



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:

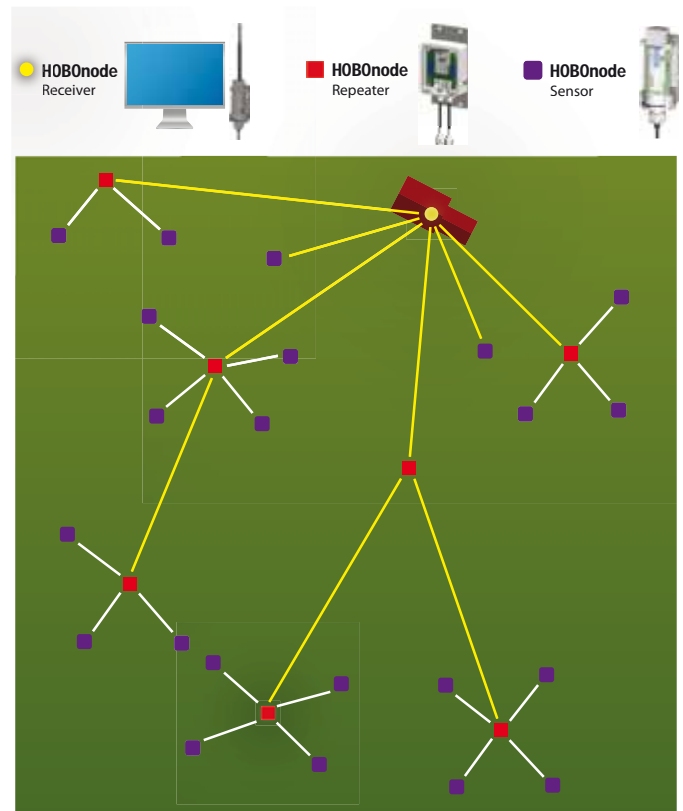
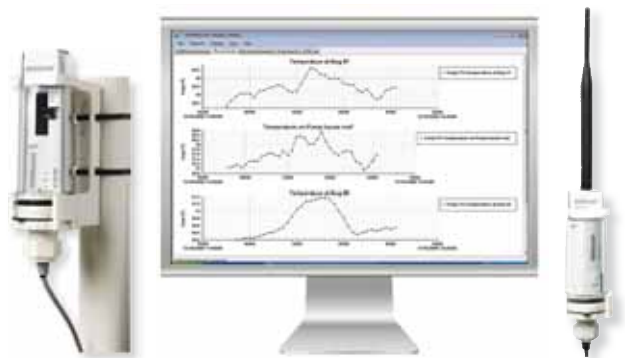
- Sensors transmit current field conditions to your PC
- Accompanying software provides alarm notifications to your cell phone, email, or PC
- All sensor data is logged to your PC
- HOBOnode Repeaters can be easily added to extend range
- Integrated solar panels keep batteries charged

For technical specifications and ordering information, please see page 31.

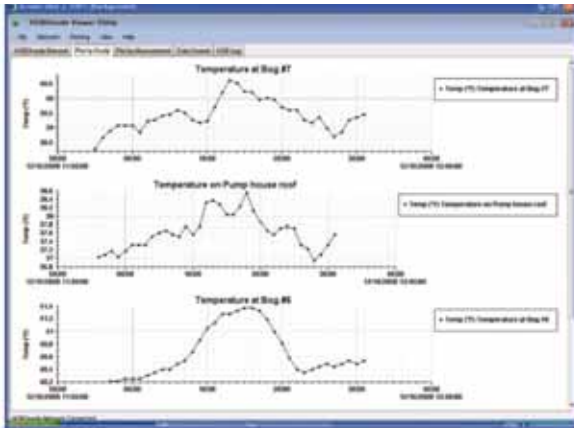
Fast, Easy Deployment

The HOBOnode 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 free 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.



The HOBOnode Viewer Utility, which provides sensor set up, readout, and displays real-time graphs of temperature and soil moisture conditions. (The HOBOnode Viewer is a free download).

