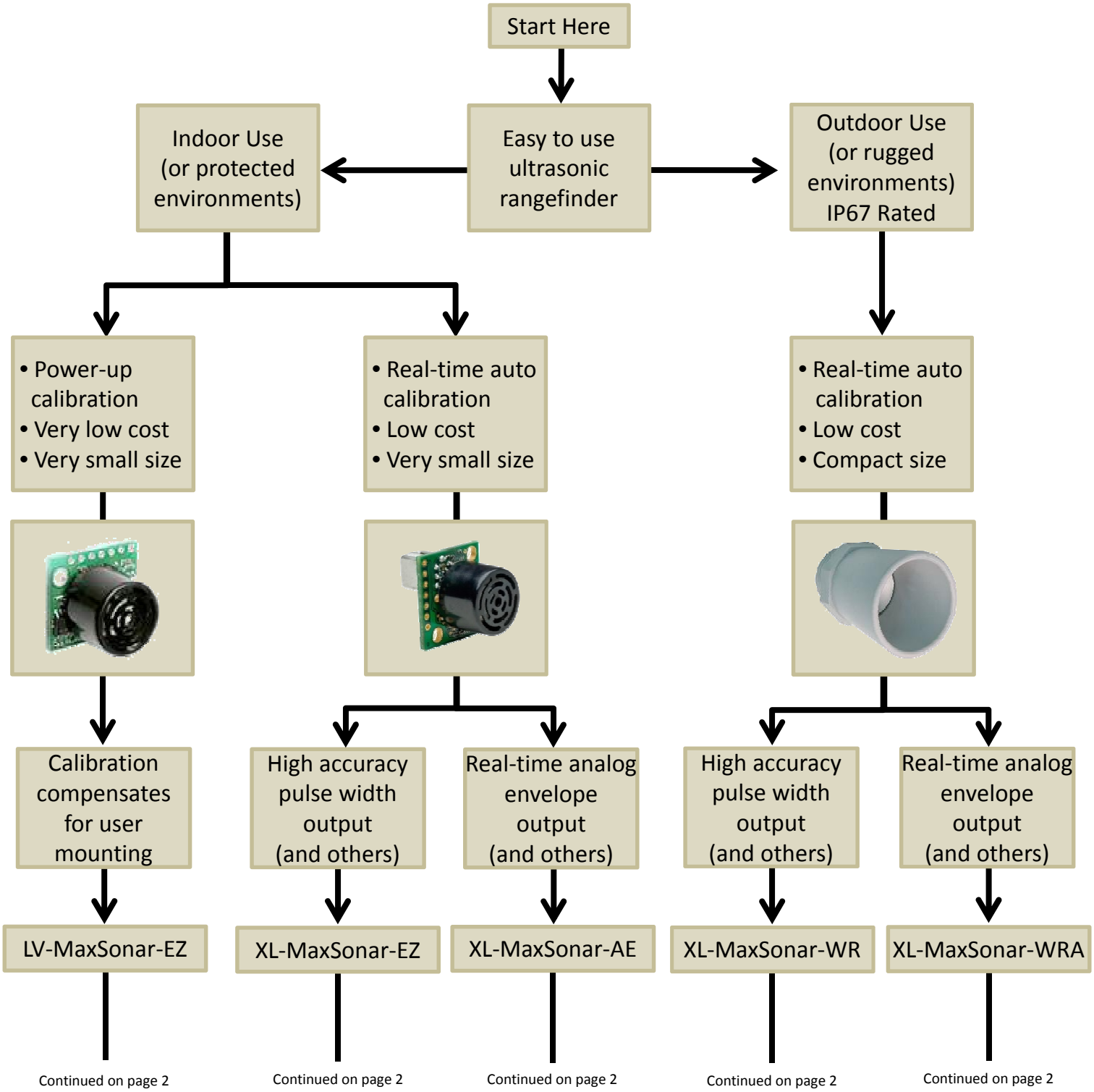
Choose the Proper Ultrasonic Sensor for your Application

This guide will help you select the correct MaxSonar® sensor for your use. We believe that the MaxSonar® sensors are among the easiest to use ultrasonic rangefinders available.



