HOBO U30 Remote Monitoring Systems

- **Web-based energy and HVAC systems monitoring.**
- **All electronics are housed within an industrial-grade, tamperproof enclosure**
- **Set up is quick and easy with plug-and-play sensors**
- **Measures a wide range of energy and environmental parameters**
- **GSM Cellular, Wi-Fi, Ethernet and non-wireless options available**

Available models include:

HOBO® U30/GSM

- Internet access to real-time data
- Double weather proof, tamperproof enclosure
- Connect sensors, plug in battery, and go!

HOBO® U30/Wi-Fi

- Connect sensors, plug in battery, and go!
- Ruggedized hardware, with integrated Wi-Fi
- Get notified of problems via cell phone or e-mail

HOBO® U30/ETH

- Remote access to real-time data over Ethernet
- Simplifies facility-wide monitoring
- Connect sensors, plug in battery, and go!

HOBO® U30/NRC

- Fast data offload via direct USB
- Optional analog inputs with sensor excitation

Industrial-grade dependability

HOBO U30 Remote Monitoring Systems deliver high accuracy measurements you can count on — in even the harshest environmental conditions. All at a fraction of the cost of competitive solutions.

Incorporating patented technology, all of the systems' electronics are housed within a rugged double-weatherproof, tamperproof enclosure. This provides twice the protection and ensures years of reliable monitoring performance.

Fast, easy deployment

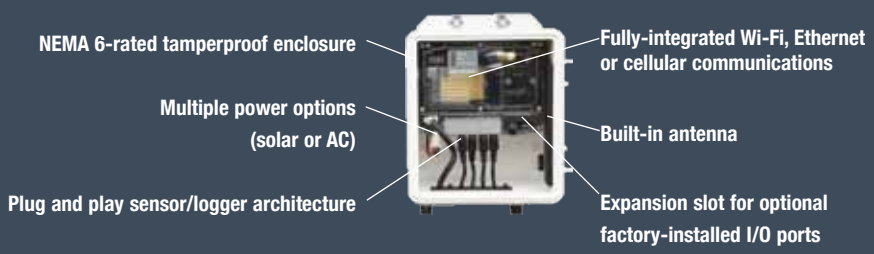
The systems' plug-and-play architecture enables any combination of Smart Sensors to be plugged in without extensive user programming, wiring, or calibration. Plug in your sensors, connect the battery, and you're streaming real time data!

Wide range of measurements

The HOBO U30 systems measure and record a wide range of parameters including:

- AC Voltage
- AC Amps
- DC Amps
- Temperature
- Temp/RH
- kW
- kWh
- Gauge Pressure
- Differential Air Pressure
- CO_2
- Pulse Inputs from electric, gas or flow meters
- DC voltage
- 4-20mA

An optional analog sensor port provides sensor power with user-selectable warm-up time



Learn More:

See specifications on page 35
See pricing on pages 37

HOBO U30 Remote Monitoring Systems

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HOBOlink®

HOBOlink is a web-enabled software designed for HOBO U30 GSM, Ethernet, and Wi-Fi models. It allows you to easily access current and historical data, set alarm notifications, and relay activations, quickly view your data, and manage and control your HOBO U30 Remote Monitoring Systems.

Customize Your Display

Easily configure your data display settings.
Create a single screen that displays key measurement data and trends for all of you HOBO U30 systems.

A secure web-based platform, HOBOlink provides users with password-protected accounts and 128-bit encrypted connection. You can keep your data entirely private, or make it accessible to others with a "Public Access" feature. Data can be provided in either text or HOBOware® Pro format.

Network Compatible at&t

T··Mobile authorized dealer

See page 36 for data service plans.

HOBOlink can automatically notify you via cell phone text message or e-mail when conditions exceed user-defined limits or if there is a sensor failure or low battery.

