



## HOBO<sup>®</sup> U23-003 Data Logger

### 2x External Temperature Data Logger

The HOBO Pro v2 2x External Temperature Data Logger is a weatherproof data logger with two external soil/water temperature probes on 6-foot cables for fast sensor response and deployment in tight spaces.

#### Supported Measurements:

Temperature



#### Key Advantages:

- Weatherproof housing for use in outdoor or condensing environments
- High accuracy
- Small-diameter external sensor versions for measurements in tight spaces
- Optic USB interface for fast and reliable download
- Compatible with HOBOWare and HOBOWare Pro software for logger setup, graphing and analysis

## HOBO U23-003 Data Logger Specifications

### Temperature Sensor

**Operation range internal sensors:** -40° to 70°C (-40° to 158°F)

**U23-002 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

**Accuracy:** ±0.21°C from 0° to 50°C (±0.38°F from 32° to 122°F); see Plot A

**Resolution:** 0.02°C at 25°C (0.04°F at 77°F); see Plot A

**Response Time (typical to 90%)**

**U23-001 internal sensor:** 40 minutes in air moving 1 m/sec

**U23-002 external temperature sensor:** 5 minutes 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

**Stability (drift):** < 0.1°C (0.18°F) per year

### Relative Humidity Sensor (U23-001, U23-002 only)

**Operation range:** 0-100% 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% RH (typical), to a maximum of ±3.5% including hysteresis. See Plot B for full range.

**Resolution:** 0.03%

**Response Time (typical to 90%)**

**U23-001:** 40 minute in air moving 1 m/sec with protective cap

**U23-002:** 5 minutes in air moving 1 m/sec with protective cap

**Stability (drift):** < 1% per year typical

### Logger

**Operation range:** -40° to 70°C (-40° to 158°F)

**Real-time clock:** ± 1 minute per month 0° to 50°C (32° to 122°F)

**Battery:** 1/2 AA, 3.6 Volt lithium, user-replaceable (part # HP-B)

**Battery life (typical use):** 3 years with 1 minute or greater logging interval

**Memory (non-volatile):** 64K bytes memory (approx. 21,000 temperature and RH measurements)

### Materials

**All models:** ASA styrene polymer housing and mounting clamp; polypropylene protective cap; Buna-N o-ring(s)

**U23-001, U23-002 only:** ASA styrene polymer RH sensor cap; modified hydrophobic polyethersulfone membrane

### Cables

**U23-001:** No cables

**U23-002:** 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.)

**Environmental rating:** Electronics housing is NEMA 6P equivalent (tolerant of brief submergence); Units with RH sensors are NEMA 4 equivalent (splash-resistant)

**Launch modes:** Immediate start; delayed start

**Logging interval:** Fixed-rate or multiple logging intervals, with up to 8 user-defined logging intervals and durations; logging intervals from 1 second to 18 hours (refer to HOBOWare software manual)

**Offload modes:** Offload while logging; stop and offload

**Battery indication:** Battery voltage can be viewed in status screen and optionally logged in datafile. Low battery indication in datafile.

### Weight

**U23-001:** 57 g (1.5 oz)

**U23-002:** 118 g (3.1 oz)

**U23-003:** 138 g (3.7 oz)

**U23-004:** 102 g (2.7 oz)

**Dimensions:** Housing measures 10.2 x 3.8 cm (4.0 x 1.5 in.)

**NIST certificate:** Temperature certificate available for additional charge

The CE Marking identifies this product as complying with the relevant directives in the European Union (EU).

## Contact Us

Sales (8am to 5pm ET, Monday through Friday)

- ▶ Email [sales@onsetcomp.com](mailto:sales@onsetcomp.com)
- ▶ Call 1-508-759-9500
- ▶ In U.S. toll free 1-800-564-4377
- ▶ Fax 1-508-759-9100

Technical Support (8am to 8pm ET, Monday through Friday)

- ▶ Contact Product Support [www.onsetcomp.com/support/contact](http://www.onsetcomp.com/support/contact)
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