Onset's HOBO MX100 is a low-cost, splash-proof data logger that measures and transmits temperature data wirelessly to mobile devices via Bluetooth Low Energy (BLE) technology.

Ideal for a range of indoor monitoring applications, this self-contained wireless data logger lets you access temperature data anytime from your mobile device over a 100-foot range. And, it requires no dedicated equipment beyond a mobile device for configuring the logger or reading out data.

Supported Measurements:

Temperature
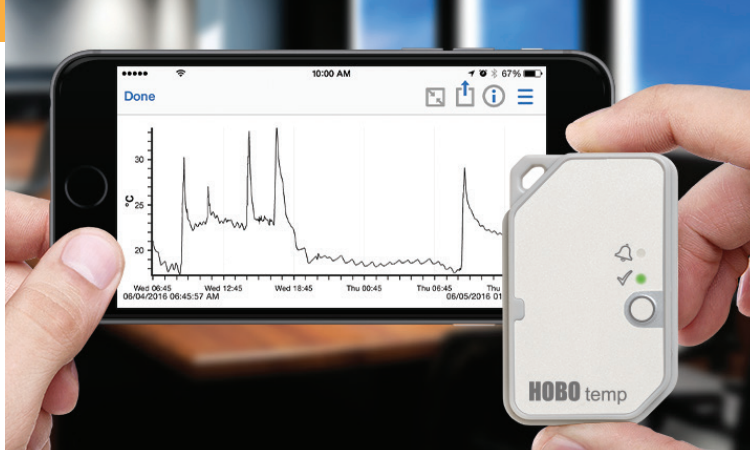
Key Advantages:

• Set up and offload loggers wirelessly from your mobile device – no internet, cables, or computer required
• Exceptional value for the convenience of a BLE communication logger
• Splash-proof design enables use in damp environments and spray-down applications
• Easy to deploy, offload, and share temperature data using free HOBOmobile app
• Visual alarms on the logger display and mobile app keep you notified of problems
• Set up and start monitoring in minutes!

Minimum System Requirements:

HOBOmobile
See pg 39

Mobile* device

Part number	MX100
	Temperature Sensor
Range	-30° to 70°C (-22° to 158°F)
Accuracy	±1.0°C from -30° to -5°C (±1.8°F from -22° to 23°F) ±0.5°C from -5° to 50°C (±0.9°F from 23° to 122°F) ±1.0°C from 50° to 70°C (±1.8°F from 122° to 158°F)
Resolution	0.04°C (0.072°F)
Drift	<0.01°C (0.018°F) per year
Response Time	6 minutes typical to 90% in open air moving 1 m/s, unmounted
	Logger
Logger Operating Range	-30° to 70°C (-22° to 158°F)
Transmission Range	Approximately 30.5 m (100 ft) line-of-sight
Logging Rate	1 second to 18 hours
Time Accuracy	± 1 minute per month at 25°C (77°F)
Battery	CR2450 3V lithium, not replaceable
Battery Life	1 year, typical with logging interval of 1 minute and Power Saving Mode disabled; 2 years, typical with logging interval of 1 minute and Power Saving Mode enabled.
Memory	30,000 Measurements
Dimensions	6.9 x 4.5 x 1.1 cm (2.71 x 1.76 x 0.42 inches)
CE compliant	Yes

*Currently iOS compatible only. Android compatibility coming soon.

HOBO UX100 Loggers

Next-generation family of temperature and humidity data loggers

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

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

Supported Measurements:

Temperature, Relative Humidity, Dew Point

Key Advantages:

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

Minimum System Requirements:

Software
See pg 38

USB cable*

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

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

*Note: Temp & RH NIST certification services available for this product.
*USB cable included with software part # BHW-PRO-CD

HOBO UX90 Loggers

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

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

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

Supported Measurements:

State, Pulse, Event, Runtime, Light On/Off, Motor On/Off, Occupancy/Light

Key Advantages:

- LCD displays Time On or % On, providing instant feedback
- Auto-calibration & signal strength indicator ensure proper deployment
- 84k or 346k measurement capacity enables longer deployments
- Flexible logger Start and Stop options
- HOBOware Pro allows for easy setup of hundreds of loggers

Minimum System Requirements:

Software
See pg 38

USB cable*

Part number	UX90-001 (State)	UX90-002 (Light On/Off)	UX90-004 (Motor On/Off)	UX90-005 (Occupancy/Light)	UX90-006 (Occupancy/Light)
Memory			84,000 measurements		
Part number	**UX90-001/M**	**UX90-002M**	**UX90-004M**	**UX90-005M**	**UX90-006M**
Memory			346,000 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, user replaceable, CR2032		
Operating range			-20º to 70ºC (-4º to 158ºF); 0-95% RH (non-condensing)		
Dimensions	3.66 x 5.94 x 1.52 cm (1.44 x 2.34 x 0.6 in)		3.66 x 8.48 x 1.52 cm (1.44 x 3.34 x 0.6 in)	3.66 x 8.48 x 2.36 cm (1.44 x 3.34 x 0.93 in)	3.66 x 8.48 x 2.87 cm (1.44 x 3.34 x 1.13 in)
CE compliant			Yes		

*USB cable included with software part # BHW-PRO-CD
For the most accurate readings, use of Light Pipe UX90-LIGHT-PIPE-1 is recommended to eliminate the effects of ambient light. See page 46 for more details.

HOBO UX120 Plug Load Logger

Measures power and energy consumption of 120V office equipment plug loads

Onset's HOBO Plug Load Logger is a high-accuracy, easy-to-deploy data logger that measures and records the power and energy consumption of 120V plug loads from office equipment, vending machines, and other devices.

The logger provides 0.5% measurement accuracy with a measurement resolution of 1 watt, making it an ideal choice for building audits where detailed energy use data is required. The rugged housing is designed to withstand the rigors of real-world handling, providing reliable performance despite bumps, drops, and use under desks.

Supported Measurements:

AC Current, AC Voltage, Amps, Kilowatt Hours, Power Factor, Volt-Amps, Volts, Watt Hours, Watts

Key Advantages:

• 0.5% measurement accuracy enables more reliable plug load energy use data
• "Meter Mode" provides instant real-time plug load variables
• Large memory enables faster logging intervals for more comprehensive plug load profiles
• Battery back-up ensures logged data remains intact in the event of a power outage or load failure
• LCD display provides visual diagnostics for easy deployment
• Factory calibrated (see user's manual for details)

Minimum System Requirements:

Software
See pg 38

USB cable*

Part number	UX120-018
RMS Voltage Accuracy, RMS Current Accuracy, Active Power Accuracy, Power Factor Accuracy	0.5% up to 14 Amp continuous; up to 1.0% over 14 Amp when equipment being monitored is at 100% duty cycle
Power Factor Accuracy	±0.02
Drift	Up to 0.5% typical within 1 year
Memory	4 MB (1.4 million measurements, maximum)
Logging rate	1 second to 18 hours, 12 minutes, 15 seconds
Sampling rate	60 Hz or 16.67 mS single-cycle
Battery life	2 years with line power; 6 months battery only (no line power) with logging rate of 1 minute or greater operating at 25°C (77°F)
Power source	Line-powered with 0.92 m (3 ft) AC power cord or two AAA 1.5 V alkaline batteries, user replaceable
Resolution	See manual for full details
Operating temperature range	Logging: 5° to 40°C (41° to 104°F); 0 to 95% RH (non-condensing)
Dimensions	13.97 x 7.62 x 4.75 cm (5.5 x 3 x 1.87 in.)
CE Compliant	Yes

*USB cable included with software part # BHW-PRO-CD

HOBO UX120 4-Channel Analog Logger

Flexible, accurate, 4-channel analog logger
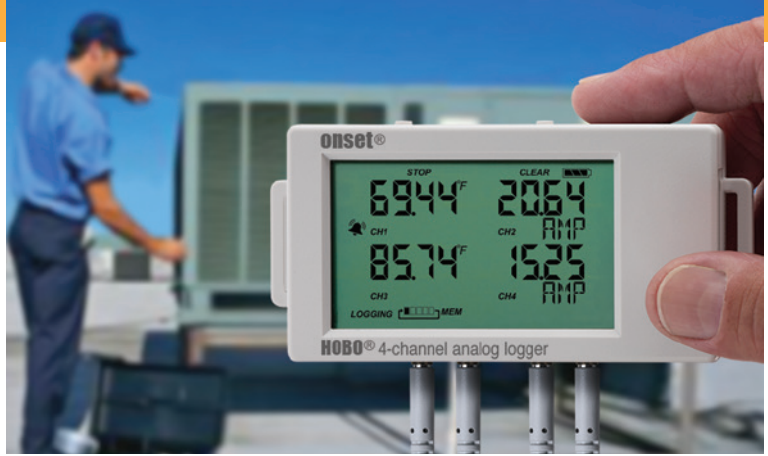
The HOBO UX120-006M Analog logger is a high-performance, LCD display data logger for building performance monitoring applications.

As Onset's highest-accuracy data logger, it provides twice the accuracy of previous models, a deployment-friendly LCD, and flexible support for up to four external sensors for measuring temperature, current, CO_2, voltage, and more.

Supported Measurements:

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

Key Advantages:

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

Minimum System Requirements:

Software
See pg 38

USB cable*

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

*USB cable included with software part # BHW-PRO-CD

HOBO UX120 4-Channel Thermocouple Logger

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

The HOBO UX120 Thermocouple logger is a 4-channel LCD data logger for measuring and recording temperature in a range of monitoring applications. The logger makes it easy and convenient to record temperatures over a broad range (-260 to 1820°C) and can accept up to four J, K, T, E, R, S, B, or N type probes.

