ToughSonic® 30 Level & Distance Sensor

Windows PC or Button Setup, Waterproof, Multiple Outputs

TSPC-15S Series

TSPC sensors with 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.

Up to 30-ft. (9.1 m) maximum range in IP68 rated 1-1/2 in. NPT threaded housing

SenixVIEW PC Software included!

CE

Non-Contact Ultrasonic Distance & Level Measurement

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 using 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!
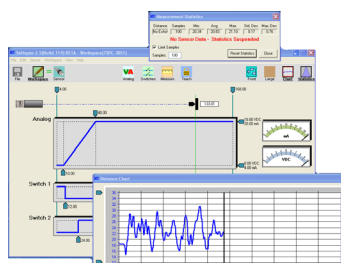
PC Setup Power!

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.

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

Push-button "teach" features provide for several common adjustments when a PC is not available.
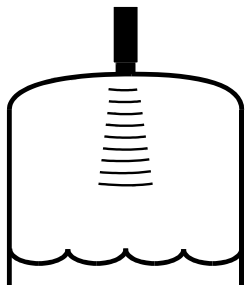
Multiple Outputs

In addition to the model's RS-232 or RS-485 serial data interface there are five simultaneous outputs, fully configurable with SenixVIEW.

Analog Outputs (3) include 0-10 VDC and dual 4-20 mA current loops (sinking and sourcing). These outputs have user-selectable voltage/current ranges, adjustable endpoint distances, slope reversal, timing parameters and much more.
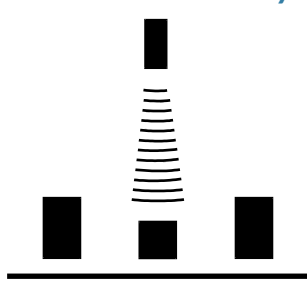
Switches (2) are SenixVIEW configurable as "PNP" or "NPN" type (sourcing or sinking). Each has adjustable set point, hysteresis, window, initial conditions, ON delay, OFF delay and loss of target response for ultimate flexibility.

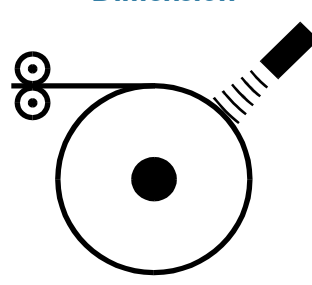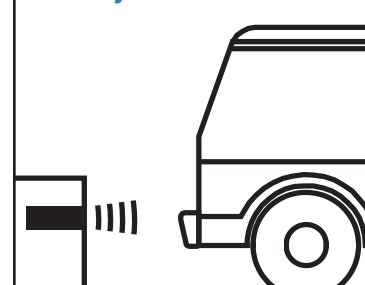**TOUGH**SONIC®
Tough. Smart. Connected.

Level or Volume

Distance-Proximity

Dimension

Object Detection

Senix
distance & level sensors

ToughSonic® 30 Level & Distance Sensor

Specifications

Optimum Range	*20 ft. (6.1 m)*	**Max Range**	*30 ft. (9.1 m)*
Deadband	*Typ. < 10 in. (25.4 cm)*	**Adjustment**	*Button "teach" or SenixVIEW*
Case Material	*316 stainless steel*	**Configuration**	*Stored in non-volatile memory*
Temperature	*-40 to 158 F (-40 to 70 C)*	**Outputs**	*Five selectable, plus serial data*
Humidity	*0 to 100% operating*	**Transducer**	*Ruggedized piezoelectric*
Compensation	*Temperature compensated*	**Protection**	*NEMA-4X, NEMA-6P, IP68*
Resolution	*Serial data: 0.0068 in. (0.172 mm); Analog:4099 steps (0-10 VDC), 3279 steps (4-20 mA)*		
Repeatability	*Nominal 0.2% 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 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	*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.

Part Numbers

Model Number	Description
TSPC-15S-485	*Analog, switch and RS-485 serial interface (allows addressable multi-sensor networks)*
TSPC-15S-485A *	*Same as above but with only RS-485 serial data interface **
TSPC-15S-232	*Analog, switch and RS-232 serial data interface (PC COM port compatible)*
TSPC-15S-232A *	*Same as above but with only RS-232 serial data interface **

* Models with "A" suffix are data communications only; Analog & switch outputs, pushbutton and interface LEDs are removed.
Senix also offers interconnection, communications, mounting and display accessories.

Dimensions

Dimensions in Inches (mm)

1.5 inch NPT thread

4.30 (109)

1.88 (48)

Mechanical

Mounting: 1.5 inch NPT thread, top or bottom

Attached Cable: 6.5ft (2 m)

Total Weight: 22.6 oz. (0.64 kg)