Smart Sensors

Temperature/RH
S-THB-M00x
cable lengths available
2 m, 8 m, (6.5 ft, 26 ft)

Ranges:	-40° to 75°C (-40° to 167°F) RH from -40° to 75°C (-40° to 167°F)
Accuracy:	±2.5% typical, 3.5% maximum, from 10 to 90% RH
Resolution:	0.02° @ 25°C (0.04° @ 77°F); 0.1% RH @ 25°C (77°F)
Response time:	Temp: 8 minutes, RH: 5 minutes (to 90% in airflow of 1 m/s)
Data channels:	2

12-bit Temperature
S-TMB-M0xx
2 m, 6 m, 17 m
cable lengths available
(6.5 ft, 20 ft, 56 ft)

Range: -40° to 100°C (-40° to 212°F) for sensor tip only

Accuracy:	± 0.2° from 0° to 50°C (±0.36° from 32° to 122°F)
Resolution:	0.03° from 0° to 50°C (0.054° from 32° to 122°F)
Environment:	Sensor tip and cable rated for 1-year immersion in fresh water ≤ 50°C (122°F)
Response time:	< 2 minutes (to 90% in airflow of 1 m/s)

Solar radiation shield (RS3) recommended for accurate temperature measurements in sunlight.

Silicon Pyranometer
S-LIB-M003
3 in 9.8 ft) Cable

Ranges:	0 to 1280 W/m^2
Spectral range:	300 to 1100 nm
Accuracy:	±10W/m^2 or ±5% whichever is greater in sunlight. Cosine corrected 0 to 80 degrees
Resolution:	1.25 W/m^2

Light sensor bracket (M-LBB) and light sensor level (M-LLA) recommended

4-20mA Input Adapter
S-CIA-CM14

Range:	0-20 mA
Accuracy:	±0.1 mA
Resolution:	±4.93 µA
	Choice of non-switched or switched input to save external battery power
Sensor trigger:	2.5 V

0-5V Input Adapter
S-VIA-CM14

Range:	0-5V DC
Accuracy:	±0.025V
Resolution:	1.221 millivolts
Sensor trigger:	Open collector or 2.5V

R.M. Young Wind Monitoring Adapters

R.M Young Wind Sensor Adapters

These adapters connect with R.M. Young Sensors, extending the range of wind monitoring applications that are possible with Onset's line of weather station and energy monitoring data loggers.

Wind Monitor Adapter S-WCE-M003
Wind Monitor AQ Adapter S-WCB-M003
Marine Wind Monitor Adapter S-WCC-M003
Wind Sentry Adapter S-WCD-M003

Wind Speed & Direction
S-WCA-M003
3 m (9.8 ft) Cable

	Speed	**Direction**
Range:	0 to 44 m/s (0 to 99 mph)	0-358°, 2° dead band
Accuracy:	Greater of ± 0.5 m/s (1.1 mph) or ±4% of reading	±5°
Resolution:	0.19 m/s	1.4 degrees
Starting threshold:	≤0.5 m/s, (1.1 mph)	
Data channels:	3 (average wind speed, direction, and highest 3 second gust)	

Survival to 54 m/sec (120 mph). Cross arm recommended for mounting. Grounding wire required for using this sensor with H21-002 Micro Station. Either the CABLE-HWS-G or CABLE-HWS-F can be used.

Wind Speed
S-WSA-M003
3 m (9.8 ft) Cable

Range:	0 to 45 m/s (0 to 100 mph)
Accuracy:	± 1.1 m/s (2.4 mph) or ± 4% of reading, whichever is greater
Resolution:	0.38 m/s
Starting threshold:	≤1 m/s (2.2 mph)
Data channels:	2 (average wind speed and highest 2 sec gust)

Survival to 54 m/sec (120 mph)
Cross arm or pole mount recommended (2x hose clamps required for pole mount). Not recommended for use with the HOBO Remote Monitoring System.

Sensors that require Pulse Input Adapter

kWh Transducer
T-VER-805X-XXX

Self-contained unit includes split-core AC current transformers and voltage leads to provide kilowatt hours of energy used.
Requires Pulse Input Adapter (S-UCC-M006)

Ranges:	208 to 480 VAC, 300 Amps, 1-phase 208 to 480 VAC, 800 Amps, 3-phase

kWhTransducer
T-WNB-3X-XXX

Works with CTs (T-MAG-SCT-XXX) to provide True RMS kilowatt hours of energy used, even for loads with non-sinusoidal waveforms.
Requires Pulse Input Adapter (S-UCC-M006)

