

- 12-bit resolution provides high accuracy
- Large memory for long-term deployments or fast sampling
- Five models to choose from, with flexible measurement options
- Programmable as well as push-button start



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

### Temperature

Measurement range: -20° to 70°C (-4° to 158°F)  
 Accuracy: ±0.4°@ 25°C (±0.63°@ 77°F)  
 Resolution (12-bit): 0.03°@ 25°C (0.05°@ 77°F)  
 Response time: 6 minutes (to 90% in airflow of 1 m/s)

***NIST-traceable temperature accuracy certificate available.***

### Relative Humidity (RH)

Measurement range: 5% to 95% RH  
 Accuracy: ±2.5% RH from 10% to 90% over range  
 Resolution (12-bit): 0.03% RH  
 Response time: 1 minute (to 90% in airflow of 1 m/s)






### Light Intensity

Range: Designed for general purpose indoor measurement of relative light levels  
 1 to 3000 footcandles (lumens/ft<sup>2</sup>) typical  
 0-32,300 lumens/m<sup>2</sup> [0-3,000 footcandles (lumens/ft<sup>2</sup>)]

### External Input

External sensors for temperature, AC current, AC voltage, CO<sub>2</sub>, 4-20 mA, 0-2.5 VDC (see sensors pages 8 and 9)  
 Input range: 0 to 2.5 VDC  
 Accuracy: ±2 mV, ±2.5% of absolute reading  
 Resolution (12-bit): 0.6 mV  
 Output power: 2.5 VDC at 2 mA, active only during measurements

## HOBO U12 Model Comparison & Ordering Information

		Temperature HOBO U12	4 External HOBO U12	Temp/RH HOBO U12	Temp/RH/Light/ Ext HOBO U12	Temp/RH/2 Ext HOBO U12
Product Number		 <b>U12-001</b>	 <b>U12-006</b>	 <b>U12-011</b>	 <b>U12-012</b>	 <b>U12-013</b>
Number of Channels		1	4	2	4	4
Internal Sensors	Temperature	yes	--	yes	yes	yes
	Relative Humidity	--	--	yes	yes	yes
	Light Intensity	--	--	--	yes	--
External Sensors		--	yes	--	yes	yes
Size	cm	5.8 x 7.4 x 2.2	5.8 x 7.4 x 2.2	5.8 x 7.4 x 2.2	5.8 x 7.4 x 2.2	5.8 x 7.4 x 2.2
	inches	2.3 x 2.9 x 0.9	2.3 x 2.9 x 0.9	2.3 x 2.9 x 0.9	2.3 x 2.9 x 0.9	2.3 x 2.9 x 0.9
Weight	grams	46	46	46	46	46
	ounces	1.6	1.6	1.6	1.6	1.6

*Complete system requires logger, software and communications.*

## Software and Communications

### Software\*

HOBOware Pro Software (Windows®)	BHW-PC
HOBOware Pro Software (Mac®)	BHW-MAC
HOBOware Lite Software (Windows/Mac)	BHW-LITE
<i>HOBOware includes USB interface cable</i>	

### Optional Communications

HOBO U-Shuttle	U-DT-1
USB to Ethernet Server	SERVER-US-4

- Sensors on this page can be plugged directly into the external input jacks of HOBO U12 Family loggers to expand the number of measurement options and applications.
- Accuracy specifications of external sensors reflect the combined performance of the logger and sensor.



TMCx-HD  
Sensor diameter: 0.5 cm  
(0.2 in) diameter  
Cable lengths: 0.3,  
1.8, 6.1, 15.2 m  
(1, 6, 20, 50 ft)

### Air/Water/Soil Temperature Sensors

Range: -40° to 100°C (-40° to 212°F) in air;  
-40° to 50°C (-40° to 122°F) in water or soil;  
Accuracy: ±0.25°@ 25°C (±0.45°@ 77°F)  
Resolution: 0.03°@ 25°C (0.05°@ 77°F)  
Response time: 3 minutes (to 90% in airflow 1 m/s); 1 minute in water  
*Note: Sensor tip and cable immersion in fresh water up to 50°C (122°F) for one year; radiation shield (RS3) recommended for use in sunlight*



TMC6-HC  
0.3 cm  
diameter x 10.2 cm  
(0.12 in x 4 in)  
cable length: 1.8 m (6 ft)

