

Our new HOBOnode Wireless sensors combine field-proven HOBOnode® reliability with the convenience of wireless.

HOBOnode sensors monitor temperature and soil moisture conditions and wirelessly transmit the data back to your computer. They enable you to view current conditions, receive alarm notifications, and log data on your PC without having to run cables through the field.

HOBOnode sensors are ideal for a broad range of applications, including agricultural research, crop and irrigation management, environmental studies, and greenhouse management.



## Key Advantages

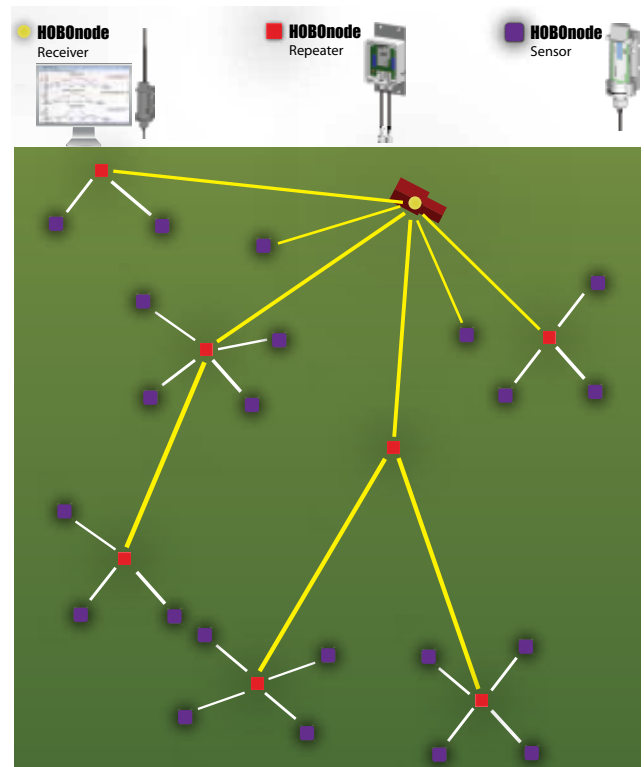
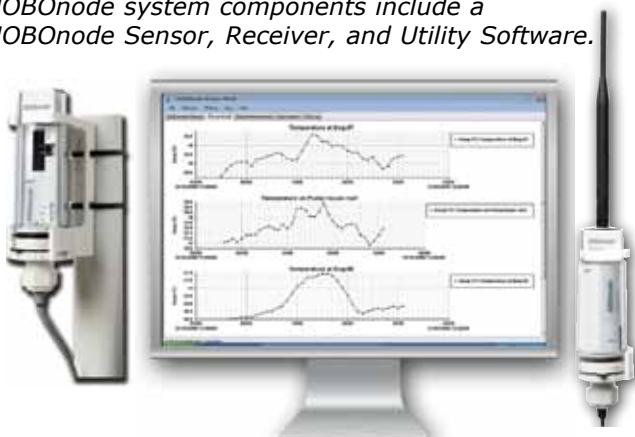
- Sensors transmit current field conditions to your PC
- Accompanying software provides alarm notifications directly to your cell phone or PC
- Up to 6-mile transmission range (with HOBOnode Repeaters)
- Sensors can be easily added to a HOBOnode network
- Ideal for agricultural research, crop management, environmental studies, and more

For technical specifications and ordering information, please see pages 6 and 7.

