

# Ultrasonicator-Sä

## Sealed Modular Configurable Distance Sensor

**ULTRA-S Series**  
ULTRA-S, ULTRA-S-BP

Non-Contact  
Ultrasonic  
Air Distance  
Measurement

Ultrasonicator-S measures the distance to your material without contact! These sensors are used in hundreds of applications including roll diameter, tank/bin levels, motion controls, positioning and dimensioning. Modular design allows you to configure a sensor to meet your exact requirements.

### Outputs

Sensor equipment outputs are set based on measured distance. Serial data RS-232/485 is a standard feature to support computer setup. Add-on **Analog Output Modules** have both 0-10 VDC and 4-20 ma. current loop and are available in both isolated and non-isolated versions. **Relay Modules** include several dry contact and solid state options. All outputs operate simultaneously and are independently adjusted. Setup is either by push-button "teach" or computer.

### More Options

**AC Power Modules** for direct-wired 115 or 230 VAC inputs.

**Small Remote Transducers** for restricted space locations.

**Digital LED Displays** provide user-scaleable remote level or distance readout, 1/8 DIN size.

**Transducer Protection** for dust, splash or chemical resistance.

**Flange Mount** (2" NPT) for thread mounting.

**SoftSpan™ PC Software** for setup, monitoring and logging (see SoftSpan™ at right).

### Benefits

The unique design of this sensor family results in a combination of benefits not found elsewhere.

#### RELIABLE PERFORMANCE

- High sensitivity offers wide performance range from small objects at close range to larger distant objects (see reverse)
- Detects most materials - hard or soft - any color
- Unique setup options permit optimum installation

#### FACTORY GRADE

- Rugged PVC enclosure
- Conduit entry
- Terminal block wiring
- Industrially rated interfaces
- Factory installed environmental protection options
- **Not rated for human safety or hazardous environments**

#### MODULAR CONSTRUCTION

- Interface modules are housed in the main enclosure
- Various analog, relay and AC power modules available
- Two body styles allow either integral or remote transducer
- Choose only what you need - options easily reconfigured

#### EASY TO INSTALL

- Pushbutton "teach" setup using actual targets
- Computer setup for maximum flexibility and visibility
- Stored setups allow quick duplication without recalibration for repairs or repeat installations

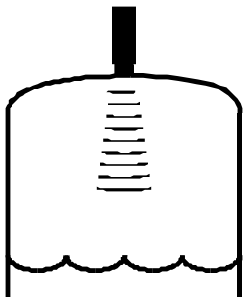


### SoftSpanä Setup

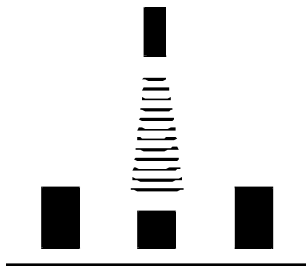
Optional SoftSpan™ software brings superior flexibility and visibility to your installation! Gain control over features like measurement rate, filters, hysteresis, communications modes, echo loss response, range & much more. Setups can be stored and retrieved from disk. Measurements are shown in real time, plus a "strip chart" history with statistics. Or measurement data can be stored for later analysis. Graphical Windows and text DOS versions are both included.



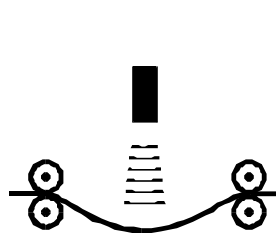
#### Level or Height



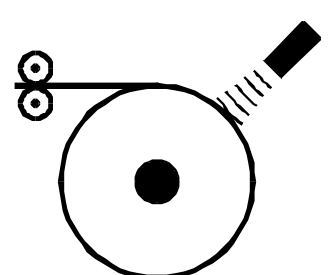
#### Dimension/Sort



#### Web/Loop Control



#### Roll Diameter



# Ultrasensor Sealed Configurable Material Sensor

## Target Performance

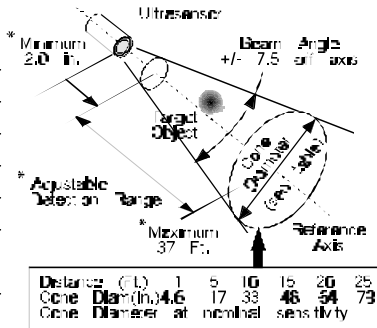
**Color/Transparency**  
Unaffected by object color, transparency or optical characteristics.

**Orientation**  
Detects flat or curved objects. Surface should reflect back to sensor. Flat surfaces are best when perpendicular to reference axis, and may not be detected at higher angles of incidence.

