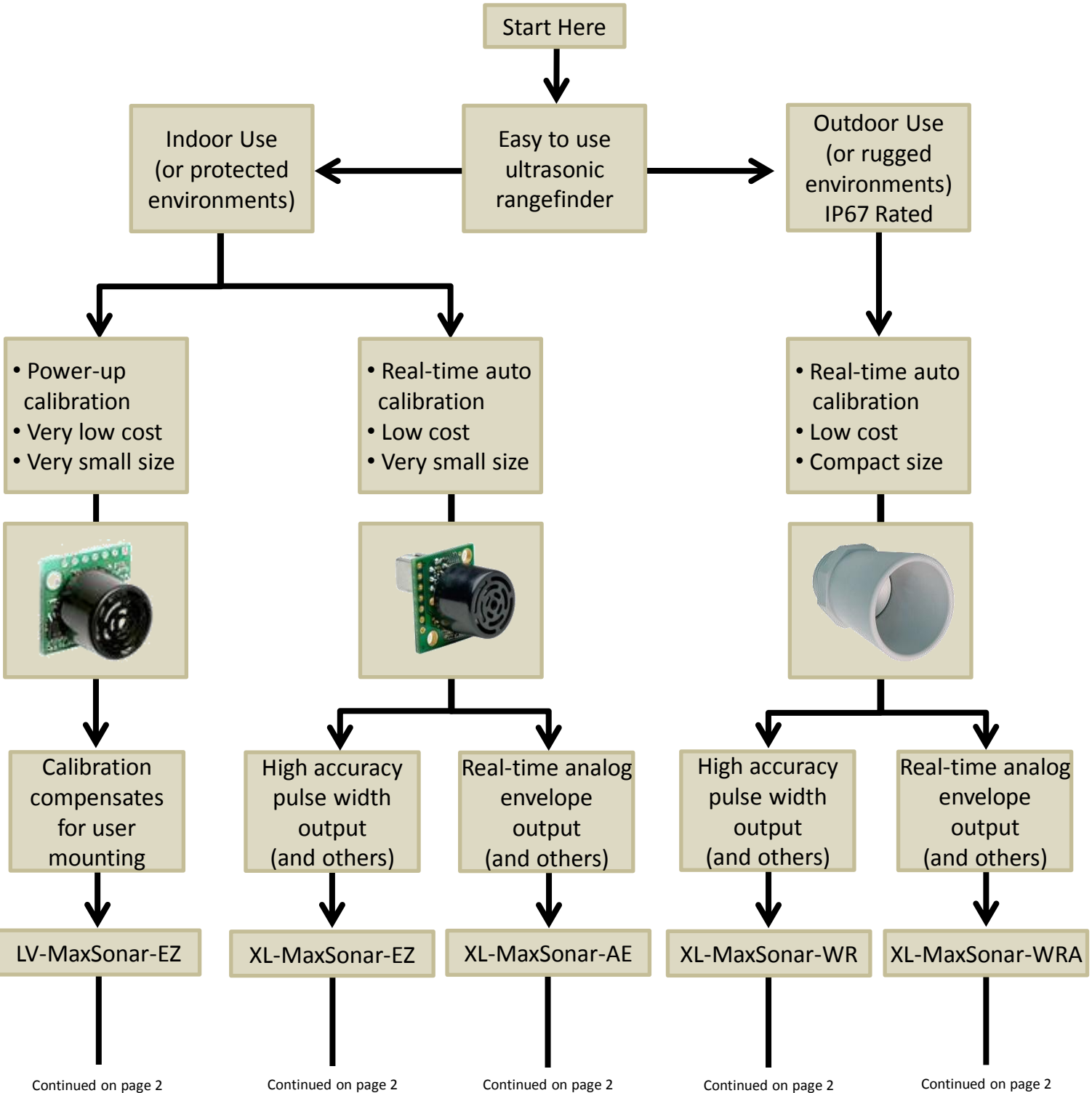


Choose the Proper Ultrasonic Sensor for your Application

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.



