



HOBO® U23-002 Data Logger

U23 Pro v2 External Temperature/Relative Humidity Data Logger

The HOBO 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.



Supported Measurements:

Relative Humidity and Temperature

Key Advantages:

- 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

HOBO U23-002 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: $\pm 0.21^{\circ}\text{C}$ from 0° to 50°C ($\pm 0.38^{\circ}\text{F}$ from 32° to 122°F)

Resolution: 0.02°C at 25°C (0.04°F at 77°F)

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: $\pm 2.5\%$ from 10% to 90% RH (typical), to a maximum of $\pm 3.5\%$ including hysteresis at 25°C (77°F); below 10% and above 90% $\pm 5\%$ typical

Resolution: 0.05%

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
- ▶ 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
- ▶ Call 1-508-759-9500
- ▶ In U.S. toll free 1-877-564-4377

Onset Computer Corporation
470 MacArthur Boulevard
Bourne, MA 02532