ToughSonic®/PC Distance Sensor

Windows PC or Button Setup, Waterproof, Multiple Outputs

TSPC-15S Series

Button TEACH or PC Configured Non-Contact Ultrasonic Distance Measurement

TSPC sensors and SenixVIEW software put the power of ultrasonics in your hands yet retain the simplicity of push-button TEACH setup. You can quickly adjust, optimize, save and clone your applications without calibration!

ToughSonic sensors contain a rugged transducer potted in a stainless steel housing for long life.

Outputs respond to measured distance and non-contact technology means nothing touches your materials.

Many applications exist in all industries. Contact Senix today to discuss your specific needs.

Features

Distance Measurements

- Long range, short dead band
- Unaffected by optical factors like color and transparency
- PC or button "teachable" setup
- Narrow beam with adjustments to optimize performance
- Temperature compensated

Packaging & Performance

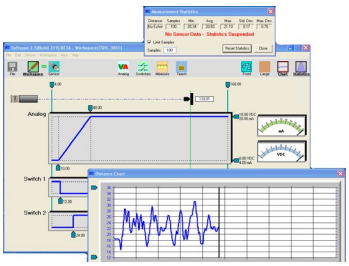
- Quick mounting
- Durable sealed housing for wet or dirty applications
- Short & overload protected I/O
- Multi-sensor synchronization
- Adjustable sensitivity
- Rear status indicators (3)

Free Functionality

Use adjustable interface features like switch hysteresis and time delays to build complete solutions such as pump or material flow controllers. Save cost by eliminating PLCs, delay circuits and time delay relays!

PC Setup Power!

Use SenixVIEW software (see separate data sheet) to select and adjust all interfaces, timing parameters, filters and modes. Then view, analyze or log data to optimize your application.



Several push-button "teach" features also provide common adjustments without the PC.

Stock, repairs, OEMs

Flexible configuration means fewer parts to stock and quick duplication! Higher volume OEM options are available.

Multiple Outputs

In addition to the model's serial data interface there are five simultaneous outputs. All have SenixVIEW configurable features including ranges, target responses and time delays.

Analog Outputs (3)

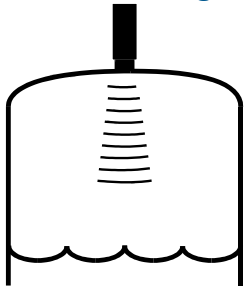
These include voltage (0-10 VDC) and two current loops (4-20 mA sinking and sourcing).

The analog slope can increase or decrease value with distance. The analog output limits can be set any distance, and have user-selected voltage/current values.

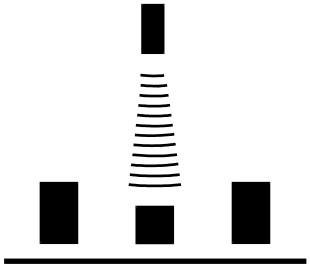
Switches (2)

Two switches are SenixVIEW configurable as either "PNP" or "NPN" type (sourcing or sinking). Each has adjustable set point, hysteresis, window, initial conditions, ON delay, OFF delay and loss of target response for ultimate flexibility.