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

Supported Measurements:

Temperature

Key Advantages:

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

Minimum System Requirements:

Software
See pg 38

USB cable*

Part number	UX120-014M

Internal Temperature	
Range	-20° to 70°C (-4° to 158°F)
Accuracy	±0.21°C from 0° to 50°C (±0.38°F from 32° to 122°F)
Resolution	0.024°C at 25°C (0.04°F at 77°F)
Drift	<0.1°C (0.18°F) per year

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

Thermocouple (probes sold separately)	Range	Accuracy	Resolution
Type J	-210° to 760°C (-346° to 1,400°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.03°C (0.06°F)
Type K	-260° to 1,370°C (-436° to 2,498°F)	±0.7°C (±1.26°F) ± thermocouple probe accuracy	0.04°C (0.07°F)
Type T	-260° to 400°C (-436° to 752°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.02°C (0.03°F)
Type E	-260° to 950°C (-436° to 1,742°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.03°C at (0.05°F)
Type R	-50° to 1,550°C (-58° to 2,822°F)	±2.2°C (±3.96°F) ± thermocouple probe accuracy	0.08°C (0.15°F)
Type S	-50° to 1,720°C (-58° to 3,128°F)	±2.2°C (±3.96°F) ± thermocouple probe accuracy	0.08°C (0.15°F)
Type B	550° to 1,820°C (1,022° to 3,308°F)	±2.5°C (±4.5°F) ± thermocouple probe accuracy	0.1°C (0.18F)
Type N	-260° to 1,300°C (-436° to 2,372°F)	±1.0°C (±1.8°F) ± thermocouple probe accuracy	0.06°C (0.11°F)

*USB cable included with software part # BHW-PRO-CD
Note: for a single thermocouple input logger, please see page 4

HOBO UX120
4-Channel Pulse Logger

Log pulse signals, events, state changes, and runtimes

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

Supported Measurements:

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

Key Advantages:

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

Minimum System Requirements:

Software See pg 38   USB cable*   Sensor See pg 43

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

*USB cable included with software part # BHW-PRO-CD

HOBO U12 4-Channel Loggers

Multi-channel energy & environmental monitoring

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

Supported Measurements:

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

Key Advantages:

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

Minimum System Requirements:

Software See pg 38

USB cable*

Part number	U12-012[1] (Temp/RH/Light/Ext)	U12-013[1] (Temp/RH/2 Ext)
Memory	43,000 measurements	
Sampling rate	1 second to 18 hours, user-selectable	
Battery life	1 year typical, user-replaceable, CR2032	
Temperature		
Max range	-20° to 70°C (-4° to 158°F)	
Accuracy	± 0.35°C from 0° to 50°C (± 0.63°F from 32° to 122°F)	
Resolution (12-bit)	0.03°C @ 25°C (0.05°F @ 77°F)	
Relative Humidity		
Measurement range	5% to 95% RH (non-condensing)	
Accuracy	±2.5% from 10%RH to 90%RH typical to a maximum of ±3.5% including hysteresis at 25˚C (77˚F); below 10%RH and above 90%RH ±5% typical	
Resolution (10-bit)	0.05%RH	
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	
External Input		
Range	0 to 2.5 VDC	
Accuracy	± 2 mV, ± 2.5% of absolute reading	
Resolution	0.6 mV	
CE compliant	Yes	

*USB cable included with software part # BHW-PRO-CD
[1]Note: Temp & RH NIST certification services available for this product.
 For USB data logging applications in harsh indoor environments, see the 4-channel HOBO U12 Industrial data logger (U12-008)

HOBO U12 Stainless Temp Loggers

High-accuracy temperature monitoring for challenging process conditions

HOBO U12 Stainless Temperature Logger

HOBO U12 Stainless Temperature Logger with 5-inch Probe

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.

Supported Measurements:

Temperature

Key Advantages:

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

Minimum System Requirements:

Software
See pg 38

USB cable*

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

*USB cable included with software part # BHW-PRO-CD

HOBO U14 Loggers

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

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

Supported Measurements:

Temperature, Relative Humidity, Dew Point

Key Advantages:

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

Minimum System Requirements:

Software	USB cable[1]	Sensor*
See pg 38		See pg 41

Part number	U14-001[2] (Temp/RH)	U14-002[2] (Ext Temp/RH)*
Memory	43,000 measurements	
Sample rate	1 second to 18 hours, recording times up to 1 year	
Battery life	1 year typical, user-replaceable, 3 AAA alkaline	
Range	Temp -20°C to 50°C (-4°F to 122°F)	
Accuracy	±2.5% from 10%RH to 90%RH typical to a maximum of ±3.5% including hysteresis at 25˚C (77˚F); below 10%RH and above 90%RH ±5% typical	
Resolution	0.03° at 25°C (0.05° at 77°F), 0.05%RH	
Data channels	0	2
Measurement range	0% to 100%RH (non-condensing)	
Response time	Internal temp sensor • 15 min (to 90% in airflow of 1 m/sec) Internal RH sensor • 2 min (to 90% in airflow of 1 m/sec)	External temp Sensor • 5 min in airflow of 1 m/sec External RH Sensor • 5 min in airflow of 1 m/sec with protective cap
Dimensions	125 x 92 x 31 mm (4.9 x 3.6 x 1.2 in)	
CE compliant	Yes	

*Sensor required for U14-002 only
[1] USB cable included with software part # BHW-PRO-CD
[2] Note: Temp & RH NIST certification services available for this product.

HOBO RX3000 Remote Monitoring System

Real-time access to data from any web browser

The HOBO RX3000 is a research-grade data logging station that combines greater measurement flexibility and an on-board LCD display in a rugged, easy-to-deploy package.

Supported Measurements:

Indoor Environmental: Temperature, Relative Humidity, Dew Point, CO_2, Air Velocity, Volatile Organic Compound

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

Key Advantages:

- Cloud-based data access
- Plug-and-play operation
- Flexible support for a broad range of sensors
- LCD display for easy field deployment
- Alarm notifications via text, email
- Rugged double-weatherproof enclosure

Minimum System Requirements:

Software See pg 38   HOBOlink Data plan*   Power source[1]   Sensor See pg 41

Part number	RX3001-00-01 (ETH)	RX3002-00-01 (WiFi)	RX3003-00-01 (3G)
Smart Sensor Connectors	10 (up to 15 data channels; some sensors use more than one data channel)		
Maximum Number of Sensors	18 (when 2 Analog Modules are configured in the station)		
Smart Sensor Cable Length	100 m (328 ft) maximum		
Module Slots	2 (for optional Analog or Relay module; see manual for detailed module specification)		
Fastest Logging Rate	1 second	1 second	1 minute
Memory	32 MB, 2 million measurements		
Alarm notification latency	Logging interval plus 2-4 minutes, typical		
Environmental Rating	Weatherproof enclosure, NEMA 4X		
Operating Range	-40° to 60°C (-40° to 140°F)		
Power	Onset solar panel, AC charger or user-provided external power supply is required		
Battery Life	Typical 3-5 years; 4 Volt, 10 AHr, rechargeable sealed lead-acid		
Size	18.6 x 18.1 x 11.8 cm (7.3 x 7.1 x 4.7 in.)		
Weight	2.2 kg (4.85 lb)		
Communications	RJ45/100BaseT	IEEE 802.11 b/g/n	GSM/GPRS/EDGE: Quad band 850/900/1800/1900 MHz, UMTS/HSPA+: Five band 800/850/900/1900/2100 MHz
CE Compliant	Yes		

*Requires paid data plan. See page 40 for more details.
[1]AC power adapter or solar panel required. See page 46.

HOBO Energy Logger

Multi-channel energy data logging system

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

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

Supported Measurements:

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

Key Advantages:

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

Minimum System Requirements:

Software See pg 38   USB cable*   Sensor See pg 41

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

*USB to Serial interface cable, part #CABLE-PC-3.5, see page 45

Weatherproof Data Loggers

HOBO MX2300
Series Loggers

Bluetooth (BLE) Weatherproof loggers for outdoor temperature and humidity measurements

With Onset's new HOBO MX2300 Series Temp/RH loggers, field data collection has never been easier. You can set up and offload loggers wirelessly from your mobile device – eliminating the need to take a laptop or data shuttle into the field to retrieve data.

Supported Measurements:

Temperature, Relative Humidity, Dew Point

Minimum System Requirements:

HOBOmobile
See pg 39

Mobile device

Key Advantages:

- Weatherproof housing for use in outdoor or condensing environments
- High-accuracy measurements
- RH sensor provides superior recovery from condensing conditions
- Small-diameter, external sensor versions for measurements in tight spaces
- Wireless setup & download via Bluetooth Low Energy (BLE)

Choice of Models

The HOBO MX2300 Series offers five models covering a broad range of outdoor monitoring applications, from agricultural research to forest ecology studies. The series includes internal sensor models that are highly durable and easy to deploy, and external probe models that are well-suited for monitoring conditions in soils, water, walls, and more.

Part number	MX2301 (Internal Temp/RH)	MX2302 (External Temp/RH)	MX2303 (2x External Temp)	MX2304 (External Temp)	MX2305 (Internal Temp)
Temperature Sensor					
Range	-40 to 70°C (-40 to 158°F)		-40 to 100°C (-40 to 212°F) with tip and cable immersion in fresh water up to 50°C (122°F) for one year		-40 to 70°C (-40 to 158°F)
Accuracy	±0.25°C from -40 to 0°C (±0.45 from -40 to 32°F) ±0.2°C from 0 to 70°C (±0.36 from 32 to 158°F) ±0.25°C from 70 to 100°C (±0.45 from 158 to 212°F), MX2303 and MX2304 only				
Resolution	0.04°C (0.072°F)				
Drift	<0.01°C (0.018°F) per year				
Relative Humidity Sensor (MX2301, MX2302 only)					
Range	0 to 100% RH, -40° to 70°C (-40° to 158°F); exposure to conditions below -20°C (-4°F) or above 95% RH may temporarily increase the maximum RH sensor error by an additional 1%				
Accuracy	±2.5% from 10% to 90% (typical) to a maximum of ±3.5% including hysteresis at 25°C (77°F); below 10% RH and above 90% RH: ±5% typical				
Resolution	0.05%				
Drift	<1% per year typical				
Logger					
Memory	128 KB (84,650 measurements, maximum)				
Operating Range	-40° to 70°C (-40° to 158°F), IP67 and NEMA#6				
Transmission Range	Approximately 30.5 m (100 ft) line-of-sight				
Logging Rate	1 second to 18 hours				
Dimensions	Logger housing: 10.8 x 5.08 x 2.24 cm (4.25 x 2.0 x 0.88 in.)				
Mobile Device Compatibility	iOS 8.3, 8.4 & 9.0, and Bluetooth 4.0 or later				
CE compliant	Yes				

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HOBO Pro v2 Loggers

Weatherproof loggers for outdoor temperature and humidity measurements

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

Supported Measurements:

Temperature, Relative Humidity, Dew Point

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

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 47

Coupler[1]

Part number	U23-001[2] (Internal Temp/RH)	U23-002[2] (External Temp/RH)	U23-003 (2x External Temp)	U23-004 (Temp/External Temp)
Memory	42,000 measurements			
Sampling rate	1 second to 18 hours, fixed rate or multiple logging intervals			
Battery life	3 years typical, user-replaceable,1/2 AA lithium			
	Internal Temperature			
Measurement range	-40° to 70°C (-40° to 158°F)			
Accuracy	± 0.21°C over 0° to 50°C (± 0.38°F over 32° to 122°F)			
Resolution (12-bit)	± 0.02°@ 25°C (± 0.04°F@ 77°F)			
Stability (drift)	< 0.1°C (0.18°F) per year			
	Relative Humidity (U23-001 & U23-002 only)			
Measurement range	0 to 100% RH, -40° to 70°C (-40° to 158°F)			
Accuracy	±2.5% from 10%RH to 90%RH typical to a maximum of ±3.5% including hysteresis at 25°C (77°F); below 10%RH and above 90%RH ±5% typical			
Resolution (12-bit)	0.05%RH			
	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) with sensor tip and cable immersion in fresh water up to 50°C (122°F) for one year			
Accuracy	± 0.21°C from 0° to 50°C (± 0.36°F from 32° to 122°F)			
Resolution	0.02°@ 25°C (0.04°@ 77°F)			
Dimensions	Housing measures 10.2 × 3.8 cm (4.0 × 1.5 in.)			
CE compliant		Yes		

*HOBO Base Station or HOBO Waterproof Shuttle required. See pages 47-48 for more details.
[1]Coupler included with HOBO Base Station or HOBO Waterproof Shuttle.
[2]Note: Temp & RH NIST certification services available for this product.

