



# HOBO U23-002A Pro V2 Weatherproof Temp & RH Data Logger (External Sensor)

## Product Images



## Short Description

The HOBO U23-002A Pro v2 External Temperature/Relative Humidity Data Logger is a weatherproof data logger with an external Temperature and Relative Humidity sensor on a 6-foot cable for fast sensor response and deployment in tight spaces. The Relative Humidity sensor features fast response and superior durability in humid environments, and is user-replaceable.

## Description

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## Key Features

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



**IMPORTANT:** HOBO U23 data loggers require either the [BASE-U-4](#) or the [U-DTW-1](#) Data Shuttle to offload data and launch loggers.

HOBO loggers require [HOBOWare software](#) (free download).

# Additional Information

Country of Manufacture	United States	
Explanation	<b>Temperature Sensor</b>	
	<b>Operation Range</b>	U23-001A internal sensor: -40 to 70°C (-40 to 158°F) U23-002A external temperature sensor: -40 to 70°C (-40 to 158°F) U23-003 and U23-004 external sensors: -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
	<b>Accuracy</b>	U23-001A and U23-002A: ±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) U23-003 and U23-004: ±0.21°C from 0° to 50°C (±0.38°F from 32° to 122°F); see Plot A
	<b>Resolution</b>	U23-001A and U23-002A: 0.04°C (0.072°F) U23-003 and U23-004: 0.02°C at 25°C (0.04°F at 77°F); see Plot A
	<b>Response Time (Typical to 90%)</b>	U23-001A internal sensor: 10 minutes in air moving 1 m/sec U23-002A external temperature sensor: 3 minutes, 45 seconds in air moving 1 m/sec U23-003 and U23-004 external sensors: 3 minutes in air moving 1 m/sec; 30 seconds in stirred water
	<b>Drift</b>	U23-001A and U23-002A: <0.01°C (0.018°F) per year U23-003 and U23-004: <0.1°C (0.18°F) per year
	<b>Relative Humidity Sensor (U23-001A, U23-002A only)</b>	
	<b>Operation Range</b>	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%
	<b>Accuracy</b>	±2.5% from 10% to 90% RH typical to a maximum of ±3.5% including hysteresis at 25°C (77°F); below 10% and above 90% ±5% typical
	<b>Resolution</b>	0.05%
	<b>Response Time (Typical to 90%)</b>	U23-001A: 40 minutes in air moving 1 m/sec with protective cap U23-002A: 15 seconds in air moving 1 m/sec
	<b>Drift</b>	<1% per year typical
	<b>Logger</b>	
	<b>Operation Range</b>	-40° to 70°C (-40° to 158°F)
	<b>Real-time Clock</b>	±1 minute per month 0° to 50°C (32° to 122°F)
	<b>Battery</b>	1/2 AA, 3.6 Volt lithium, user-replaceable (HP-B)
	<b>Battery Life (Typical Use)</b>	3 years with 1 minute or greater logging interval
	<b>Memory (Non-Volatile)</b>	64K bytes memory (approx. 21,000 temperature and RH measurements)
	<b>Materials</b>	All models: ASA styrene polymer housing and mounting clamp; polypropylene protective cap; Buna-N o-ring(s); U23-001A, U23-002A only: ASA styrene polymer RH sensor cap; modified hydrophobic polyethersulfone membrane
	<b>Cables</b>	U23-001A: No cables U23-002A: One 184 cm (6 ft) PVC cable; sensor diameter 1 cm (0.38 in.) U23-003: Two 184 cm (6 ft) PVC cables; sensor diameter 0.5 cm (0.20 in.) U23-004: One 184 cm (6 ft) PVC cable; sensor diameter 0.5 cm (0.20 in.)
	<b>Environmental Rating</b>	Electronics housing is NEMA 6P equivalent (tolerant of brief submergence); Units with RH sensors are NEMA 4 equivalent (splash-resistant)
	<b>Launch Modes</b>	Immediate start; delayed start
	<b>Logging Interval</b>	Fixed-rate or multiple logging intervals, with up to 8 user-defined logging intervals and durations; logging intervals from 1 second to 18 hours
<b>Offload Modes</b>	Offload while logging; stop and offload	
<b>Battery Indication</b>	Battery voltage can be viewed in status screen and optionally logged in datafile. Low battery indication in datafile.	
<b>Weight</b>	U23-001A: 57 g (1.5 oz); U23-002A: 118 g (3.1 oz); U23-003: 138 g (3.7 oz); U23-004: 102 g (2.7 oz)	
<b>Dimensions</b>	Housing measures 10.2 × 3.8 cm (4.0 × 1.5 in.)	
<b>NIST Certificate</b>	Temperature certificate available for additional charge	
	The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).	
Brand	Onset HOBO	
Onset Product Series	U23	
Typical applications	Environmental (Outdoor), Field Research	
Measurements	Dew Point, Humidity, Temperature	

## Additional Options

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<b>Connectivity Options</b>	HOBO Universal Optic USB Base Station Base-U-4 (includes Couplers)
	Waterproof Optic Data Shuttle U-DTW-1 (requires HOBOWare Pro)
<b>Radiation Shield Option:</b>	RS3 Radiation Shield
<b>HOBOWare Pro Software Options</b>	HOBOWare Pro on USB Drive (USB cable included)
	HOBOWare Pro on CD (USB Cable Included)
	HOBOWare Pro - Download Only (USB cable NOT included)
<b>USB Cable (included with HOBOWare Pro on USB Drive &amp; CD)</b>	HOBO U-Series to PC USB Cable
<b>Temperature &amp; Humidity Calibration Certificate</b>	Temperature & Humidity Calibration @ 20°C and 50RH
	Temperature & Humidity Calibration (please specify measurement points required)