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Product Line

Features

	LV-MaxSonar-EZ	XL-MaxSonar-EZ	XL-MaxSonar-AE	XL-MaxSonar-WR	XL-MaxSonar-WRA
Easy to use interface	Yes	Yes	Yes	Yes	Yes
Trigger or Free-run Operation	Yes	Yes	Yes	Yes	Yes
Stable Range Data	Yes	Yes	Yes	Yes	Yes
Serial Output	Yes	Yes	Yes	Yes	Yes
Analog Voltage Range Output	Yes	Yes	Yes	Yes	Yes
Pulse Width Output	Yes	Yes	No	Yes	No
Real-time Analog Envelope Output of the Acoustic Waveform	No	No	Yes	No	Yes
Outdoor Use (IP67 Rated)	No (can be mounted in a way that protects the sensor from exposure to the elements.)	No (can be mounted in a way that protects the sensor from exposure to the elements.)	No (can be mounted in a way that protects the sensor from exposure to the elements.)	Yes	Yes
Recommended for Industrial Use	Some	Yes	Yes	Yes	Yes
Recommended for Hobby Use	Yes	Yes	Yes	Yes	Yes
Automatic Calibration to Compensate for Changes in Temperature, Voltage, Humidity and Noise.	On power up only	Yes	Yes	Yes	Yes
Has noise canceling	Some	Yes	Yes	Yes	Yes
Resolution	1 inch	1 cm	1 cm	1 cm	1 cm
Maximum Rate Readings are taken	20Hz	10Hz	10Hz	10Hz	10Hz
3.3V Operation, Average Current Draw	1.6mA	2.1mA	2.1mA	2.1mA	2.1mA
5V Operation, Average Current Draw	1.9mA	3.4mA	3.4mA	3.4mA	3.4mA
Acoustic Frequency	42kHz	42kHz	42kHz	42kHz	42kHz
Minimum Object Detection Distance [1]	0 inches	0 cm	0 cm	0 cm	0 cm
Minimum Reported Distance [1]	6 inches	20 cm	20 cm	25 cm	25 cm
Maximum Range	254 inches (6.45 meters)	765 cm [2] 1068cm (25.1 feet)	765 cm [2] 1068cm (25.1 feet)	765 cm [2] 1068cm (25.1 feet)	765 cm [2] 1068cm (25.1 feet)
Semi-custom solution available to meet almost any need	Yes [3]	Yes [3]	Yes [3]	Yes [3]	Yes [3]

Note 1: Objects closer than the minimum-distance-reported*, typically range as this value*.
Note 2: Available by request
Note 3: Contact MaxBotix Inc., to have your sensor solution evaluated.