HOBO RG3 Rain Gauge

Rainfall data logging system

The HOBO RG3 data logging rain gauge is a self-contained device 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.

Supported Measurements:

Rainfall, Temperature

Key Advantages:

- 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
- Side bracket for mast mounting (hose clamps included)
- Self-emptying for continuous rainfall logging

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 48

Part numbers	RG3-M, RG3
Memory	Events only: 16K to 23K events Events and temperature: 25K to 30K data points
Measurement 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
Maximum Rainfall rate	12.7 cm (5 in) per hour
Battery life	1 year typical, user-replaceable, CR2032
	Temperature
Measurement range	-20° to 70°C (-4° to 158°F)
Accuracy	± 0.53°C from 0° to 50°C (± 0.95°F from 32° to 122°F); a solar radiation shield is required for temperature measurements in sunlight
Resolution	0.14°C at 25°C (0.25°F at 77°F)
Sample rate	1 second to 18 hours, user-selectable
Dimensions	15.2 cm diameter x 25.7 cm high (6 x 10 in) 1.2 kg (2.5 lbs)
CE compliant	Yes

*HOBO Base Station or HOBO Waterproof Shuttle required. See pages 47-48 for more details.

HOBO Pendant® Event

Measures temperature, events and rainfall

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.

Supported Measurements:

Temperature, Event, Rainfall

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

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 48

Part number	UA-003-64
Memory	Events only: 16K to 23K events Events and temperature: 25K to 30K data points
Battery life	1 year typical, user-replaceable CR2032
Rain Gauge Tips	
External Event type:	Relay contact closure or rain gauge "tips"
Connection	2 m (6 ft) cable with 2-wire input
Maximum input frequency	1 Hz (1 pulse per second)
Temperature	
Measurement range	-20° to 70°C (-4° to 158°F)
Accuracy	± 0.53°C from 0° to 50°C (± 0.95°F from 32° to 122°F); a solar radiation shield is required for temperature measurements in sunlight
Resolution	0.14°C at 25°C (0.25°F at 77°F)
Response time	Airflow of 2 m/s (4.4 mph): 10 minutes, typical to 90%
Sample rate	1 second to 18 hours, user-selectable
Dimensions	7.1 x 3.3 x 2.3 cm (2.8 x 1.3 x 0.9 in) Cable 1.8 m (6 ft)
CE compliant	Yes

*HOBO Base Station or HOBO Waterproof Shuttle required. See pages 47-48 for more details.

HOBO Pendant® G

Measures acceleration, tilt, and motion

Measure 3-dimensional motion, such as sports activity or medical therapy compliance with the HOBO Pendant G data logger. With this logger, users can measure acceleration and angular displacement in 1, 2 or 3 axes. Use this data to monitor activity and improve performance.

Supported Measurements:

Acceleration, Tilt, Motion

Key Advantages:

- Low-cost acceleration and tilt measurement
- Waterproof housing for wet or underwater use
- Data readout in less than 30 seconds via fast Optic USB interface

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 48

Part number	UA-004-64
Memory	64K bytes (approximately 21.8K combined x-, y-, and z-axis readings or events)
Battery life	1 year typical, user-replaceable, CR2032
Resolution	0.025 g; 0.245 m/s² (0.8 ft/s²)
Logging interval	1 second to 18 hours, 12minutes, 15 seconds in Normal mode 0.01 seconds (100 Hz) to 0.99 seconds (1.01 Hz) in Fast mode
Time accuracy	±1 minute per month at 25°C (77°F)
Operating range	In water/ice: -20° to 50°C (-4° to 122°F) In air: -20° to 70°C (-4° to 158°F)
Water depth rating	30 m from -20° to 20°C (100 ft from -4° to 68°F)
Dimensions	5.8 x 3.3 x 2.3 cm (2.3 x 1.3 x 0.9 in)
CE compliant	Yes

*HOBO Base Station or HOBO Waterproof Shuttle required. See pages 47-48 for more details.

HOBO RX3000 Remote Weather Station

Research-grade weather monitoring with plug-and-play convenience

The HOBO RX3000 is a research-grade data logging weather station that combines greater measurement flexibility and an on-board LCD display in a rugged, easy-to-deploy package.

Supported Measurements:

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

Key Advantages:

- Cloud-based data access
- Configure & check on your RX3000 from mobile devices
- Plug-and-play operation
- Flexible support for a broad range of sensors
- LCD display for easy field deployment
- Alarm notifications via text, email
- Rugged double-weatherproof enclosure

Minimum System Requirements:

Software
See pg 38

HOBOlink
Data plan*

Power
source[1]

Sensor*
See pg 41

Part number	RX3001-00-01 (ETH)	RX3002-00-01 (WiFi)	RX3003-00-01 (3G)
Smart Sensor Connectors	10 (up to 15 data channels; some sensors use more than one data channel)		
Maximum Number of Sensors	18 (when 2 Analog Modules are configured in the station)		
Smart Sensor Cable Length	100 m (328 ft) maximum		
Module Slots	2 (for optional Analog or Relay module; see manual for detailed module specification)		
Fastest Logging Rate	1 second	1 second	1 minute
Memory	32 MB, 2 million measurements		
Alarm notification latency	Logging interval plus 2-4 minutes, typical		
Environmental Rating	Weatherproof enclosure, NEMA 4X		
Operating Range	-40° to 60°C (-40° to 140°F)		
Power	Onset solar panel, AC charger or user-provided external power supply is required		
Battery Life	Typical 3-5 years; 4 Volt, 10 AHr, rechargeable sealed lead-acid		
Size	18.6 x 18.1 x 11.8 cm (7.3 x 7.1 x 4.7 in.)		
Weight	2.2 kg (4.85 lb)		
Communications	RJ45/100BaseT	IEEE 802.11 b/g/n	GSM/GPRS/EDGE: Quad band 850/900/1800/1900 MHz, UMTS/HSPA+: Five band 800/850/900/1900/2100 MHz
CE Compliant	Yes		

*Requires paid data plan. See page 40 for more details.
[1]AC power adapter or solar panel required. See page 46.

HOBO Weather Stations

Research-grade weather monitoring with plug-and-play convenience

HOBO Weather Stations save you time and money by offering plug-and-play convenience and research-grade performance.

HOBO RX3000

- 10 Smart Sensor inputs
- Cloud-based data access
- Configure & check from mobile devices
- Supports broad range of sensors
- LCD display
- Optional analog sensor & relay modules

Lean more on page 21

HOBO U30-NRC

- 5 or 10 Smart Sensor inputs
- Optional analog sensor port
- Built-in relay
- Supports broad range of sensors

Lean more on page 24

HOBO H21-USB

- 5 Smart Sensor inputs
- Compact, low-cost
- Weatherproof IP66 enclosure
- Supports broad range of sensors

Lean more on page 25

2 Meter Tripod
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 also available M-TPB-KIT

3 Meter Tripod Kit
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) •

3 Meter Tripod
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.

HOBO Weather Stations

Wind Speed

Rain Gauge

Light Sensor

Wind Direction

Light Sensor Bracket

Full Cross Arm

Solar Radiation Shield

Solar Panel

HOBO RX3000 / U30 / H21

Barometric Pressure

3 Meter Tripod with Mast

Light Sensor Bracket
M-LBB
Includes leveling screws and u-bolts for mast mounting.

Solar Radiation Shield
RS3-B
Pre-assembled for S-THBs, S-TMBs, includes clamp for mast mounting.

Full Cross Arm
M-CAA
91.5 cm (36 in)
For use with Onset tripods or masts, the full cross arm assures unobstructed wind measurement.

NDVI Light Sensor Bracket
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
M-LLA
Purchase one for use on any number of light sensors.

Smart Sensor Extension Cables
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-CASE2). Network cable length limited to 100 meters per data logger.

HOBO U30-NRC
Weather Station

Research-grade data logging weather station

This rugged weather station is one of Onset's most durable outdoor environmental monitoring solutions. Users can easily configure the HOBO U30-NRC Weather Station to fit their application needs. Use up to 15 channels to collect environmental data and then upload to HOBOware Pro software for expert analysis.

Supported Measurements:

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

Key Advantages:

• Rugged double-weatherproof, tamper-proof enclosure
• Setup is quick and easy with plug-and-play sensors
• Fast data offload via USB
• Optional analog inputs with sensor excitation
• Includes relay that can be activated on user-defined alarm conditions

Minimum System Requirements:

Software
See pg 38

Power source[1]

Sensor*
See pg 41

Part number	U30-NRC
Smart-Sensor Inputs	5 or 10
Data Channels	Maximum of 15 (some sensors use more than one data channel)
Smart Sensor Cable Length	100m (323ft) maximum
Alarm Relay	Can be activated, deactivated or pulsed on user-defined sensor alarms.
Logging Interval	1 minute to 18 hours, user-specified
Data Storage Memory	512K bytes local storage in non-volatile flash memory
Environmental Rating	Weatherproof enclosure, NEMA 4x
Operating Range	-40 to 60ºC (-40 to 140ºF) see battery life
Power	An Onset solar panel (3w, or 6w) or AC adapter is required
Battery Life	3-5 years, 4 volt 10 AHr rechargeable sealed lead acid
Dimensions	17.8 x 11.7 x 19.3 cm (7.0 x 4.6 x 7.6 in)
Weight	2kg (4lbs 10oz)
Local Communication	USB
CE Compliant	Yes

[1]AC power adapter or solar panel required. See page 46. For more details

HOBO USB Micro Station

Multi-channel weatherproof station for monitoring outdoor environmental conditions

Rugged and compact, the redesigned HOBO USB Micro Station is a weatherproof data logger for multi-channel monitoring of microclimates. This battery-powered station accepts up to five plug-and-play Smart Sensors and has a hinged door to make sensor installation simple and quick. The Micro Station is equipped with a built-in USB port for fast, efficient data readout to a computer, and integrated mounting tabs for easy installation.

