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)

4.30 (109)

1.5 inch NPT thread

1.88 (48)
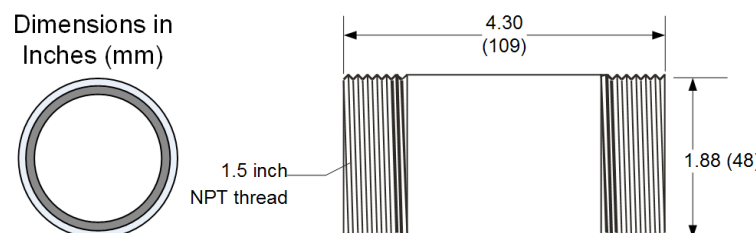
Mechanical

Mounting: 1.5 inch NPT thread, top or bottom

Attached Cable: 6.5ft (2 m)

Total Weight: 22.6 oz. (0.64 kg)