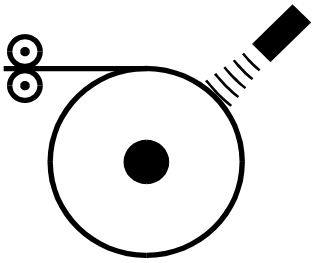
Level or Height



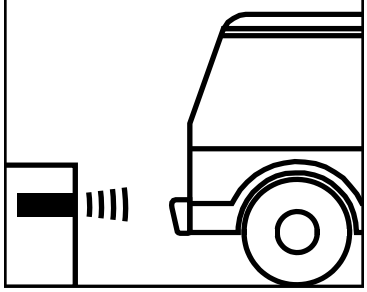
Distance-Proximity



Dimension



Object Detection



AGT Absolute Gauge Technologies™

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Senix® Distance Measurement

Senix® TSPC-15S ToughSonic® Distance Sensor

Specifications

Optimum Range	10 in.- 20 ft. (25.4 cm- 6.1m)	**Max Range**	30 feet (9.1 meters)
Case Material	316 stainless steel	**Adjustment**	Button "teach" or SenixVIEW
Temperature	-40 to 158 F (-40 to 70 C)	**Configuration**	Stored in non-volatile memory
Humidity	0 to 100% operating	**Transducer**	Ruggedized piezoelectric
Compensation	Temperature compensated	**Protection**	NEMA-4X, NEMA-6P, IP68
Resolution	Digital: 0.0068 in. (0.172 mm); Analog:4099 steps (over full 0-10 VDC or 4-20 mA)		
Repeatability	Nominal 0.3% of range @ constant temp. Affected by target, distance, environment		
Update Rate	10 Hz (100 ms), SenixVIEW adjustable; affected by SenixVIEW filter selections		
Voltage Output	0-10, 0-5 VDC or PC customized; 10 mA max. (*)		
Current Loop #1	Current sourcing 4-20 mA or PC customized, max. loop 450Ω (*)		
Current Loop #2	Current sinking 4-20 mA or PC customized, max. loop 450Ω (*)		
Sinking Switch	150 mA max. @ 40 VDC max., teachable set point & polarity, fault indication		
Sourcing Switch	150 mA max. @ input voltage, teachable set point & polarity, fault indication		
RS-232, RS-485	Modbus protocol, 9600-115200 baud (selectable), 8 data bits, 1 stop, no parity		
SYNC feature	Permits up to 32 sensors to operate in close proximity without interaction		

Target Requirements

Objects	Detects flat or curved objects. Surface must reflect ultrasound back to sensor.
Max. Distance	Affected by size, shape, orientation of target (sound level reflected back to sensor)
Orientation	Flat surfaces should be oriented perpendicular to sensor output beam
Optical	Unaffected by target color, transparency, light, or other optical characteristics

Connections

Cable Connection	Wire	Description
Power	Brown	10-30 VDC @ 70 mA maximum; Typical: 45 mA @ 24 VDC (**)
Ground	Blue	Power and interface common
Voltage Output *	Violet	0-10 VDC, 0-5 VDC or custom end values between 0 and 10 VDC
Current Loop Output *	Green	4-20 mA sourcing (adjustabled end values between 4 and 20 mA)
Current Loop Output *	Orange	4-20 mA sinking (adjustabled end values between 4 and 20 mA)
Switch #1 Output	Black	Sinking ("NPN") or Sourcing ("PNP"), user selected
Switch #2 Output	White	Sinking ("NPN") or Sourcing ("PNP"), user selected
RS-232 out / RS-485-	Gray	Serial data connection (depends on model - see model selection)
RS-232 in / RS-485+	Yellow	Serial data connection (depends on model - see model selection)

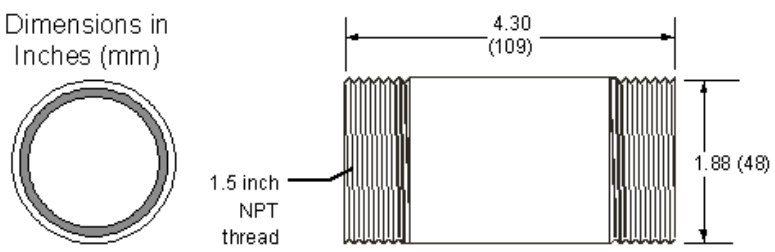
(*) Analog outputs share common distance endpoints. Both 4-20 mA outputs share the same adjustable max / min end values. The maximum loop resistance is derated below 15 VDC input voltage.
(**) At default update rate. Output currents not included. Sensitivity reduced below 15 VDC input voltage.

Part Numbers

Model Number	Description
TSPC-15S-232	Serial RS-232 interface (PC COM port compatible)
TSPC-15S-485	Serial RS-485 interface (allows addressable multi-sensor networks)

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

Dimensions



Mechanical

Mounting: 1.5 inch NPT thread, top or bottom

Attached Cable: 6.5ft (2 m)

Total Weight: 22.6 oz. (0.64 kg)

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