Ranges:	208/240 VAC and 480 VAC ±15% Delta and Wye systems
Accuracy:	±0.45% of reading ±0.05% FS through 25th harmonic

Voltage Input Lead Set
A-WNB-LEADSET

5 foot cable length
single phase circuits 120 - 277 vac,
three phase circuits 208 - 480 vac

Ranges:	-25 C to 80 C
Current Range:	12A max.
Accuracy:	IEC 61010-031 @ 1,000V CAT III P2

Water Flow Meter Sensor
T-MINOL-130

A water meter for measuring cold and hot water flow rates.
Ranges: 0 to 22 gpm (gallon per minute)
Accuracy: 0.25-1 gpm
Requires Pulse Input Adapter (S-UCD-M006)

Compressed Air Flow Meter
T-CDI-5200-10S

Ranges: 1 to 80 SCFM
Accuracy: calibrated range: 5% of reading plus 1% of F.S. between 40 and 120° F
Can be configured for either analog or pulse output

Compressed Air Flow Meter
T-CDI-5400-20S

Ranges: 3 to 350 SCFM (3 to 600 SCFM extended range)
Accuracy: calibrated range: 5% of reading plus 1% of F.S. between 40 and 120° F
Can be configured for either analog or pulse output

- **Sensors that require optional Analog Sensor Port**

Gauge Pressure
T-ASH-G2-XXX

Ranges: 0-100, 0-200, 0-500 psig
Accuracy: ±1% of span from –20° to 85°C (-4° to 185°F)

Differential Air Pressure Transducer
T-VER-PXU-L*

Range: User selectable: 0.1; 0.25; 0.50; 1.0; 2.5; 5.0; 10.0 "WC (inches of water column)
Accuracy: +/- 1% F.S. of selected range
*** T-VER-PXU-X has no LCD display**

Carbon Dioxide/Temp
TEL-7001

Ranges: 0 to 4000 ppm CO_2 , 0° to 40°C (32° to 104°F)
Accuracy: ±50ppm or ±5% of reading; ±1°C (±2°F)
Requires CABLE-2070 for use with Analog Sensor Port.

kW Transducer
T-VER-8044-100

Ranges: 3 phase, 50/60 Hz, 480 VAC, 0 to 100 Amps
Accuracy: ±3% per ANSI C12.1 (from 10% to 100% of CT rating)

Air Velocity Sensor
T-DCI-F900-L-P
T-DCI-F900-L-O*

Ranges: 0.15 to 10 m/s (30 to 1969 fpm)
Accuracy: Greater of 10% of reading or +/- 0.05 m/s or 1% full-scale
*Ranges: 0.15 to 5 m/s (30 to 985 fpm)

Air Velocity Sensor
T-DCI-F900-S-P
T-DCI-F900-S-O*

Range: 0.15 to 10 m/s (30 to 1969 fpm)
Accuracy: Greater of 10% of reading or +/- 0.05 m/s or 1% full-scale
*Ranges: 0.15 to 5 m/s (30 to 985 fpm)

Split-Core200A DC Transducer
T-VER-H970-200

Ranges: 0 to 200Amps DC (selectable 0-50, 0-100, 0-200)
Accuracy: +/- 3% F.S

Split-Core Bi-Polar DC Transducer
T-VER-971BP-200

Ranges: -200 to 200 Amps DC
Accuracy: +/- 0.5A F.S.

Compressed Air Flow Meter
T-CDI-5200-10S

Ranges: 1 to 80 SCFM
Accuracy: calibrated range: 5% of reading plus 1% of F.S. between 40 and 120
Fits 1” steel pipe
Can be configured for either analog or pulse output

Compressed Air Flow Meter
T-CDI-5400-20S

Ranges: 3 to 350 SCFM
Accuracy: calibrated range: 5% of reading plus 1% of F.S. between 40 and 120 F
Fits 2” steel pipe
Can be configured for either analog or pulse output

Volatile Organic Compound (VOC)
T-ION-TVOC

Ranges: Three user selectable: 0-10, 0-100, 0-1000 ppm (parts per million)
Accuracy: 2% at lower range, 5% at other mid and high ranges