### Stainless Steel Temperature Probe

Range: -40° to 100°C (-40° to 212°F) in air or water (tip only)  
Accuracy: ±0.25°@ 25°C (±0.45°@ 77°F)  
Resolution: 0.03°@ 25°C (0.05°@ 77°F)  
Response time: 3 minutes (to 90% in air moving 1 m/s); 15 seconds in stirred water

**NIST-traceable temperature accuracy certificate available.**



CABLE-4-20MA  
45.7 cm (18 in) cable  
with 8.9 cm (3.5 in)  
tinned braided wire leads

### 4-20mA Cable

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



CABLE-2.5-STEREO  
1.8 m (6 ft) cable with 1.27 cm  
(0.5 in) tinned braided wire leads

### Voltage Input Cable

1.8 m (6 ft) cable with 1.27 cm (0.5 in) tinned braided wire lead  
*For voltage input specifications, refer to the external input specifications of the model you will be using.*



### CTV Sensors

CTV-x  
Cable length: 1.8 m (6 ft)

### AC Current

Ranges available (AC Amps): 0-20, 0-50, 0-100, 0-200, 0-600  
Accuracy: ± 4.5% of full scale  
Response time (from 10% to 90% of amplitude): CTV-A, approximately 440 milliseconds  
CTV-B, approximately 200 milliseconds  
CTV-C, approximately 100 milliseconds  
CTV-D, approximately 450 milliseconds  
CTV-E, approximately 490 milliseconds  
*Input current: AC current, sine wave, single phase 50 Hz or 60 Hz, load power factor 0.5 to 1.0 lead or lag*  
Voltage rating: 600 VAC UL listed  
Operating range: 0° to 60°C (32° to 140°F) CTV-A, -B, -C  
0° to 40°C (32° to 104°F) CTV-D, -E  
Construction and operating environment: Molded plastic housing for indoor use per UL508. All units have opening leg that snaps into place. The leg on CTV-D and E-units is removable.

# HOBO U12 Loggers External Sensors

onset



## AC Voltage

T-CON-ACT-xxx  
11.4 x 7.3 x 3.25 cm  
(4.49 x 2.87 x 1.28 in)  
300 g (10.6 oz)

Self-powered transmitter for monitoring sine wave, single-phase 60Hz AC voltage. Requires 4-20mA Input Cable for use with HOBO U12 loggers (CABLE-4-20mA)

Two ranges: 90 to 150 or 180 to 300 volts RMS with 0.1% of span



## Carbon Dioxide

TEL-7001  
15.9 x 7.6 x 3.8 cm  
(6.25 x 3 x 1.5 in)  
304 g (10.7 oz)

Monitors and displays CO<sub>2</sub> and Temperature (CO<sub>2</sub> only recorded in U12) for Indoor Air Quality studies. Requires CO<sub>2</sub> cable for use with HOBO U12 loggers (CABLE-CO2 - cable length 8")

Measures 0 to 10,000 ppm CO<sub>2</sub> with 50 ppm or ±5% of reading outputs 0 to 2,500 ppm CO<sub>2</sub> to HOBO U12 loggers.

## External Sensors & Cables Ordering Information

### Air/Water/Soil Temperature Sensors

sensor with 0.3m (1ft) cable  
sensor with 1.8m (6ft) cable  
sensor with 6.1m (20ft) cable  
sensor with 15.2m (50ft) cable

TMC1-HD  
TMC6-HD  
TMC20-HD  
TMC50-HD

Stainless Steel Temp Probe  
4-20mA cable  
Voltage input cable

TMC6-HC  
CABLE-4-20mA  
CABLE-2.5-STEREO

### Split-core AC Current Sensors

0-20 Amps AC  
0-50 Amps AC  
0-100 Amps AC  
0-200 Amps AC  
0-600 Amps AC

CTV-A  
CTV-B  
CTV-C  
CTV-D  
CTV-E

Telaire CO<sub>2</sub>/Temp Monitor  
CO<sub>2</sub> to logger cable

TEL-7001  
CABLE-CO2

### ConLab AC Voltage Transmitters

0 to 150 Volts AC  
0 to 300 Volts AC

T-CON-ACT-150  
T-CON-ACT-300