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LV-MaxSonar-EZ	XL-MaxSonar-EZ	XL-MaxSonar-AE	XL-MaxSonar-WR	XL-MaxSonar-WRA
Some Features: • Easy to use interface •1 inch resolution • Various calibrated beam widths • Size is less than 1 cubic inch	**Some Features:** • Easy to use interface •1 cm resolution • Various calibrated beam widths • Size is less than 1 cubic inch • Real-time auto calibration • Real-time noise rejection • High acoustic power	**Some Features:** • Easy to use interface •1 cm resolution • Various calibrated beam widths • Size is less than 1 cubic inch • Real-time auto calibration • Real-time noise rejection • High acoustic power • Real-time analog envelope	**Some Features:** • Easy to use interface •IP67 rated • 1 cm resolution • Calibrated beam width • Super compact size • Real-time auto calibration • Real-time noise rejection • High acoustic power	**Some Features:** • Easy to use interface •IP67 rated • 1 cm resolution • Calibrated beam width • Super compact size • Real-time auto calibration • Real-time noise rejection • High acoustic power • Real-time analog envelope output
Part Numbers: •MB1000 •MB1010 •MB1020 •MB1030 •MB1040 (Please see additional information on page 4)	**Part Numbers:** •MB1200 •MB1210 •MB1220 •MB1230 •MB1240 (Please see additional information on page 4)	**Part Numbers:** •MB1300 •MB1310 •MB1320 •MB1330 •MB1340 (Please see additional information on page 4)	**Part Numbers:** •MB7060 •MB7066: longer range (Please see additional information on page 4)	**Part Numbers:** •MB7070 •MB7076: Longer range (Please see additional information on page 4)
Possible Applications: • Robots • Distance measuring • UAV • Some industrial uses • Autonomous navigation	**Possible Applications:** • Robots • Distance measuring • UAV • Industrial uses • Autonomous navigation • Bin levels • Changing environment conditions	**Possible Applications:** •Troubleshooting and sensor integration • User signal processing • Robots • Distance measuring • UAV • Industrial uses • Autonomous navigation • Bin levels • Changing environment conditions	**Possible Applications:** • Robots • Distance measuring • Industrial uses •UAV • Autonomous navigation • Bin levels •Changing environment conditions • Tank levels • Proximity zone detection	**Possible Applications:** •Troubleshooting and sensor integration • User signal processing •Robots • Distance measuring • Industrial uses •UAV • Autonomous navigation • Bin levels • Changing environment conditions • Tank levels • Proximity zone detection
Comments: • Power up calibration compensates for various mounting arrangements and environments. For best operation, must be clear for 14” during calibration. • **NOTE:** Requires user to cycle the power to recalibrate sensor if the voltage, temperature or humidity change during operation.	**Comments:** • Automatically compensates for noisy and changing environmental conditions (temperature, voltage or humidity). • Auto calibration will compensate for and detect up close objects.	**Comments:** • Same comments as the XL-MaxSonar-EZ but also allows easy identification of troubleshooting issues using the real-time analog envelope.	**Comments:** • Automatically compensates for noisy and changing environmental conditions (temperature, voltage or humidity). • Auto calibration will compensate for and detect up close objects.	**Comments:** • Same comments as the XL-MaxSonar-WR but also allows easy identification of troubleshooting issues using the real-time analog envelope.