Sensors that require True RMS Module

TRMS Module
S-FS-TRMSA-D

AC Voltage
T-MAG-SPT-XXX

Ranges: 0-150, 0-300, 0-600 volts
Accuracy: ±1% (from 10% to 130% of rated voltage)

AC Current
T-MAG-SCT-XXX

Ranges: 0-5, 0-20, 0-50, 0-100, 0-200, 0-600 Amps
Accuracy: ±1% (from 10% to 130% of rated current)

Accessories

AC Power Adapter
AC-U30

Input power requirements: 100 to 240VAC, 50 or 60 Hz

Provides a continuous charge of the U30 battery.
(In the event of a power failure, the battery provides DC power to U30)

Technical Specifications

GSM Wireless Communication	Quad-Band GSM/GPRS 850/900/1800/1900 MHz
Wi-Fi Wireless Communication	2.412 - 2.484 GHz IEEE 802.11 b/g
Ethernet	IEEE 802.11 b/g
Alarm Relay	User-configured as normally open, normally closed, or pulsed (30V, 1A Max)
Alarm Notification Latency	Logging interval plus 2 to 4 minutes (typical)
Certifications	FCC Certified. Check www.onsetcomp.com for the latest certification. CE
Smart-Sensor Inputs	5 or 10
Data Channels	Maximum of 15 (some sensors use more than one data channel)
Sensor Network Cable Length	100 m (328 ft) maximum
Normal Operating Range	-20 to 40°C (-4 to 104°F)
Extended Operating Range	-40 to 60°C (-40 to 140°F) see battery life, Note: the GSM module will not communicate below -30°C (-22°F)
Local Communication	USB
Data Storage Memory	512K bytes local storage in non volatile flash memory
Operational Indicators	LEDs show status of sensors, logging, alarms, and remote communication
Logging Interval	1 minute to 18 hours, user-specified
Station-to-Internet Upload Interval	10 minutes to 24 hours, user-specified
Power	An Onset solar panel (1.2 w, 3 w, 6 w) or AC adapter is required
Battery Type	4 Volt, 10 AHr, Rechargeable Sealed Lead Acid
Battery Life	Typical 3-5 years depending upon conditions of use. Regular operation outside of the normal operating range will reduce battery life to 1-2 years.
Environmental Rating	Weatherproof; tested to NEMA 6
Dimensions	17.8 H x 11.7 D x 19.3 W cm (7.0 H x 4 .6 D x 7.6 W inches)
Weight	2 kg (4.30 lbs)
Mounting	Up to 1.63 in (4.1 cm) mast or wall mount
Enclosure Access	Hinged door secured by two latches, which can be further secured with user-supplied padlocks

Optional Analog Sensor Port

Inputs	2 channels - User-configured as either 0-20 mA or 0-20 VDC
Sensor Power	Switched 12 VDC, up to 50 mA: user-selectable warm-up from 5 milliseconds to 2 minutes
Scaling	Linear scaling to user units
Accuracy	± 0.25% full scale

HOBO U30 Remote Monitoring Systems Ordering Guide

HOBO Remote Monitoring Systems with GSM Communications	GSM Cellular to Internet	**U30-GSM**- ___	- __	-**S100**	- ___	
Sensor Port Options	No sensor port	**000**				
	2-channel analog sensor port	**VIA**				
Smart Sensor Input Options	5 smart sensor inputs	**05**				
	10 smart sensor inputs	**10**				
Battery Option	10 Ah rechargeable battery	**S100**				
HOBOlink/T-Mobile Data Service*	10 minute calling (1 min log)	**102**				
	20 calls per day (1 min log)	**104**				
	1 call per day (15 min log)	**105**				
HOBOlink/AT&T Data Service*	10 minute calling (1 min log)	**202**				
	20 minute calling (1 min log)	**203**				
	20 calls per day (1 min log)	**204**				
	1 call per day (15 min log)	**205**				

See onsetcomp.com for the latest selection of service plans.
*Early termination fees apply. A $200 fee will be assessed for terminating the service plan within 30 days. No refund will be applied for terminating the plan after 30 days.