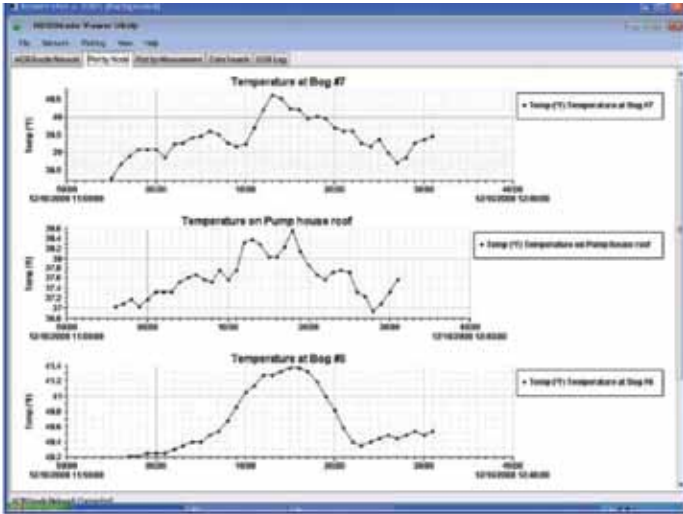
## Fast, Easy Deployment

HOBOnode sensors can be deployed in a matter of minutes. The wireless sensors compact, integrated design makes it easy to deploy them in any type of field location. Sensors can be easily and quickly added to a HOBOnode network when additional data points are needed.

*HOBOnode system components include a HOBOnode Sensor, Receiver, and Utility Software.*



HOBOnode sensors can be used in a variety of network configurations, with and without the use of HOBOnode Repeaters as shown in the above topology.



## Real-time Monitoring

The HOBOnode Viewer Utility, which provides sensor set up, readout, displays real-time graphs of temperature and soil moisture conditions. It can also be configured to provide alarm notifications via cell phone or email when field conditions exceed set thresholds. Data can be exported for use in HOBOWare® Pro, spreadsheets, and other programs.



*HOBOnode sensors, such as the Soil Moisture Sensor shown above, provide research-grade performance. Their compact design makes for easy installation in the field.*

## HOBOnode Network

In many monitoring applications, it's important to have a complete network of sensors that can collect data from various locations throughout a site. HOBOnode sensors make it easy and affordable to set up a network, and add sensors when additional data points are needed. Up to 50 HOBOnodes sensors can be used in a network.



## HOBOnode Technical Specifications

	<b>Temperature Sensor</b>  <b>W-TMB</b>	<b>Soil Moisture Sensor</b>  <b>W-SMC</b>
<b>Product Number</b>		
<b>Measurement Range</b>	-40° to 100° C (-40° to 212° F)	0 to 100% (0 to 1.0) volumetric water content (m <sup>3</sup> /m <sup>3</sup> )
<b>Accuracy</b>	0.22° from 0° to 50° C (0.4° F from 32° to 122° F)	3.1% (0.031) m <sup>3</sup> /m <sup>3</sup> in most soils, up to 8 ds/m
<b>Resolution</b>	0.025° at 25° C (0.045° F at 77° F)	0.07% (0.0007) m <sup>3</sup> /m <sup>3</sup>
<b>Response Time</b>	3 minutes in air moving 1m/s 30 seconds in water	—
<b>Sample Rate</b>	1 reading per minute	
<b>Battery Life</b>	1 year typical without solar charging; 3 years typical with solar charging	
<b>Size</b>	16.5 cm x 5 cm; 3.7 m cable (6.5 in x 2 in; 12 ft cable to sensor)	16.5 cm x 5 cm; 5 m cable (6.5 in x 2 in; 16 ft cable to sensor)
<b>Transmission Range</b>	HOBOnode sensor to Receiver or Repeater: 420 m (1400 ft) with clear line-of-sight (LOS); 300 m (1000 ft) typical Repeater to Receiver or Repeater: 2.4 km (1.5 miles) with clear LOS; 2 km (1.25 miles) typical	
<b>Wireless Standard</b>	Based on IEEE 802.15.4, 2.4 GHz ISM band (license free worldwide)	
<b>Environmental Rating</b>	HOBOnodes and Receiver: NEMA 6P, IP68 Temperature sensor probe is rated for 1-year immersion in fresh water ≤ 50° C (122° F) Repeater: NEMA 4X	
<b>HOBOnode Sensors and Repeaters Standard Operating Range</b>	-20° to 50° C (-4° to 122° F)	
<b>HOBOnode Sensors and Repeaters Operating Range with Optional Lithium Batteries</b>	-40° to 50° C (-40° to 122° F)	
<b>HOBOnode Receiver Operating Range</b>	-40° to 50° C (-40° to 122° F)	
<b>HOBOnode Receiver Communication to PC</b>	1.8 m (6 ft) USB cable (can be extended with optional extension cable.)	
<b>Maximum number of HOBOnode Sensors &amp; Repeaters</b>	50	
<b>Maximum number of Repeaters in a series</b>	4	
<b>Repeater Battery Life</b>	1 year typical without solar charging (6 months with >25 HOBOnodes) 2 years typical with solar charging	
<b>Repeater Dimensions</b>	43 cm (17 in) omni-directional antenna 30 cm x 40 cm (12 in x 16 in) directional antenna 8.9 x 11.4 x 5.4 cm (3.5 x 4.5 x 2.2 in) enclosure	

