ToughSonic® REMOTE 14 Level Sensor

Level & Distance Data Collection for Remote Monitoring

REMOTE Series

Non-Contact Ultrasonic Distance & Level Measurement

REMOTE sensors are designed for level and distance measurement in remote monitoring and other demanding outdoor applications. Surge protection assures reliable performance in lightning prone areas, and they consume less power than our other models.

Connect to one sensor or up to 32 sensors in an RS-485 network group. Whether your data needs are simple or complex this sensor can handle them. Connect with displays, RTUs, PLCs, PCs or custom systems.

These all-weather sensors provide years of maintenance free service and survive submersion.

SenixVIEW PC Software included!

Communications

Addressable Modbus RTU industry standard protocol is supported by PCs and most monitoring equipment.

Protocol options also include simple ASCII or phased high speed multi-sensor data collection for special applications.

Baud rate selectable from 9600 to 115k to meet your needs.

Operating mode can be either measure-on-poll or free-running. When free running the latest data is returned on poll. In either mode sensor data may be filtered or averaged by pre-selected algorithms.

SenixVIEW software supports configuration and testing of one sensor or a group (network) of sensors. It also allows storage and recall of setups for fast sensor cloning (copying) to save time.

Features & Benefits

Rugged Packaging contains electronics and cable potted into a stainless 316 housing for reliable performance in wet or dirty environments.

Smart Ultrasonics gives you control of sensor parameters to optimize performance in each application. Additional support features include data logging, statistics and output test features for installation and verification.

Distance Measurements are made without contact with the liquid or solid material and are:

- Long range, short dead band
- Unaffected by optical factors like color and transparency
- Narrow beam with adjustable sensitivity to suit your needs
- Temperature compensated
- No warmup, ready to measure within 1 second of power on

Indoor & Outdoor

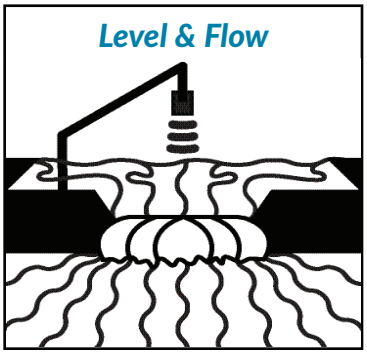
The REMOTE 14 is being used in thousands of challenging remote monitoring installations (and also in benign environments).

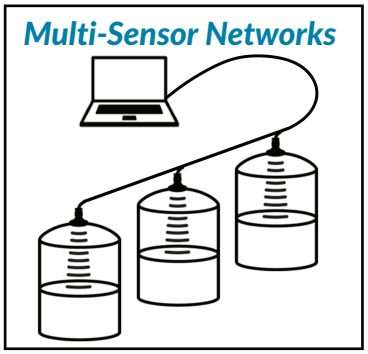
Surge Protected for transients up to 7 kV on the data and power circuits — 75% stronger immunity than CE EMC directives, for improved lightning resistance.

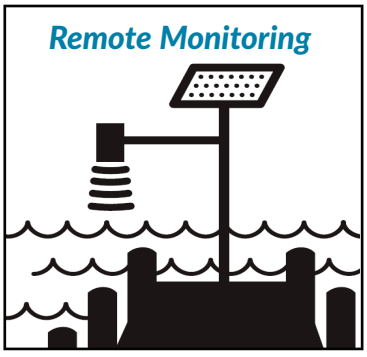
21% Lower Power consumption than our ToughSonic 14 for solar/battery installations.

Some Example Applications:

- Irrigation control
- Open channel flow
- Conveyor contents profiling
- Agricultural machine control
- Liquid tank networks
- SCADA* level sensing (*Supervisory Control and Data Acquisition)







TOUGHSONIC®
Tough. Smart.