HOBO Remote Monitoring Systems with Wi-Fi Communications**	Wi-Fi to Internet **	**U30-WIF**- ___	- __	- ____	- ___	
Sensor Port Options	No sensor port	**000**				
	2-channel analog sensor port	**VIA**				
Smart Sensor Input Options	5 smart sensor inputs	**05**				
	10 smart sensor inputs	**10**				
Battery Option	4.5 Ah rechargeable battery	**S045**				
	10 Ah rechargeable battery required when using analog sensor port for sensor power	**S100**				
HOBOlink Data Service	10 minute upload (1 sec log)	**001**				
	10 minute upload (1 min log)	**002**				
	1 hr uploads (5 min log)	**003**				

See onsetcomp.com for the latest selection of service plans.
***Pre-N routers are Preliminary and should not be used with U30 Wi-Fi Remote Monitoring Systems.*

HOBO Remote Monitoring Systems with Ethernet Communications	Ethernet to Internet	**U30-ETH**- ___	- __	- ____	- ___	
Sensor Port Options	No sensor port	**000**				
	2-channel analog sensor port	**VIA**				
Smart Sensor Input Options	5 smart sensor inputs	**05**				
	10 smart sensor inputs	**10**				
Battery Option	4.5 Ah rechargeable battery	**S045**				
	10 Ah rechargeable battery required when using analog sensor port for sensor power	**S100**				
HOBOlink Data Service	10 minute upload (1 sec log)	**001**				
	10 minute upload (1 min log)	**002**				
	1 hr uploads (5 min log)	**003**				

See onsetcomp.com for the latest selection of service plans.

HOBO Remote Monitoring Systems without remote communications	No remote communication	**U30-NRC** - ___	- __	- ____	-**000**	
Sensor Port Options	No sensor port	**000**				
	2-channel analog sensor port	**VIA**				
Smart Sensor Input Options	5 smart sensor inputs	**05**				
	10 smart sensor inputs	**10**				
Battery Options	4.5 Ah rechargeable battery	**S045**				
	10 Ah rechargeable battery required when using analog sensor port for sensor power	**S100**				
Data Plan	No data plan needed	**000**				

HOBO U30 Remote Monitoring Systems Ordering Guide

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Power Source Options

1.2 Watt Solar Panel for sunny locations and/or locations with low data transfer requirements (readout every 2 hours or longer)
SOLAR-1.2W

3.0 Watt Solar Panel for moderately sunny locations and/or medium data transfer requirements (such as hourly readout).
SOLAR-3W

6.0 Watt Solar Panel for cloudy locations and/or high data transfer requirements (faster than 15 minute readouts)
SOLAR-6W

AC Power Adapter (120V, 60Hz) for locations with AC power available the adapter is not weatherproof.
AC-U30

AC Power Adapter (EU) (240V, 50Hz) for locations with AC power available the adapter is not weatherproof.
AC-U30-EU

Smart Sensors

Temperature	
2-m cable	S-TMB-M002
6-m cable	S-TMB-M006
17-m cable	S-TMB-M017
Temp/RH	
2-m cable	S-THB-M002
8-m cable	S-THB-M008
Wind Speed/Direction	S-WCA-M003
Wind Speed Sensor	S-WSA-M003
Rain Gauge: (.01 in)	S-RGA-M002
Rain Gauge: (0.2 mm)	S-RGB-M002
Soil Moisture (ECHO 20)	S-SMA-M005
Soil Moisture (ECHO 10)	S-SMB-M005
Soil Moisture (ECHO 5)	S-SMC-M005
Leaf Wetness	S-LWA-M003
PAR	S-LIA-M003
Solar Radiation	S-LIB-M003
Barometric Pressure	S-BPB-CM50

Adapters

Pulse Input Adapter:	
-Electronic Switch	S-UCC-M006
-Contact Closure	S-UCD-M006
Wind Monitor Adapter	S-WCE-M003
Wind Monitor-AQ Adapter	S-WCB-M003
Marine Wind Monitor Adapter	S-WCC-M003
Wind Sentry Adapter	S-WCD-M003