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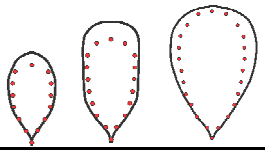
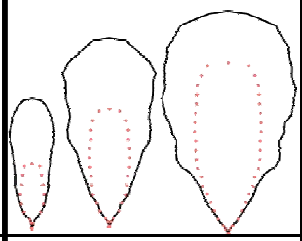
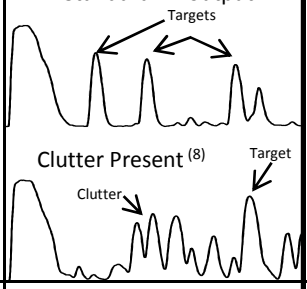
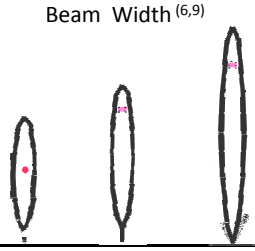
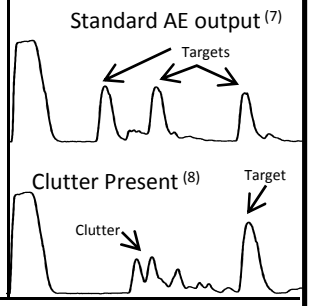
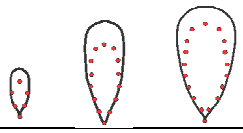
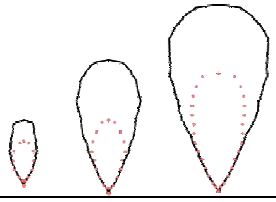
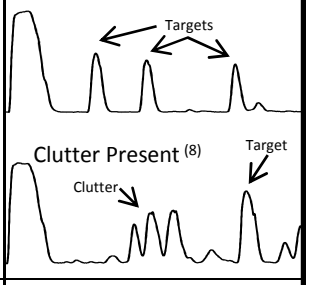
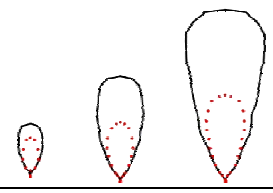
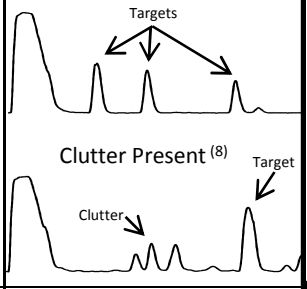
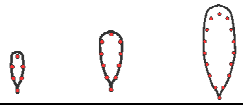
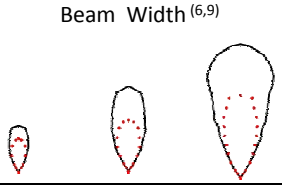
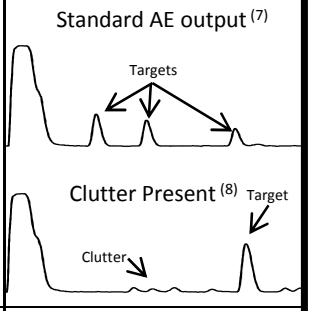
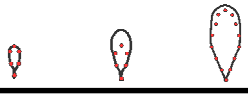
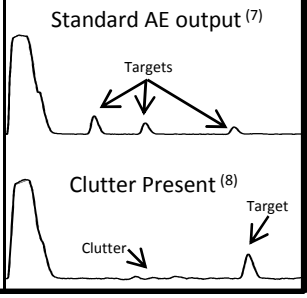
LV-MaxSonar-EZ	XL-MaxSonar-EZ [4]	XL-MaxSonar-AE [4]	XL-MaxSonar-WR [5]	XL-MaxSonar-WRA [5]
MB1000 Beam Width [6,9] 	MB1200 (& MB1300) Beam Width [6,9] 	MB1300 Standard AE output [7] 	MB7060 (& MB7070) Beam Width [6,9] 	MB7070 Standard AE output [7] 
MB1010 Beam Width [6,9] 	MB1210 (& MB1310) Beam Width [6,9] 	MB1310 Standard AE output [7] 	More sensors in WR product line coming soon	
MB1020 Beam Width [6,9] 	MB1220 (& MB1320) Beam Width [6,9] 	MB1320 Standard AE output [7] 		
MB1030 Beam Width [6,9] 	MB1230 (& MB1330) Beam Width [6,9] 	MB1330 Standard AE output [7] 		
MB1040 Beam Width [6,9] 	MB1240 (& MB1340) Beam Width [6,9] 	MB1340 Standard AE output [7] 		

Part Number Selection

This section is designed to help users select the right part number for their application. Use the beam width and analog envelope output to compare the products and select the best sensor for your application.

Note 4: Part Similarities The MB12XX and MB13XX parts have the same operational characteristics except the MB12XX parts have pulse width output and the MB13XX have the real-time analog envelope of the wave form.

Note 5: Part Similarities The MB706X and MB707X part(s) have the same operational characteristics except the MB706X parts have pulse width output and the MB707X have the real-time analog envelope of the wave form.

Note 6: Beam Width Targets are from left to right 0.6cm dia., 2.5cm dia., & 8.9cm dia. Part to part beam widths scale is approximately equal. Black line is 5V, red dot is 3.3V.

Note 7: Standard AE Output Targets are from left to right 0.6cm dia. at 66cm, 2.5cm dia. at 111cm, & 8.9cm dia. at 189cm. Notice the change in amplitude of the signals to compare the various parts.

Note 8: Clutter Present Target is 30cm sq. at 2 meters Conditions are1.5 meter wide hallway with cluttered sides.

Note 9: Custom beam patterns available.

Please download the datasheet(s) from www.maxbotix.com for complete information

MaxBotix® Inc.

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