Key Advantages:

- Compact size for easy deployment
- Weatherproof IP66 enclosure for harsh environments
- Direct USB offload--no need for an adapter cable
- Includes five plug and play Smart Sensor inputs
- Hinged door and integrated mounting tabs
- Runs for up to a year on four standard AA batteries
- Compatible with HOBOware and HOBOware Pro software for logger setup, graphing and analysis

Supported Measurements:

4-20mA, Amp Hour, Barometric Pressure, DC Voltage, Kilowatt Hours, Leaf Wetness, Light Intensity, Power Factor, Pulse Input, Rainfall, Relative Humidity, Soil Moisture, Temperature, Volt-Amp Reactive, Volt-Amp Reactive hour, Volt-Amps, Water Flow, Watt Hours, Watts, Wind

Minimum System Requirements:

Software
See pg 38

USB cable*

Sensor*
See pg 41

Part number	H21-USB
Operating Range	-20° to 50°C (-4° to 122°F) with alkaline batteries -40 to 70°C (-40 to 158°F) with lithium batteries
Smart Sensor Connectors	5
Smart Sensor Network Cable Length	100 m (328 ft) maximum
Logging Interval	1 second to 18 hours
Start Modes	Immediate, at interval, push button, or delayed start
Memory Modes	Stop when full or wrap when full
Memory	512 KB nonvolatile flash data storage
Time Accuracy	0 to 2 seconds for the first data point and ±5 seconds per week at 25°C (77°F)
Battery Type	Four AA 1.5 V alkaline batteries for operating conditions of -20° to 50°C (-4° to 122°F); four AA 1.5 V lithium batteries for operating conditions of -40 to 70°C (-40 to 158°F)
Battery Life	1 year, typical use (up to five sensors with 1 minute or greater logging interval)
Communication Type	USB 2.0 interface
Full Memory Download Time	4 minutes
Enclosure Access	Hinged door secured by one latch with eyelet for use with user-supplied padlock
Materials	Outer enclosure: Polycarbonate/PBT blend with stainless steel hinge pins; Gasket: Silicone foam; Cable channel: EPDM rubber
Dimensions	17.04 x 11.94 x 4.47 cm (6.71 x 4.70 x 1.76 in.) Padlock hole diameter: 0.58 cm (0.23 in.)
Weight	414 g (14.6 oz)
Environmental Rating	Weatherproof enclosure, NEMA 4X and IP66
CE Compliant	Yes

*USB cable included with software part # BHW-PRO-CD

Waterproof Data Loggers

TidbiT® v2 Temp Logger

Small, durable logger for measuring water temperature

Onset's smallest data logger, the TidbiT v2 has 12-bit resolution and a precision sensor for ±0.2°C accuracy over a wide temperature range. It is waterproof to 300 meters (1,000 feet) and can be used in a wide range of water temperature monitoring applications.

Supported Measurements:

Temperature

Key Advantages:

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

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 47

Coupler[1]

Part number	UTBI-001
	Temperature Sensor
Operation range	-20° to 70°C (-4° to 158°F) in air; maximum sustained temperature of 30°C (86°F) in water**
Accuracy	± 0.21°C over 0° to 50°C (± 0.38°F over 32° to 122°F)
Resolution	0.02°C at 25°C (0.04°F at 77°F)
Response time	5 minutes in water; 12 minutes in air moving 2 m/sec; 20 minutes in air moving 1 m/sec (typical to 90%)
Stability (drift)	0.1°C (0.18°F) per year
	Logger
Real-time clock	± 1 minute per month 0° to 50°C (32° to 122°F)
Battery	3 Volt lithium, non-replaceable
Battery life	5 years with 1 minute or greater logging interval
Memory	42,000 measurements
Waterproof	To 305 m (1,000 ft)
Dimensions	3.0 × 4.1 × 1.7 cm (1.2 × 1.6 × 0.68 in); mounting bail 4.6 mm (3/16 in) diameter hole
CE compliant	Yes

*HOBO Base Station or HOBO Waterproof Shuttle required. See page 47 for more details.
[1]Coupler included with HOBO Base Station or HOBO Waterproof Shuttle.
**To guarantee accuracy, the TidbiT v2 Temp must not be used in condensing environments and water temperatures higher than 30°C (86°F) for more than eight cumulative weeks over the life of the logger. Frequent or prolonged exposure will lead to measurement drift and eventual failure.

NEW
HOBO MX2200 Series Water Temp Loggers

Water Temperature Data Straight to your Mobile Device

The new HOBO MX2200 Series water temperature loggers bring convenient wireless setup and download to Onset's field-proven TidbiT and Pendant water temp loggers! These new models feature the power of Bluetooth Low Energy (BLE) to deliver high-accuracy temperature measurements straight to your iOS or Android mobile device. No need to take a laptop or shuttle into the field!

With its rugged case design, expanded memory, and both temperature and temperature/light models, these loggers are ideal for measuring temperature in streams, lakes, oceans, and soil environments.

Supported Measurements:

Temperature, Light
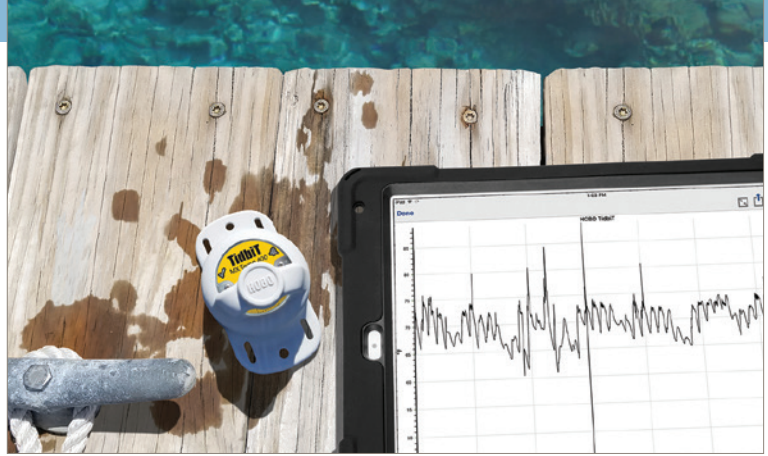
Key Advantages:

• Convenient wireless setup and download via BLE
• Large memory stores 96,000 measurements
• Mounting tabs to make deployment fast and easy
• Water detection feature conserves battery life
• User-replaceable battery (MX2201, MX2202, MX2203)
• Works with Onset's HOBOmobile® app

Minimum System Requirements:

HOBOmobile   Mobile
See pg 39   device

Effortless, Accurate Data

Onset's HOBOmobile app, a free download from iTunes and Google Play, makes it easy to configure MX2200 Series loggers in the field and manage your data.

The loggers provide high accuracy over a wide temperature range. And, the HOBO MX2202 model features a built-in light sensor to give you repeatable light-level data in shallow-water monitoring applications.

Feature-packed

The reliable HOBO MX2200 Series loggers integrate a rich set of features in a compact, rugged package designed to streamline your deployment.
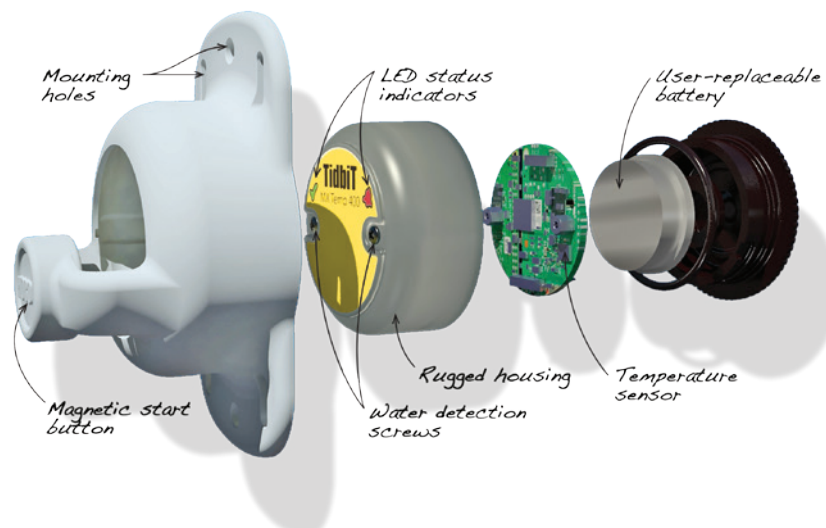
MX2201	MX2202	MX2203	MX2204
Temperature	Temperature / Light	Temperature	Temperature
Depth rating 100 ft	Depth rating 100 ft	Depth rating 400 ft	Depth rating 5000 ft

Temperature Sensor (MX2201 and MX2202)

	Range	-20° to 70°C (-4° to 158°F) in air -20° to 50°C (-4° to 122°F) in water
	Accuracy	±0.5°C from -20° to 70°C (-4° to 158°F)
	Resolution	0.04°C (0.072°F)
	Drift	<0.1°C (0.18°F) per year
	Response Time	17 minutes typical to 90% in air moving 1 m/s, unmounted 7 minutes typical to 90% in stirred water, unmounted
Light Sensor (MX2202)	Range	0 to 167,731 lux (15,582 lum/ft2)
	Accuracy	±10% typical for direct sunlight
Logger	Logger Operating Range	-20° to 70°C (-4° to 158°F) in air
	Waterproof	To 30.5 m (100 ft)
	Wireless Data Standard	Bluetooth Low Energy (Bluetooth Smart)
	Logging Rate	1 second to 18 hours
	Time Accuracy	±1 minute per month at 25°C (77°F)
	Battery	CR2032 3V lithium, user-replaceable
	Battery Life	1 year typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Always On, 2 years typical with Bluetooth Always Off
	Memory	96,000 measurements
	Dimensions	3.35 x 5.64 x 1.6 cm (1.32 x 2.22 x 0.63 inches)

Temperature Sensor (MX2203 and MX2204)

	Range	MX2203: -20° to 70°C (-4° to 158°F) in air; -20° to 50°C (-4° to 122°F) in water MX2204: -20° to 70°C (-4° to 158°F) in air; -20° to 50°C (-4° to 122°F) in water, maximum sustained temperature in water 30°C (86°F)
	Accuracy	±0.25°C from -20° to 0°C (±.45°F from -4° to 32°F) ±0.2°C from 0° to 70°C (±0.36°F from 32° to 158°F)
	Resolution	0.01°C (0.018°F)
	Drift	<0.1°C (0.18°F) per year
	Response Time	MX2203: 17 minutes typical to 90% in air moving 1 m/s, unmounted; 7 minutes typical to 90% in stirred water, unmounted MX2204: 15 minutes typical to 90% in air moving 1 m/s, unmounted; 4 minutes typical to 90% in stirred water, unmounted
Logger	Logger Operating Range	-20° to 70°C (-4° to 158°F)
	Waterproof	MX2203: To 122 m (400 ft) MX2204: To 1,524 m (5,000 ft)
	Transmission Range	Approximately 30.5 m (100 ft) line-of-sight
	Wireless Data Standard	Bluetooth Low Energy (Bluetooth Smart)
	Logging Rate	1 second to 18 hours
	Time Accuracy	±1 minute per month at 25°C (77°F)
	Battery	CR2477 3V lithium, user-replaceable in MX2303, non-replaceable in MX2304
	Battery Life	3 years, typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Always On, 5 years typical with Bluetooth Always Off
	Memory	96,000 measurements
	Dimensions	MX2203: 4.45 x 7.32 x 3.58 cm (1.75 x 2.88 x 1.41 inches) MX2204: 4.06 x 6.99 x 3.51 cm (1.6 x 2.75 x 1.38 inches)

HOBO Water Temp Pro v2 Logger

Affordable temperature monitoring for fresh or salt water

The HOBO Water Temp Pro v2 data logger features 12-bit resolution and a precision sensor for ±0.2°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.