Real-time Monitoring

The system can also be configured to provide alarm notifications via cell phone or email, as well as audible alarms, when field conditions exceed set thresholds. Data can be exported for use in HOBOWare Pro, spreadsheets, and other programs.

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.






HOBOnode Frost Alarm Starter System W-SYS-FR

- Protect your crops from frost with our HOBOnode Frost Alarm System.
- Get instant notifications sent to your cell phone, email, or PC when frost occurs.
- View real-time field conditions during frost events.
- Starter system includes HOBOnode Temperature and HOBOnode Receiver.



Up to 50 HOBOnode sensors can be used in a network.



Specifications		
	 Temperature Sensor W-TMB	 Soil Moisture Sensor W-SMC
Measurement Range	-40° to 100° C (-40° to 212°F)	0 to 1.00 m ³ /m ³ (0 to 100%) volumetric water content
Accuracy	± 0.21° from 0° to 50° C (± 0.38°F from 32° to 122°F)	± 3.1% (0.031) m ³ /m ³ in most soils, up to 8 ds/m
Resolution	0.025° at 25° C (0.045°F at 77°F)	0.07% (0.0007) m ³ /m ³
Response Time	3 minutes in air moving 1m/s 30 seconds in water	—
Sample Rate	1 reading per minute	
Battery Life	1 year typical without solar charging; 3 years typical with solar charging	
Size	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)
Transmission Range	HOBOnode sensor to Receiver or Repeater: 300 m (1000 ft) with clear line-of-sight Repeater to Receiver or Repeater: 1.6 km (1 mile) with clear line-of-sight Note: obstructions such as vegetation or walls will reduce range significantly	
Wireless Standard	Based on IEEE 802.15.4, 2.4 GHz ISM band (license free worldwide)	
Environmental Rating	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	
HOBOnode Sensors and Repeaters Standard Operating Range	-20° to 50° C (-4° to 122°F)	
HOBOnode Sensors and Repeaters Operating Range with Optional Lithium Batteries	-40° to 50° C (-40° to 122° F)	
HOBOnode Receiver Operating Range	-40° to 50° C (-40° to 122°F)	
HOBOnode Receiver Communication to PC	1.8 m (6 ft) USB cable (can be extended with optional extension cable).	
Maximum number of HOBOnode Sensors & Repeaters	50	
Maximum number of Repeaters in a series	4	
Repeater Battery Life	1 year typical without solar charging (6 months with >25 HOBOnodes) 2 years typical with solar charging	
Repeater Dimensions	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	

* Repeater (W-REPEATER) is not CE compliant



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: 300 m (1000 ft) with clear line of sight; any obstructions such as vegetation or walls will reduce this range significantly.



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 (m³/m³)
- 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: 300 m (1000 ft) with clear line of sight; any obstructions such as vegetation or walls will reduce this range significantly.



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: 1.6 km (1 mile) with clear line of sight; any obstructions such as vegetation or walls will reduce this range significantly.
- Mast mounting kit included

Note: This repeater is not CE compliant

Note: For deployment in open fields, the mast for W-REPEATER must be grounded using grounding kit (M-GKA) or equivalent.

Ordering Information

HOBOnode Sensors

HOBOnode Wireless Temperature Sensor ***	W-TMB
HOBOnode Wireless Soil Moisture Sensor	W-SMC
HOBOnode Receiver	W-RCVR-USB
HOBOnode Repeater	W-REPEATER
HOBOnode Wireless Frost Alarm Starter System (Includes temperature sensor, receiver, and software)	W-SYS-FR

Software

HOBOnode Viewer Utility Software (compatible with Windows 7, XP, Vista)	Free download at onsetcomp.com
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Accessories

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

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
Grounding Kit	M-GKA

* 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 1 1/4 in) Schedule 40 PVC pipe for mounting the HOBOnode Sensors.
(purchase through local building supply store)