Product Line

| |  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 <small>(can be mounted in a way that protects the sensor from exposure to the elements.)</small> | No <small>(can be mounted in a way that protects the sensor from exposure to the elements.)</small> | No <small>(can be mounted in a way that protects the sensor from exposure to the elements.)</small> | 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⁾ |

Features

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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| ↓ | ↓ | ↓ | ↓ | ↓ |
| <p>LV-MaxSonar-EZ Some Features:</p> <ul style="list-style-type: none"> • Easy to use interface • 1 inch resolution • Various calibrated beam widths • Size is less than 1 cubic inch | <p>XL-MaxSonar-EZ Some Features:</p> <ul style="list-style-type: none"> • 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 | <p>XL-MaxSonar-AE Some Features:</p> <ul style="list-style-type: none"> • 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 | <p>XL-MaxSonar-WR Some Features:</p> <ul style="list-style-type: none"> • 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 | <p>XL-MaxSonar-WRA Some Features:</p> <ul style="list-style-type: none"> • 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 |
| <p>Part Numbers:</p> <ul style="list-style-type: none"> •MB1000 •MB1010 •MB1020 •MB1030 •MB1040 <p>(Please see additional information on page 4)</p> | <p>Part Numbers:</p> <ul style="list-style-type: none"> •MB1200 •MB1210 •MB1220 •MB1230 •MB1240 <p>(Please see additional information on page 4)</p> | <p>Part Numbers:</p> <ul style="list-style-type: none"> •MB1300 •MB1310 •MB1320 •MB1330 •MB1340 <p>(Please see additional information on page 4)</p> | <p>Part Numbers:</p> <ul style="list-style-type: none"> •MB7060 •MB7066: longer range <p>(Please see additional information on page 4)</p> | <p>Part Numbers:</p> <ul style="list-style-type: none"> •MB7070 •MB7076: Longer range <p>(Please see additional information on page 4)</p> |
| <p>Possible Applications:</p> <ul style="list-style-type: none"> • Robots • Distance measuring • UAV • Some industrial uses • Autonomous navigation | <p>Possible Applications:</p> <ul style="list-style-type: none"> • Robots • Distance measuring • UAV • Industrial uses • Autonomous navigation • Bin levels • Changing environment conditions | <p>Possible Applications:</p> <ul style="list-style-type: none"> • Troubleshooting and sensor integration • User signal processing • Robots • Distance measuring • Industrial uses • UAV • Autonomous navigation • Bin levels • Changing environment conditions | <p>Possible Applications:</p> <ul style="list-style-type: none"> • Robots • Distance measuring • Industrial uses • UAV • Autonomous navigation • Bin levels • Changing environment conditions • Tank levels • Proximity zone detection | <p>Possible Applications:</p> <ul style="list-style-type: none"> • 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 |
| <p>Comments:</p> <ul style="list-style-type: none"> • 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. | <p>Comments:</p> <ul style="list-style-type: none"> • Automatically compensates for noisy and changing environmental conditions (temperature, voltage or humidity). • Auto calibration will compensate for and detect up close objects. | <p>Comments:</p> <ul style="list-style-type: none"> • Same comments as the XL-MaxSonar-EZ but also allows easy identification of troubleshooting issues using the real-time analog envelope. | <p>Comments:</p> <ul style="list-style-type: none"> • Automatically compensates for noisy and changing environmental conditions (temperature, voltage or humidity). • Auto calibration will compensate for and detect up close objects. | <p>Comments:</p> <ul style="list-style-type: none"> • 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 Beam Width ^(6,9) | MB1300 Standard AE output ⁽⁷⁾ Targets Clutter Present ⁽⁸⁾ Target Clutter | MB7060 Beam Width ^(6,9) | MB7070 Standard AE output ⁽⁷⁾ Targets Clutter Present ⁽⁸⁾ Target Clutter |
| MB1010 Beam Width ^(6,9) | MB1210 Beam Width ^(6,9) | MB1310 Standard AE output ⁽⁷⁾ Targets Clutter Present ⁽⁸⁾ Target Clutter | More sensors in WR product line coming soon | |
| MB1020 Beam Width ^(6,9) | MB1220 Beam Width ^(6,9) | MB1320 Standard AE output ⁽⁷⁾ Targets Clutter Present ⁽⁸⁾ Target Clutter | | |
| MB1030 Beam Width ^(6,9) | MB1230 Beam Width ^(6,9) | MB1330 Standard AE output ⁽⁷⁾ Targets Clutter Present ⁽⁸⁾ Target Clutter | | |
| MB1040 Beam Width ^(6,9) | MB1240 Beam Width ^(6,9) | MB1340 Standard AE output ⁽⁷⁾ Targets Clutter Present ⁽⁸⁾ Target Clutter | <h2>Part Number Selection</h2> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Note 8: Clutter Present Target is 30cm sq. at 2 meters Conditions are 1.5 meter wide hallway with cluttered sides.</p> <p>Note 9: Custom beam patterns available.</p> | |

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