# HOBOnode Wireless Sensors

## Ordering Information

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**HOBOnode wireless temperature sensor**  
W-TMB  
16.5 cm x 5 cm  
(6.5 x 2 in)  
Cable 3.7 m (12 ft)

- Measurement range is -40° to 100° C (-40° to 212° F)
- 1 reading per minute. Temperature probe can be used in air, soil or water.
- Can run for multiple years on solar power without having to replace batteries
- Transmission range: HOBOnode sensor to receiver: 420 m (1400 ft) with clear LOS; 300 m (1000 ft) typical



**HOBOnode wireless soil moisture sensor**  
W-SMC  
16.5 cm x 5 cm  
(6.5 x 2 in)  
Cable 5 m (16 ft)

- 0 to 100% volumetric water content (m<sup>3</sup>/m<sup>3</sup>)
- 1 reading per minute
- Suitable for use in a wide variety of soils
- Can run for multiple years on solar power without having to replace batteries
- Transmission range: HOBOnode sensor to receiver: 420 m (1400 ft) with clear LOS; 300 m (1000 ft) typical



**HOBOnode Receiver**  
W-RCVR-USB  
16.5 cm x 5 cm  
(6.5 x 2 in)  
Cable 1.8 m (6 ft)

- Receiver communication to PC: 1.8 m (6 ft) USB cable (Optional extension cables available)



**HOBOnode Repeater**  
W-REPEATER  
(3.5 x 5.5 in) enclosure  
17 in omni-directional antenna  
(12 in x 16 in) directional antenna

- Transmission range: repeater to receiver or repeater: 2.4 km (1.5 miles) with clear LOS; 2 km (1.25 miles) typical
- Mast mounting kit included

**Note: This repeater can not be used in EU countries**

### Ordering Information

HOBOnode Wireless Temperature Sensor ***	W-TMB
HOBOnode Wireless Soil Moisture Sensor	W-SMC
HOBOnode Receiver	W-RCVR-USB
HOBOnode Repeater	W-REPEATER

#### Software

HOBOnode Viewer Utility Software	N/A
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#### Accessories

Solar Radiation Shield	RS3
Lithium AAA-2 pack	HRB-LI-AAA
<i>(For HOBOnode sensor and repeater operation below -20C — Lithium batteries do not support solar recharging feature)</i>	
Rechargeable replacement batteries	HRB-RCH-AAA
<i>(For the HOBOnode Sensors, Repeater, and Receiver)</i>	
USB active extension cable - 16 ft	CABLE-USB-EXT
<i>(Extension cable for use with HOBOnode Receiver only. Up to 5 of these can be used per Receiver.)</i>	

#### Tripod/Mast Accessories

Guy Wire Kit*	M-GWA
1/2 in Stake Kit*	M-SKA
2m Tripod with Mast**	M-TPB
1/4 in Stake Kit**	M-SKB

\* Recommended for securing mounting poles in windy locations

\*\* Recommended for the HOBOnode Repeater

\*\*\* Accurate temperature measurements in sunlight require a radiation shield.

We recommend 2.4 m x 3 cm (8 ft x 1¼ in) Schedule 40 PVC pipe for mounting the HOBOnode Sensors.  
**(purchase through local building supply store)**