Supported Measurements:

Temperature

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

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 47

Coupler[1]

Part number	U22-001
Memory	42,000 measurements
Logging interval	1 second to 18 hours, fixed - or multiple-rate up to 8 user-defined sampling intervals
Battery life	6 years with 1 minute or greater logging interval, factory-replaceable ONLY
Measurement range	-40° to 70°C (-40° to 158°F) in air; maximum sustained temperature of 50°C (122°F) in water
Accuracy	± 0.21°C over 0° to 50°C (± 0.38°F over 32° to 122°F)
Resolution	0.02°C at 25°C (0.04°F at 77°F)
Response time	(90%) 5 minutes in water; 12 minutes in air moving 2 m/sec (typical)
Dimensions	3.0 cm (1.19 in) maximum diameter, 11.4 cm (4.5 in) length; mounting hole 6.3 mm (0.25 in) dia
CE compliant	Yes

*HOBO Base Station or HOBO Waterproof Shuttle required. See page 45 for more details.
[1]Coupler included with HOBO Base Station or HOBO Waterproof Shuttle.

HOBO Pendant Loggers

Low-cost data logging solution for temperature, light, and more

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

Supported Measurements:

Temperature, Light Intensity, Tilt, Acceleration

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 Optic USB interface

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 48

Part number	UA-001-08	UA-001-64	UA-002-08	UA-002-64	UA-004-64[1]
Memory (measurements)	6,500 temp	52,000 temp	3,500 temp & light	28,000 temp & light	64,000 accel 32,000 tilt 21,333 motion
Sample rate	1 second to 18 hours, user-selectable				100 per second
Battery life	1 year typical, user-replaceable, CR2032				
Water Depth Rating	30 m from -20 to 20°C (100 ft from -4° to 68°F)				
Temperature					
Measurement range	-20° to 70°C (-4° to 158°F) in air, -20° to 50°C (-4° to 122°F) in water				
Accuracy	± 0.53°C from 0° to 50°C (± 0.95°F from 32° to 122°F)				
Resolution (10-bit)	0.14°C @ 25°C (0.25°F @ 77°F)				
Response time	10 minutes (to 90% in airflow of 2 m/s), 5 minutes (to 90% in water)				
Light intensity					
Range	0-323,000 lumens/m2 [0-30,000 foot candles (lumens/ft2)]				
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	± 3 G				
Accuracy	±2.5% FS @ 25°C (77°F)—Factory-calibrated				
Resolution (8-bit)	±4.3° @ 90° to ±13° @ 0° and 180°				
Dimensions	5.8 x 3.3 x 2.3 cm (2.3 x 1.3 x 0.9 in)				
CE compliant	Yes				

*HOBO Base Station or HOBO Waterproof Shuttle required. See page 47-48 for more details.
[1] For more details, see page 20

HOBO U12 Deep Ocean Temp Logger

Water temperature monitoring in extreme ocean environments

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.

Supported Measurements:

Temperature

Key Advantages:

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

Minimum System Requirements:

Software
See pg 38

USB cable*

Part number	U12-015-03
Memory	43,000 measurements
Sample rate	1 second to 18 hours, user-selectable
Battery life	3 years typical, factory-replaceable
Measurement range	Logging: -40° to 125°C (-40° to 257°F) Launch/Readout: 0° to 50°C (32° to 122°F), per USB specification
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)
Dimensions	114 x 20.6 mm diameter (4.5 x 0.81 in diameter) 6.4 mm (0.25 in) mounting hole
CE compliant	Yes

*USB cable included with software part # BHW-PRO-CD

HOBO MX2001 Water Level Logger

Wireless access to water level and temperature data via Bluetooth Low Energy (BLE)

Onset's HOBO MX2001 is the industry's first water level data logger designed for convenient wireless setup and download from mobile devices via Bluetooth Low Energy (BLE) technology. The logger dramatically simplifies and lowers the cost of field data collection by providing wireless access to high-accuracy water level and temperature measurements right from a mobile phone or tablet.

Supported Measurements:

Water Level, Water Temperature, Absolute Pressure, Barometric Pressure, Differential Pressure

Key Advantages:

- Wireless data offload to mobile devices via BLE
- Direct-read cable connects sensor to top-end logger
- Integrated sensor enables direct water level readout
- Reference water level can be entered at start of deployment
- Use HOBOmobile for setup, data viewing, and data sharing
- Powered by two user-replaceable AA batteries
- Normal, multi-rate, and burst-logging modes
- Durable ceramic sensor
- Available with stainless steel or titanium sensor ends

Minimum System Requirements:

HOBOmobile
See pg 39

Mobile
device

Cable
See pg 45

Part number	MX2001-01 (and-Ti)	MX2001-02	MX2001-03	MX2001-04 (and-Ti)
Water Level				
Range	Approx. 0 to 9 m (0 to 30 ft)	Approx. 0 to 30.6 m (0 to 100 ft)	Approx. 0 to 76.5 m (0 to 251 ft)	Approx. 0 to 4 m (0 to 13 ft)
Calibrated Range (0° to 40°C (32° to 104°F)	69 to 207 kPa (10 to 30 psia)	69 to 400 kPa (10 to 58 psia)	69 to 850 kPa (10 to 123.3 psia)	69 to 145 kPa (10 to 21 psia)
Accuracy (Typical)	±0.05% FS, 0.5 cm (0.015 ft)	±0.05% FS, 1.5 cm (0.05 ft)	±0.05% FS, 3.8 cm (0.125 ft)	±0.075% FS, 0.3 cm (0.01 ft)
Resolution	0.02 kPa (0.003 psi), 0.21 cm (0.007 ft) water	<0.04 kPa (0.006 psi), 0.41 cm (0.013 ft) water	<0.085 kPa (0.012 psi), 0.87 cm (0.028 ft) water	<0.014 kPa (0.002 psi), 0.14 cm (0.005 ft) water
Temperature				
Range	-20° to 50°C (-4° to 122°F)			
Accuracy	±0.44°C from 0° to 50°C (±0.79°F from 32° to 122°F)			
Resolution	0.1°C at 25°C (0.18°F at 77°F)			
Barometric Pressure				
Range	66 to 107 kPa (9.57 to 15.52 psia)			
Accuracy (typical)	±0.075% FS, 0.3 cm (0.01 ft) water			
Logger Specifications				
Operating Range	-20° to 50°C (-4° to 122°F)			
Transmission Range	Approximately 30.5 m (100 ft) line-of-sight			
Dimensions	Top end (MX2001-TOP): 2.56 cm (1.0 inches) diameter, 28.9 cm (11.4 inches) length Sensor end (MX2001-0x-S and MX2001-0x-Ti-S: 2.54 cm (1.0 inches) diameter, 9.91 cm (3.9 inches) length			
CE compliant	Yes			
FCC compliant	Yes			

Direct read cables can be ordered in lengths from 0.2 m to 500 m

HOBO U20 Series Water Level Loggers

Accurate, affordable water level monitoring

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 wells, streams, lakes, wetlands and tidal estuaries.

Supported Measurements:

Water Level, Barometric Pressure, Pressure (Absolute), Temperature

Water Level Logger Kits:

Deluxe Kit includes a carrying case, two HOBO Water Level Loggers (one 13 foot for barometric pressure and one 13 foot, 30 foot, or 100 foot), HOBOware Pro software, and a HOBO Waterproof Data Shuttle with coupler. The Starter Kit includes a HOBO Water Level Logger, HOBOware Pro Software, and an Optic USB Base Station. Available in 13 foot, 30 foot, and 100 foot depths.

Deluxe Kit

Starter Kit

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

Minimum System Requirements:

Software   Base Station*   Coupler[1]
See pg 38   See pg 47

Part number	U20-001-04/ U20-001-04-Ti	U20-001-01/ U20-001-01-Ti	U20-001-02/ U20-001-02-Ti	U20-001-03/ U20-001-03-Ti
HOBO Water Level Specifications				
Range	0-4 m (0-13 ft) 0-145 kPa (0-21 psia)	0-9 m (0-30 ft) 0-207 kPa (0-30 psia)	0-30 m (0-100 ft) 0-400 kPa (0-58 psia)	0-76 m (0-250 ft) 0-850 kPa (0-123 psia)
Factory Calibrated Range (0° to 40°C; 32° to 104°F)	69 to 145 kPa (10-21 psia)	69 to 207 kPa (10-30 psia)	69 to 400 kPa (10-58 psia)	69 to 850 kPa (10-123 psia)
Water Level Accuracy (Typical Error)	± 0.3 cm (0.01 ft) (± 0.075% FS)	± 0.5 cm (0.015 ft) (± 0.05% FS)	± 1.5 cm (0.05 ft) (± 0.05% FS)	± 3.8 cm (0.125 ft) (± 0.05% FS)
Resolution	0.14 cm (0.005 ft)	0.21 cm (0.007 ft)	0.41 cm (0.013 ft)	0.87 cm (0.028 ft)
Burst Pressure	310 kPa (45 psia) 18 m (60 ft) depth		500 kPa (72.5 psia) 40.8 m (134 ft) depth	1200 kPa (174 psia) 112 m (368 ft) depth
Temperature Specifications (all models)				
Range	-20° to 50°C (-4° to 122°F)			
Accuracy	± 0.37° @ 20°C (± 0.67° @ 68°F) ± 0.44° from 0° to 50°C (± 0.79° from 32° to 122°F)			
Resolution (10 bit)	0.1° @ 20°C (0.18° @ 68°F)			
Response time	5 minutes (to 90% in water)			
Dimensions	2.46 cm diameter x 15 cm (0.97 x 5.9 in) hole in mounting bail 6.3 mm (0.25 in)			
CE compliant	Yes			

*Titanium version recommended for saltwater deployment.
[1]HOBO Base Station or HOBO Waterproof Shuttle required. See page 47-48 for more details.
[2]Coupler included with HOBO Base Station or HOBO Waterproof Shuttle.

HOBO U20L Series
Water Level Loggers

Low price, high accuracy

The HOBO U20L series loggers are low-cost, research-grade water level data loggers for continuously measuring water level and temperature in a wide range of underwater environments. They feature 0.1% measurement accuracy, a polypropylene housing for use in both fresh and salt water, and a non-vented design for convenient and hassle-free deployment.

Supported Measurements:

Water Level, Barometric Pressure, Pressure (Absolute), Temperature

Key Advantages:

• Self-contained, non-vented design enables easy deployment
• Ideal for use in both fresh and salt water environments
• Durable ceramic pressure sensor
• Ideal for use in wells, streams, lakes, wetlands and tidal areas

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 47

Coupler[1]

Part number	U20L-04	U20L-01	U20L-02
HOBO Water Level Specifications			
Range	0-4 m (0-13 ft) 0 to 145 kPa (0 to 21 psia)	0-9 m (0-30 ft) 0 to 207 kPa (0 to 30 psia)	0-30.6 m (0-100 ft) 0 to 400 kPa (0 to 58 psia)
Factory Calibrated Range (0° to 40°C; 32° to 104°F)	69 to 145 kPa (10 to 21 psia)	69 to 207 kPa (10-30 psia)	69 to 400 kPa (10 to 58 psia)
Water Level Accuracy (Typical Error)	± 0.4 cm (0.013 ft) (± 0.1% FS)	± 1.0 cm (0.03 ft) (± 0.1% FS)	± 3.0 cm (0.1 ft) (± 0.1% FS)
Resolution	0.14 cm (0.005 ft) water	0.21 cm (0.007 ft) water	0.41 cm (0.013 ft) water
Burst Pressure	310 kPa (45 psia) 18 m (60 ft) depth	310 kPa (45 psia) 18 m (60 ft) depth	500 kPa (72.5 psia) 40.8 m (134 ft) depth
Temperature Specifications (all models)			
Range	-20° to 50°C (-4° to 122°F)		
Accuracy	± 0.37° @ 20°C (± 0.67° @ 68°F) ± 0.44° from 0° to 50°C (± 0.79° from 32° to 122°F)		
Resolution (10 bit)	0.1° @ 20°C (0.18° @ 68°F)		
Response time	10 minutes (to 90% in water)		
Dimensions	3.18 cm diameter x 15.24 cm (1.25 x 6.0 in) hole in mounting bail 6.3 mm (0.25 in)		
CE compliant	Yes		

*HOBO Base Station or HOBO Waterproof Shuttle required. See page 47-48 for more details.
[1]Coupler included with HOBO Base Station or HOBO Waterproof Shuttle.