**Density**  
Low density materials including some foams, cloths and powders may exhibit reduced detection range in some applications. Testing is recommended.

Object	Max Range (ft.)
14 ga. solid wire	10
baseball	16
1 sq. in. plate	20
basketball	22
1 sq. ft. plate	30
Large surfaces or Liquid in standpipe	37

More distant objects should typically be larger. Consult Senix for assistance with special considerations or applications.

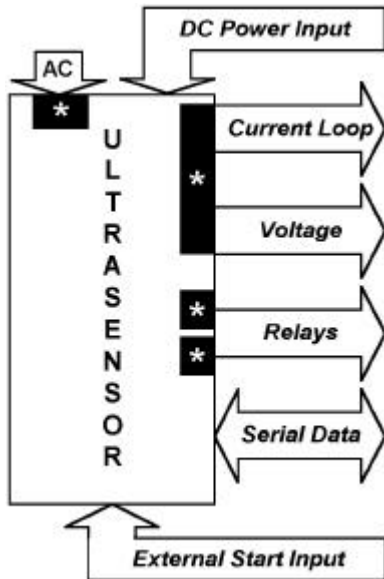


\* The factory configured minimum range is 8.0 inches. This can be reduced to 2 in. (51 mm) or less using SoftSpan™.

## Specifications

<b>Range (1)</b>	2 in. (51 mm) to 37 feet (11.3 m)	<b>Beam Angle</b>	15 Degrees (nom) @ -3db conical
<b>Temperature</b>	-30 to 70 degrees C	<b>Humidity (2)</b>	5 to 95%, non-condensing
<b>Case Material</b>	PVC, foam gasketed cover	<b>Field Settings</b>	Permanently Stored
<b>Sensitivity</b>	Adjustable 3/4 turn potentiometer (internally accessible, screwdriver adjustable)		
<b>Repeatability</b>	Nominal 0.1% of range @ constant temp. Affected by target, distance, environment		
<b>Update Rate</b>	20 Hz (nominal), 120 Hz maximum, SoftSpan™ adjustable to suit the application		
<b>Resolution</b>	0.003384 in. (.086 mm) max.; Analog 12 bits over spanned distance & full analog range		
<b>Dimensions</b>	Base enclosure without backplate option: 11.7" (297) H x 3.1" (79) W x 3.75" (95) D Backplate Option (ULTRA-xx-BP or UA-BP): 8.0" (203) H x 6.0" (152) W x 0.25" (6) D		
<b>NOTES:</b>	(1) Operation as close as 1/2 in. (13 mm) with small remote transducer option. ULTRA-SP range is 18 in. (457 mm) to 20 ft. (6.1 meters), for wet environments only (2) Protection options & models available for wet or dusty environments		

## Interfaces



- 10-30 VDC @ 70 ma. base, 285 ma. max. fully populated
- 13.5 VDC min. required for full 10 VDC VOLTAGE output
- 15 VDC min. when using isolated current sourcing analog output
- OPTION MODULES: Internal 115 VAC or 230 VAC power supply
- Analog modules contain both 0-10 VDC and 4-20 ma. current loop
- 4-20 ma loop is current sourcing (isolated) or sinking (non-isolated)
- Pushbutton adjustable endpoints and slope
- SoftSpan™ adjustable endpoints, slope, endpoint analog values (in the range 0-10 VDC or 0-20 ma), and target loss response
- OPTION MODULES: Isolated & non-isolated versions available (isolated version requires 1 of the 2 available relay module slots)
- Pushbutton adjustable switching distances and on/off states
- SoftSpan™ adjustment adds hysteresis and target loss responses
- OPTION MODULES: Form C dry contacts or SSR's (AC & DC), 2 relays per module, max 2 modules (4 relay/switches)
- Both RS-232 & RS-485 ASCII data communications are standard
- 9600 baud, 8 data bits, 2 stop bits, no parity
- Free running or controller requested (polled) data responses
- Supports RS-485 multi-drop sensor network configurations
- Connect to SoftSpan™, displays, computers, controls, etc.
- Triggers measurement from an external event
- TTL logic with pullup, assert ground to trigger measurement

\* Denotes user-installed option module(s)

## Base Models

-BP suffix indicates backplate option



**ULTRA-S-BP**  
Most popular unit, the backplate mounts to a machine surface or bracket.



**ULTRA-SP # ULTRA-S**  
The 2" NPT transducer threads into a flange. -SP recommended for wet areas.



**ULTRA-SR-BP**  
Base unit connects to small remote transducer options. #

# See separate data sheet