Sensors that requre Pulse Input Adapter

kWh	
Wye config 208/240	T-WNB-3Y-208
Delta/Wye config 208/240	T-WNB-3D-240
Delta/Wye config 480	T-WNB-3D-480
Veris kWh	
1-phase, 300 Amp	T-VER-8051-300
3-phase, 800 Amp	T-VER-8053-800
Water Flow Meter	T-MINOL-130
Compressed Air Flow Meter	T-CDI-5200-10S
	T-CDI-5400-20S
Wye config 120/480	A-WNB-LEADSET

Sensors that require Analog Sensor Port

Ashcroft Gauge Pressure	
100 psig	T-ASH-G2-100
200 psig	T-ASH-G2-200
500 psig	T-ASH-G2-500
Differential Air Pressure Transducer	
.01-10.0 WC	T-VER-PXU-L
.01-10.0 WC	T-VER-PXU-X
CO_2 /Temp	TEL-7001
CO_2 /Temp Port Cable	CABLE-2070
kW	T-VER-8044-100
Duct-Mount Temp/RH	T-VAI-HMD-40Y
DC Amperage	T-VER-H970-080
DC Current	
0-200 Amp	T-VER-H970-200
0-200 Amp	T-VER-971BP-200
Air Velocity Sensor	
0.15-10 m/s	T-DCI-F900-L-P
0.15-5 m/s	T-DCI-F900-L-O
0.15-10 m/s	T-DCI-F900-S-P
0.15-5 m/s	T-DCI-F900-S-O
Compressed Air Flow Meter	
1-80 SCFM	T-CDI-5200-10S
3-350 SCFM	T-CDI-5400-20S
Volatile Organic Compound (VOC)	
0-1000 ppm	T-ION-TVOC

Sensors that require True RMS Adapter

TRMS Module	S-FS-TRMSA-D
AC Amperage	
0-5 Amp	T-MAG-SCT-005
0-20 Amp	T-MAG-SCT-020
0-50 Amp	T-MAG-SCT-050
0-100 Amp	T-MAG-SCT-100
0-200 Amp	T-MAG-SCT-200
0-600 Amp	T-MAG-SCT-600
AC Voltage	
0-150 Volt	T-MAG-SPT-150
0-300 Volt	T-MAG-SPT-300
0-600 Volt	T-MAG-SPT-600

Adapters for R.M. Young Wind Monitoring Sensors

R.M. Young Wind Monitor Adapter for Wind/Alpine	S-WCE-M003
R.M. Young Wind Monitor AQ Adapter for Wind/Alpine	S-WCB-M003
R.M. Young Marine Wind Monitor Adapter for Wind/Alpine	S-WCC-M003
R.M. Young Wind Sentry Adapter for Wind/Alpine	S-WCD-M003

Tripod/Masts and Accessories

2m Tripod with Mast (M-SKB recommended)	M-TPB
Complete 2 Meter Tripod Kit	M-TPB-KIT
3m Tripod with Mast (M-SKA recommended)	M-TPA
Complete 3 Meter Tripod Kit	M-TPA-KIT
3 m Mast	M-MPA
1.5 m Mast	M-MPB
Guy Wire Kit	M-GWA
1/4 in. State Kit	M-SKB
1/2 in. State Kit	M-SKA
Grounding Kit	M-GKA
(does not provide protection from direct lightening strikes)	
Mast Level	M-MLA
(recommended for installing masts or tripods)	
Half Cross Arm	M-CAB
(recommended for use with wind sensors)	
Solar Radiation Shield	RS3
(for use with temperature and temp/RH sensors)	
Light Sensor Bracket	M-LBB
(for mounting PAR and solar radiation sensors on masts or flat vertical surfaces)	
Light Sensor Level	M-LLA
(recommended for installing PAR and solar radiation sensors)	
Smart Sensor Extension Cables	
(total cable length of all sensor cables is limited to 100 m (300 ft)	
2-m length	S-EXT-M002
5-m length	S-EXT-M005
10-m length	S-EXT-M010
25-m length	S-EXT-M025
Weatherproof Connection Housing (*required for outside connections*)	S-EXT-CASE
1 to 2 Sensor Adapter	S-ADAPT-5
This allows a single Smart Sensor input to branch to two Smart Sensors.	
Cable Caddy	M-CDY
Smart Sensor Expansion Box	S-ADAPT-6