HOBO U24 Series Conductivity Loggers

Conductivity monitoring for freshwater and stable saltwater applications

HOBO Conductivity Loggers are convenient, rugged, and cost-effective data loggers for a variety of freshwater and saltwater monitoring applications.

The HOBO U24-001 model provides high-accuracy conductivity data in freshwater environments, for applications such as environmental impact monitoring, stormwater management, and water quality studies.

The HOBO U24-002-C model is for saltwater environments with relatively small changes in salinity (±5,000 µS/cm) such as saltwater bays, or to detect salinity events such as upwelling, rainstorm, and discharge events. This logger can also be used to gather salinity data for salinity compensation of HOBO U26 Dissolved Oxygen logger data. **Note:** This logger is not intended for monitoring salinity levels in waters with widely changing salinities as it can have significant measurement error and drift in those environments.

Supported Measurements:

Conductivity, Salinity, Temperature

Key Advantages:

- Non-contact capacitive sensor provides long life
- 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

Minimum System Requirements:

Software Base Station* Coupler[1]
See pg 38 See pg 47

Part number	U24-001 Conductivity	U24-002-C Conductivity/Salinity
Memory	18,500 temperature and conductivity measurements when using one conductivity range; 14,400 sets of measurements when using both conductivity ranges (64 kbytes)	
Conductivity Calibrated Measurement Ranges	Low Range: 0 to 1,000 µS/cm Full Range: 0 to 10,000 µS/cm	Low Range: 100 to 10,000 µS/cm High Range: 5,000 to 55,000 µS/cm
Conductivity Calibrated Range – Temperature Range	5° to 35°C (41° to 95°F)	
Specific Conductance Accuracy (in Calibrated Range using Conductivity Assistant and Calibration Measurements)	Low Range: 3% of reading, or 5 µS/cm Full Range: 3% of reading, or 20 µS/cm, whichever is greater	Low Range: 3% of reading or 50 µS/cm, whichever is greater High Range: 5% of reading, in waters within a range of ±3,000 µS/cm; waters with greater variation can have substantially greater error
Conductivity Resolution (typical)	1 µS/cm	2 µS/cm
Conductivity Drift	Less than 3% sensor drift per year	Up to 12% sensor drift per month. Use monthly start & end-point calibration to compensate
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
Sample rate	1 second to 18 hrs, fixed or multiple-rate sampling with up to 8 user-defined sampling intervals	
Time Accuracy	± 1 minute per month	
Battery	3.6 Volt lithium battery, life: 3 years (at 1 minute logging), typical	
Maximum Depth	70 m (225 ft)	
Dimensions	3.18 cm diameter x 16.5 cm, with 6.3 mm mounting hole (1.25 in diameter x 6.5", ¼ in hole)	
CE compliant	Yes	

*HOBO Base Station or HOBO Waterproof Shuttle required. See page 47-48 for more details.
[1]Coupler included with HOBO Base Station or HOBO Waterproof Shuttle.

HOBO U26 Dissolved Oxygen Logger

Affordable, high-performance dissolved oxygen monitoring

The HOBO U26 Dissolved Oxygen Logger measures concentrations of dissolved oxygen in lakes, streams, rivers, estuaries, and coastal waters. Used by aquatic biologists, hydrologists, and other research professionals to monitor water quality, the U26 is ideal for climate change and environmental impact studies as well as ecological and oceanographic research.

The HOBO U26 combines the high-accuracy, robust performance of industry-leading RDO® Basic (Rugged Dissolved Oxygen) sensor technology with an easy-to-maintain design, all at a fraction of the cost of other monitoring options.

Supported Measurements:

Dissolved Oxygen, Temperature

Key Advantages:

• Affordable, high performance DO monitoring
• Optical DO sensor technology for long-lasting calibration, less maintenance
• Software corrects for measurement drift from fouling; provides salinity-adjusted DO concentration and percent saturation (Salinity adjustment requires salinity meter reading or data logger file. Percent saturation requires barometric pressure data file.)
• Optic USB interface for high-speed, reliable data offload
• Easy-to-replace DO sensor cap lasts six months

Minimum System Requirements:

Software
See pg 38

Base Station*
See pg 47

Coupler[1]

Part number	U26-001
	Dissolved Oxygen
Sensor Type	Optical
Measurement Range	0 to 30 mg/L
Calibrated Range	0 to 20 mg/L; 0 to 35°C (32 to 95°F)
Accuracy	± 0.2 mg/L up to 8 mg/L; ± 0.5 mg/L from 8 to 20 mg/L
Resolution	0.02 mg/L
Response time	To 90% in less than 2 minutes
DO Sensor Cap Life	6 months (cap expires 7 months after initialization)
	Temperature
Operating Temperature and Measurement Range	-5 to 40°C (23 to 104°F), non-freezing
Temperature Accuracy	0.2°C (0.36°F)
Temperature Resolution	± 0.02°C (± 0.04°F)
Response Time	To 90% in less than 30 minutes
	Logger
Memory	21,700 sets of DO and temperature measurements
Logging Rate	1 minute to 18 hours
Time Accuracy	± 1 minute per month at 25°C (77°F)
Battery	3.6 V lithium battery; factory replaceable, life: 3 years (at 1 minute logging)
Maximum Depth	100 m (328 ft)
Dimensions	39.6 mm diameter x 266.7 mm (1.56 in diameter x 10.5 in)
CE Compliant	Yes

*HOBO Base Station or HOBO Waterproof Shuttle required. See page 47-48 for more details.
[1]Coupler included with HOBO Base Station or HOBO Waterproof Shuttle.

HOBOware / HOBOware Pro

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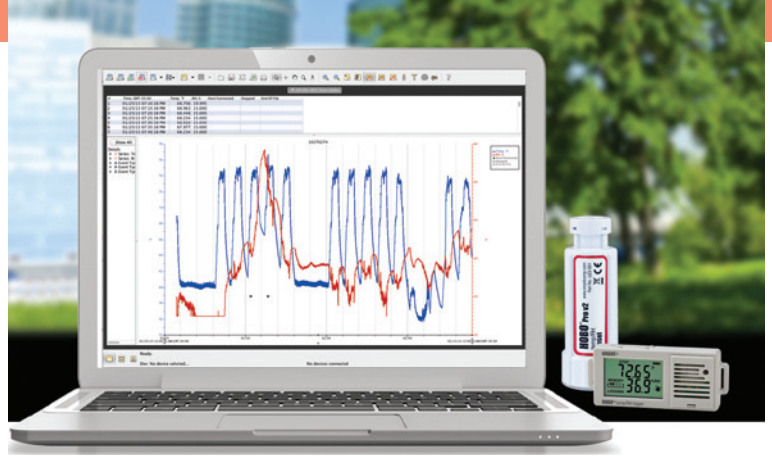
HOBOware is Onset's flagship setup, graphing and analysis software package for HOBO data loggers. It allows you to view, graph, and analyze data with point-and-click simplicity. You can easily set up your application in a matter of minutes, quickly read out and plot data, and export to spreadsheets for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

Standard Features:

• Simple menus for fast, easy logger setup and readout
• Scaling to real-world engineering units
• Presentation-quality graphs
• Easy export of data files to text format
• Free download

HOBOware Pro Features:

• Time-saving tools for fast setup and readout
• Advanced plotting tools for more precise data analysis
• Access to Data Assistants for post-processing data

Öownload your free 30-day trial of HOBOware Pro. From setup to analysis, no other data logger software can compare to the power and simplicity of HOBOware Pro.

HOBOware features comparison

	HOBOware	HOBOware Pro
Support for all HOBO data loggers	✓	✓
Quickly generate presentation-quality graphs	✓	✓
Copy & paste series	✓	✓
Merge data files	✓	✓
Save modified graphs as projects	✓	✓
Easy data export to XLS, CSV, & TXT files	✓	✓
Linear & Pulse Scaling Data Assistants	✓	✓
Time-saving tools for fast setup, readout & export		✓
Data Assistants for post processing Dissolved Oxygen, Conductivity, Water Level, Growing Degree Days, Grains per Pound & kWh		✓
Ability to create pie charts		✓
Crop a series to a specific time frame		✓
Subset Statistics Tool for details within a time frame		✓
21 CFR Part11 Compliance		✓
Data Shuttle support		✓
HOBOnode manager to support Data Nodes		✓
	Free Download	

System Requirements

• Windows: Windows 8 and 8.1 (Core, Pro), Windows 7 (Pro, Ultimate and Home Premium), Windows 10 (Home, Pro).
• Windows 7 Enterprise: Note: While HOBOware has been modified to work on Windows 7 Enterprise, there may be local configurations of that operating system that will not work with HOBOware.
• Mac: OS X Versions 10.9.x, 10.10.x and 10.11.x.
• Java Runtime Environment (JRE) 1.7.0_17 and above (32-bit or 64-bit on Windows). Please note that version 1.6, also known as Java 6, is no longer supported. See the time zone note below.
• One of the following Internet browsers: Safari 7 and 8, Microsoft Internet Explorer 10 and 11, as well as the most recent versions of Firefox and Google Chrome.
• Minimum screen resolution of 1024x768. Recommended screen resolution of 1280x800 or greater particularly for non-English users.
• 256+ colors
• 1.8 GHz single core CPU, 1GM RAM

HOBOmobile

Easy logger setup and data management software for HOBO MX Series loggers

HOBOmobile® is designed to enable communication between a Bluetooth® Low Energy (BLE) mobile phone or tablet and the HOBO MX series data loggers. You can configure and start the data logger, download the recorded data, and store and analyze the data. The HOBOmobile app is a free download. See pages 1-3 & 16 for more details.

Key Advantages:

- Communicate to HOBO MX data loggers using Bluetooth Low Energy, with no internet connection required
- Automatically upload data to Onset's HOBOlink cloud service for storing and merging data files
- Set data logger's name, password, logging rate, alarm threshold, and start & stop time
- Configure and clear audible alarms
- Page the data logger
- Export and share data as CSV, TXT, XLSX or HOBO files

Measure and log temperature and relative humidity in sensitive environments

Warehouses and storage facilities

Data centers and high-tech environments

Museums, archives and libraries

Commercial office buildings

Manufacturing facilities and testing labs

Hospitals and labs

If CO_2, temperature and humidity management are critical in your facility, do it faster and easier than ever with the new, BLE enabled HOBO MX Series Data Loggers.