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Senix® Distance Measurement

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ToughSonic® REMOTE 14 Level Sensor

Specifications

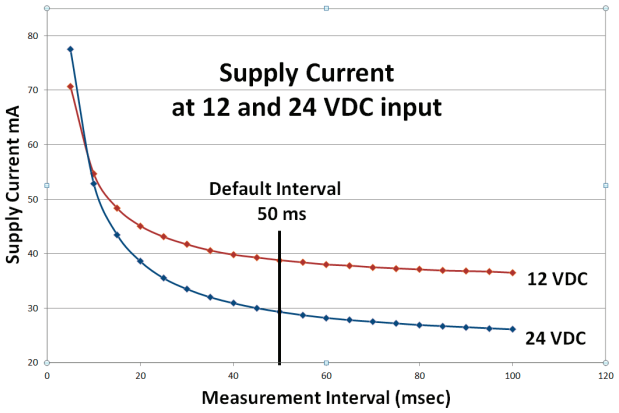
Optimum Range	10 ft. (3 m)	**Max Range**	14 feet (4.3 m)
Deadband	Typ. < 4 in. (100 mm)	**Beam Width**	Nominal +/- 6 deg @ -3db
Case Material	316 stainless steel	**Configuration**	Stored in sensor's non-volatile memory
Temperature	-40 to 158 F (-40 to 70 C)	**Data Output**	Modbus, ASCII streaming, specials
Humidity	0 to 100% operating	**Transducer**	120 kHz, Ruggedized Piezoelectric
Compensation	Selectable temperature compensation	**Protection**	NEMA-4X, NEMA-6P, IP68
Data Resolution	0.0034 in. (0.086 mm) per count	**Adjustment**	SenixVIEW PC Software
Repeatability	Nominal 0.2% of range @ constant temp. Affected by target, distance, environment		
Update Rate	20 Hz (50 ms), SenixVIEW adjustable; also affected by SenixVIEW filter selections		
RS-232 Serial Data	Modbus protocol, single sensor, 9600 to 115200 baud, 8 data bits, 1 stop, no parity		
RS-485 Serial Data	Modbus protocol, multi-sensor addressable, 9600 to 115200 baud, 8 data bits, 1 stop, no parity		
RS-485 Networks	From 1 to 32 sensors can operate in an addressable multi-drop network		
Ready time	< 1 second after power application		
Cable	2m standard length, potted into sensor body, PUR with shield and drain, other lengths available		
Conformance	CE, RoHS, Surge protection exceeds IEC 61000-4-5		

Target Requirements	
Objects	Detects liquid surface, flat or curved objects. Surface must reflect ultrasound to sensor
Max. Distance	Affected by size, shape, orientation of target (sound level reflected back to sensor), environment Restrict use to Optimum Range when using over a wide range of environmental conditions
Orientation	Sensor should be oriented perpendicular to liquid surface for maximum reflection
Optical	Unaffected by target color, light, transparency or other optical characteristics

Connections

Connection	Wire	Description
Power (**)	Brown	10-30 VDC @ 80 mA max Typical: 30 mA @ 24 VDC
Ground	Blue	Power & interface common
RS-232 out **RS-485-**	Gray	Serial data connection (depends on model)
RS-232 in **RS-485+**	Yellow	Serial data connection (depends on model)

(**) Continuous measurements at default interval.
Minimum 15 VDC input for optimum sensitivity.

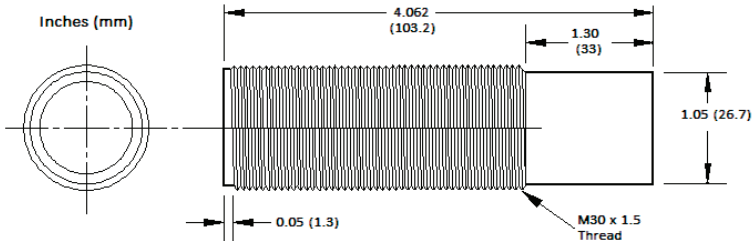


Part Numbers

Model Number	Description
U14-REMOTE-232	Sensor with serial RS-232 interface
U14-REMOTE-485	Sensor with serial RS-485 interface (allows addressable multi-sensor networks)

Senix also offers interconnection, communications, mounting, and display components

Dimensions



Mechanical

Dimensions are in inches (mm)

Mounting Hole: 1.2 in. (30.5 mm) diameter

Standard Cable: 6.5ft (2m)

Ships with manual and two 30mm SS316 mounting nuts (mounting brackets available)

Weight: 10.4 oz (0.29 kg)

1 Dec 2015 Rev U1A