Without connecting anything or even coming into physical contact with your data logger, you can set up the logger, check its status, page to locate it, and read out your data to be shared. It's incredibly easy for anyone to use, and leverages the tools we all have in our back pockets and backpacks – our phones and tablets!

Download on the App Store

ANDROID APP ON Google play

HOBOlink Web-Based Display/Readout

Powerful web-based access to HOBO RX3000 Remote Monitoring Systems

HOBOlink is a web-enabled software platform designed for HOBO RX3000 Remote Monitoring Systems. This data logger software allows you to easily access current and historical data, set alarm notifications and relay activations, and manage and control your HOBO RX3000 web-based data logging systems. See pages 13 and 21-23 for more details.

Key Advantages:

- Get 24/7 web access to your data
- Access your data with a web browser
- Horizontal zoom and cursor readout for easy data analysis
- Verify RX3000 system status remotely
- Set up and manage alarm notifications over the web
- Configure & check on your RX3000 monitoring station from your mobile devices
- Schedule automated delivery of data
- Export exactly the date range and sensors you want
- Supports HOBO U30 Remote Monitoring Systems as well
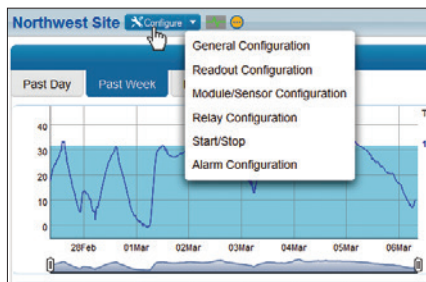
Web-based configuration

HOBOlink allows you to easily configure sensors, logging, alarm notifications, relay activations, and more.

Get notified

HOBOlink will send an email or a text message to your phone when conditions exceed set thresholds. Multiple levels of alarms and actions can be set for each sensor.
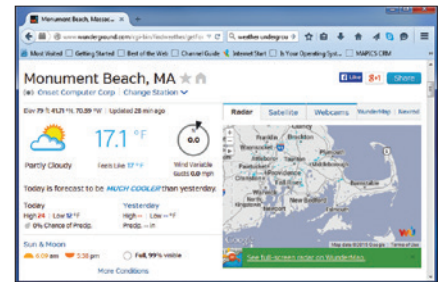
Get data automatically

Configure HOBOlink to automatically deliver data from RX3000s to other web-based services, such as Weather Underground.

External Sensors by Measurement

Indoor Environmental

Temperature

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-THB-M002[1]	12-bit Temp/RH smart (2m cable)	√	√	√	√		√			
S-THB-M008[1]	12-bit Temp/RH smart (8m cable)	√	√	√	√		√			
S-TMB-M002	12-bit Temp/RH smart (2m cable)	√	√	√	√		√			
S-TMB-M006	12-bit Temp smart (6m cable)	√	√	√	√		√			
S-TMB-M017	12-bit Temp smart (17m cable)	√	√	√	√		√			
TC6-J	Type J beaded thermocouple								√	√
TC6-K	Type K beaded thermocouple								√	√
TC6-T	Type T beaded thermocouple								√	√
TCP6-K12	Type K Probe thermocouple								√	√
TMC1-HD	Air/Water/Soil Temp (1' cable)					√				√
TMC6-HD	Air/Water/Soil Temp (6' cable)					√				√
TMC20-HD	Air/Water/Soil Temp (20' cable)					√				√
TMC50-HD	Air/Water/Soil Temp (50' cable)					√				√
TMC6-HC	Stainless steel Temp probe (6' cable)					√				√
TMC6-HE	Pipe Temp (6' cable)					√				√

Relative Humidity

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-THB-M002[1]	12-bit Temp/RH smart (2m cable)	√	√	√	√		√			
S-THB-M008[1]	12-bit Temp/RH smart (8m cable)	√	√	√	√		√			

Carbon Dioxide

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
TEL-7001	Telaire 7001 CO2	√	√		√	√				√

Air Velocity

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
T-DCI-F900-L-O	Air Velocity – 5 m/s long	√	√		√	√				√
T-DCI-F900-L-P	Air Velocity – 10 m/s long	√	√		√	√				√
T-DCI-F900-S-O	Air Velocity – 5 m/s std	√	√		√	√				√
T-DCI-F900-S-P	Air Velocity – 10 m/s std	√	√		√	√				√

Volatile Organic Compound

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
T-ION-TVOC	Volatile Organic Compound	√	√		√	√				√

Differential Pressure

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
T-VER-PXU-L	Differential pressure transducer	√	√		√	√				√
T-VER-PXU-X	Differential pressure transducer	√	√		√	√				√

Compressed Air Flow

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
T-CDI-5200-10S	Compressed Air Flow Meter	√	√		√	√				√
T-CDI-5200-20S	Compressed Air Flow Meter	√	√		√	√				√

[1] Note: Temp & RH NIST certification services available for this product.

External Sensors by Measurement

Gauge Pressure

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
T-ASH-G2-100	Ashcroft gauge pressure	√	√		√	√				√
T-ASH-G2-200	Ashcroft gauge pressure	√	√		√	√				√
T-ASH-G2-500	Ashcroft gauge pressure	√	√		√	√				√

Energy/Power

kW & kWh

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
T-VER-E50B2	Power & Energy meter	√	√	√	√					√
T-WNB-3D-240	WattNode 208/240 VAC 3-phase	√	√	√	√			√		√
T-WNB-3D-480	WattNode 480 VAC 3-phase	√	√	√	√			√		√
T-WNB-3Y-208-P	WattNode 208-240VAC 2 or 3 Branch	√	√	√	√					√
T-WNB-3Y-208	WattNode 208/240 VAC 1,2, or 3-Phase	√	√	√	√			√		√
T-VER-8044-100	Veris 480 V, 100 Amp Kilowatt transducer	√	√		√	√				√
T-VER-8051-300	Veris kWh transducer 1-Phase, 300 Amp	√	√	√	√			√		√
T-VER-8053-800	Veris kWh transducer 3-Phase, 800 Amp	√	√	√	√			√		√

AC & DC Current

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
CTV-A	2 - 20 Amp split-core AC current sensor					√				√
CTV-B	5 - 50 Amp split-core AC current sensor					√				√
CTV-C	10 - 100 Amp split-core AC current sensor					√				√
CTV-D	20 - 200 Amp split-core AC current sensor					√				√
CTV-E	60 - 600 Amp split-core AC current sensor					√				√
T-MAG-0400-05	0.5 - 5 AMP split-core AC transformer	√	√		√					
T-MAG-0400-20	2 - 20 AMP split-core AC transformer	√	√		√					
T-MAG-0400-50	5 - 50 AMP split-core AC transformer	√	√		√					
T-MAG-0400-75	7.5 - 75 AMP split-core AC transformer	√	√		√					
T-ACT-0750-020	0.2 - 20 Amp split-core AC transformer	√	√		√					
T-ACT-0750-050	0.5 - 50 Amp split-core AC transformer	√	√		√					
T-ACT-0750-100	1 - 100 Amp split-core AC transformer	√	√		√					
T-ACT-0750-250	2.5 - 250 Amp split-core AC transformer	√	√		√					
T-MAG-SCT-100	10 - 100 Amp split-core AC transformer	√	√		√					
T-MAG-SCT-200	20 - 200 Amp split-core AC transformer	√	√		√					
T-MAG-SCT-600	60 - 600 Amp split-core AC transformer	√	√		√					
T-VER-971BP-200	Split-Core Bi-Polar DC transducer	√	√		√	√				√
T-VER-H970-200	Split-Core 200A DC transducer	√	√		√	√				√

AC & DC Voltage

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
T-MAG-SPT-150	150 Volt AC potential transformer	√	√		√					
T-MAG-SPT-300	300 Volt AC potential transformer	√	√		√					
T-MAG-SPT-600	600 Volt AC potential transformer	√	√		√					
T-CON-ACT-150	ConLab 0-150 Volt AC transmitter					√				√
T-CON-ACT-300	ConLab 0-300 Volt AC transmitter					√				√
S-CIA-CM14	12-bit 4-20mA input adapter	√	√	√[1]	√					
S-VIA-CM14	12-bit voltage input adapter	√	√	√[1]	√					
CABLE-ADAP5	Voltage input cable 0-5 VDC					√				√
CABLE-ADAP10	Voltage input cable 0-10 VDC					√				√
CABLE-ADAP24	Voltage input cable 0-24 VDC									√
CABLE-4-20MA	Measures currents from 0 to 20.1 mA									√
CABLE-2.5-STEREO	Voltage input cable 0-2.5 VDC					√		√		√
S-FS-CVIA	FlexSmart analog module (2 channels)					√				

[1] These require Smart Sensor consolidator box, part# S-ADAPT-6

External Sensors by Measurement

Energy/Power (continued)

Amp Hour, Amps, Power Factor, Volt-Amp Reactive, Volt-Amp Reactive Hour, Volt Amps, Volts, Watt Hours, Watts		RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
Part number	Type									
T-VER-E50B2	Power & Energy meter	√	√	√	√					√

Pulse		RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
Part number	Type									
S-UCC-M001	Electronic switch pulse input adapter - 1m	√	√	√	√					
S-UCC-M006	Electronic switch pulse input adapter - 6m	√	√	√	√					
S-UCD-M001	Contact closure pulse input adapter - 1m	√	√	√	√					
S-UCD-M006	Contact closure pulse input adapter - 6m	√	√	√	√					
CABLE-2.5-STEREO	Voltage input cable 0-2.5 VDC								√	♦

Time-of-Use

Motor On/Off		RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
Part number	Type									
CSV-A8[1]	AC current switch							√		√

Water

Water Temperature		RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
Part number	Type									
S-TMB-M002[1]	12-bit Temp smart (2m cable)	√	√	√	♦		♦			
S-TMB-M006	12-bit Temp smart (6m cable)	√	√	√	♦		♦			
S-TMB-M017	12-bit Temp smart (17m cable)	√	√	√	♦		♦			
TMC1-HD	Air/Water/Soil Temp (1' cable)					√				♦
TMC6-HD	Air/Water/Soil Temp (6' cable)					√				♦
TMC20-HD	Air/Water/Soil Temp (20' cable)					√				♦
TMC50-HD	Air/Water/Soil Temp (50' cable)					√				♦

Weather/Field

Temperature		RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
Part number	Type									
S-THB-M002[1]	12-bit Temp/RH smart (2m cable)	√	√	√	♦		♦			
S-THB-M008[1]	12-bit Temp/RH smart (8m cable)	√	√	√	♦		♦			
S-TMB-M002	12-bit Temp smart (2m cable)	√	√	√	♦		♦			
S-TMB-M006	12-bit Temp smart (6m cable)	√	√	√	♦		♦			
S-TMB-M017	12-bit Temp smart (17m cable)	√	√	√	♦		♦			
TC6-J	Type J beaded thermocouple								√*	♦
TC6-K	Type K beaded thermocouple								√*	♦
TC6-T	Type T beaded thermocouple								√*	♦
TCP6-K12	Type K probe thermocouple								√*	♦
TMC1-HD	Air/Water/Soil Temp (1' cable)					√				♦
TMC6-HD	Air/Water/Soil Temp (6' cable)					√				♦
TMC20-HD	Air/Water/Soil Temp (20' cable)					√				♦
TMC50-HD	Air/Water/Soil Temp (50' cable)					√				♦
TMC6-HC	Stainless Steel Temp probe (6' cable)					√				♦
TMC6-HE	Pipe Temp (6' cable)					√				♦

♦ This logger is intended for indoor environments, but sensors are compatible.
* Requires UX100-014M Thermocouple logger.
[1] Note: Temp & RH NIST certification services available for this product.

External Sensors by Measurement

Weather/Field (continued)

PAR

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-LIA-M003	Photosynthetic light (PAR)	√	√	√	♦					

Solar Radiation

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-LIB-M003	Solar radiation	√	√	√	♦					

Barometric Pressure

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-BPB-CM50	Barometric pressure	√	√	√	♦					
S-BPA-CM10	HWS barometric pressure				♦					

Wind Speed & Direction

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-WDA-M003	Wind direction (3m cable)	√	√	√	♦					
S-WSB-M003	Wind speed Smart Sensor (3m cable)	√	√	√	♦					
S-WSET-A	Wind Smart Sensor set	√	√	√	♦					
S-WCB-M003	R.M. Young wind monitor-AQ adapter	√	√	√	♦					
S-WCC-M003	R.M. Young marine wind adapter	√	√	√	♦					
S-WCE-M003	R.M. Young wind monitor adapter	√	√	√	♦					
S-WCF-M003	Davis Wind Speed/Direction Smart Sensor	√	√	√	♦					

Rainfall

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-RGA-M002	.01" Rain gauge Smart Sensor (2m cable)	√	√	√	♦					
S-RGB-M002	.2mm Rain gauge Smart Sensor (2m cable)	√	√	√	♦					
S-RGC-M002	Davis 0.01" Rain Gauge Smart Sensor	√	√	√	♦					
S-RGF-M002	Davis 0.2 mm Rain Gauge Smart Sensor	√	√	√	♦					

Soil Moisture

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-SMC-M005	EC-5 soil moisture Smart Sensor	√	√	√	♦					
S-SMD-M005	10HS soil moisture Smart Sensor	√	√	√	♦					

Leaf Wetness

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-LWA-M003	Leaf wetness Smart Sensor	√	√	√	♦					

Relative Humidity

Part number	Type	RX3000	U30	H21	H22	U12	U14	UX90	UX100	UX120
S-THB-M002	12-bit Temp/RH smart (2m cable)	√	√	√	√		√			
S-THB-M008	12-bit Temp/RH smart (8m cable)	√	√	√	√		√			

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

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Accessories

Shuttles/Base Stations

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
U-DT-1	U-Shuttle data transporter			√	√											√	√	√¹			
U-DT-2	U30 shuttle data transporter			√										√							
U-DTW-1	Waterproof shuttle			√	√			√	√	√	√	√			√						
BASE-U-1	Pendant base station			√	√																
BASE-U-4	Optic USB base station			√	√			√	√	√	√	√			√						

Computer Interface Cables

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
CABLE-PC-3.5	Serial interface cable for H-series HOBOs		√																		
CABLE-USBMB	USB cable for HOBO U-Series	√				√	√										√	√	√	√	
ADAPT-SER-USB	USB to serial interface cable for H-series HOBOs		√																		

Water Logger Mounting

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
WELL-CAP-01	2” (5cm) Well Cap							√		√	√									√	
CABLE-DR-5.0	5m Direct Read Cable																			√	
CABLE-DR-010	10m Direct Read Cable																			√	
CABLE-DR-015	15m Direct Read Cable																			√	
CABLE-DR-030	30m Direct Read Cable																			√	
CABLE-DR-060	60m Direct Read Cable																			√	
CABLE-DR-xxx²	xxxm Custom Length Direct Read Cable³																			√	
SUBC2-xx	For HOBO U10 and U12 underwater use					√															
HOUSING-U2X	Protective Housing							√		√											

Replacement Batteries

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
HRB-TEMP-1	Lithium batteries (box of 5)				√	√										√	√				
HRB-U30-S100	10 Ahr battery w/cable												√	√							
HP-B	Replacement battery for HOBO U23									√											
HWSB-LI	Lithium battery	√				√	√										√	√			
HRB-2/3AA	Replacement Lithium battery 2/3 AA																				√

For factory battery replacement and calibration services, please call 1-508-759-9500 or 1-800-LOGGERS

Replacement Couplers

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
COUPLER-UA	Coupler (for use with BASE-U-4)¹				√																
COUPLER2-A	Coupler (for use with BASE-U-4)				√																
COUPLER2-B	Coupler (for use with BASE-U-4)							√													
COUPLER2-C	Coupler (for use with BASE-U-4)								√		√	√									
COUPLER2-D	Coupler (for use with BASE-U-4)														√						
COUPLER2-E	Coupler (for use with BASE-U-4)									√											

Subminiature Connectors

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
SMC-J	For type J wire																√	√			
SMC-K	For type K wire																√	√			
SMC-T	For type T wire																√	√			

¹ Not compatible with UX120-006M
² xxx is cable length in meters, ranging from 0.2m to 500m; cable length increments are larger for longer lengths

Accessories

Additional Accessories

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
T-VER-AH02	Single phase fuse kit (for T-VER-E50B2 only)																				
A-WNB-LEADSET	Voltage input lead set with alligator clips	√	√										√	√		√		√			
BOOT-BLK	Protective boot, black (cap included)								√												
BOOT-WHT	Protective boot, white (cap included)								√												
85-CAPLUG-H20-B	Replacement cap for protective boot, black								√												
85-CAPLUG-H20-W	Replacement cap for protective boot, white								√												
BOOT-TIDBIT-BK	Protective boot, black (5 ea)														√						
BOOT-TIDBIT-WH	Protective boot, white (5 ea)														√						
U20-CASE-1	Carrying case							√													
CABLE-1-50	Teflon coated SS cable (50 ft)							√		√	√										
CABLE-1-300	Teflon coated SS cable (300 ft)							√		√	√										
CABLE-1-CRIMP	Crimp sleeve (12 ea) for above cables							√		√	√										
SOLAR-3W	3 watt, 6 volt solar panel												√	√							
SOLAR-6W	6 watt, 6 volt solar panel												√	√							
AC-U30	AC power adapter												√	√							
RS1	Solar radiation shield				√			√	√						√						√
M-RSA	Solar radiation shield (assembled)				√			√	√						√						√
RS3-B	Solar radiation shield									√											√
MX2300-RS-BRACKET	MX2300s bracket for RS1 or M-RSA																				√
U23-RS-CLAMPKIT	Mounting clamp (2 required)									√											
UX90-LIGHT-PIPE-1	1-foot fiber optic attachment for HOBO UX90															√					
CASE-PELICAN-1510	Pelican case- durable, watertight, FAA carry-on	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
CASE-4X-2	Protective, weather-resistant case															√		√			

Additional Replacement Parts

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
MX2001-TOP	HOBO MX Water level logger Top End																			√	
MX2001-04-S	MX Water Level Sensor End, 4m(13')																			√	
MX2001-01-S	MX Water Level Sensor End, 9m(30')																			√	
MX2001-02-S	MX Water Level Sensor End, 30m(100')																			√	
MX2001-03-S	MX Water Level Sensor End, 76m(250')																			√	
MX2001-04-Ti-S	MX Water Level Sensor End, 4m(13')																			√	
MX2001-01-Ti-S	MX Water Level Sensor End, 9m(30')																			√	
U12-015-ORING-E	O-ring kit (EPDM)					√															
U12-015-ORING-V	O-ring kit (Viton)					√															
H8X4-BK	Replacement parts kit					√															
HUM-RHPCB-1	RH sensor									√											
HUM-RHPCB-2	RH sensor (includes S-THB)													√			√				
HUM-RHPCB-3	RH sensor (for serial #s < 9847173)						√														
HUM-RHPCB-3A	RH sensor (for serial #s > 9847173)							√									√				
DESICCANT1	Desiccant (25 ea) for UA & U23				√					√											
DESICCANT2	Desiccant (25 ea) submersible cases																				√
DESICCANT5	Desiccant (25 ea) for UA-003-64				√																
DESIC-PACK	Desiccant (2 ea) for U12-008					√															
85-DESICCANT6	Desiccant pack for HOBO Micro Station	√																			
UA-PARTSKIT	Parts kit for UA loggers				√																
HUM-RHCAP2	RH cap kit (5 ea) (includes S-THB))									√											
CABLE-U23-002	Sensor cable									√											
U26-RDOB-1	Replacement DO Sensor Cap											√									

NIST Certification

Part number	Type	H21	H22	RG3	UA	U12	U14	U20	U22	U23	U24	U26	RX3000	U30	UTBI	UX90	UX100	UX120	MX1102	MX2001	MX2300
Temp only																					
NIST-SETUP	NIST traceable setup/logger				√	√	√		√	√						√		√	√			√
NIST-TEMP-POINT	NIST per-point/channel				√	√	√		√	√						√		√	√			√
Temp & RH																					
RH-NIST-ONEPOINT	One degree Temp & RH certification				√	√			√								√				√	
RH-NIST-THREEPOINT	Three degree Temp & RH certification					√	√		√								√				√	

Data Shuttles/Base Stations

HOBO U-Shuttle
U-DT-1[1]

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

Key Advantages:

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

HOBO U30 Shuttle
U-DT-2[1]

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

Key Advantages:

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

HOBO Waterproof Shuttle
U-DTW-1[1]

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

Key Advantages:

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

HOBO Base Station
BASE-U-4[1]

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

Key Advantages:

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

[1] CE Compliant
[2] Not compatible with UX120-006M

Data Shuttles/Base Stations

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

Key Advantages:

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

Pendant Base Station
BASE-U-1[1]

HOBO Shuttle and Base Station Compatibility

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

*Couplers are included
Products with a "√B" require a Base Station for use with the U-Shuttle.
[1] CE Compliant

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. Our HOBO data loggers are known for providing the most reliable, accurate energy and environmental data under some of the world's toughest environmental conditions. And our InTemp monitoring solutions meet CDC requirements for calibrated temperature monitoring with devices backed by a Certificate of Calibration Testing.

Simple & Cost-Effective

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

Applications Expertise

With more than three decades of experience in solving data logging applications, Onset has developed an applications expertise that is second to none. Whether it's air quality, agricultural research, preservation management, water quality, or temperature-controlled storage monitoring, chances are we have seen your application before and know what it takes to solve it.

World Class Support

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

"The time reduction for downloading the MX2001 logger in our wells is significant, since most are 25 to 500 feet deep. The Bluetooth capability eliminates the need to remove the logger from the well and threat of tangled cable."

David Light,
West Virginia University

About Onset

Onset is a leading supplier of data loggers and monitoring solutions used to measure, record, and manage data for improving the environment and preserving the quality of temperature-sensitive goods.

Based on Cape Cod, Massachusetts, Onset has been designing and manufacturing its products on site since the company's founding in 1981.

Onset headquarters, Cape Cod, MA

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

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