

Tech Support

| Written By: Dan Alcox | Date Posted: 02-18-2016 |

Key Takeaways

- FAQs by Tech Support
- Tips for sensor selection
- Troubleshooting tips

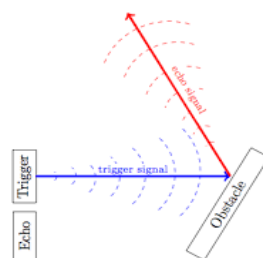
Technical support services help solve sensor problems, wiring, and mounting as well as application-based sensor selection. Technical support for MaxBotix Inc., may be delivered over the phone (218-454-0766 ext 2), by e-mail (techsupport@maxbotix.com), or by the [contact tab](#) on the MaxBotix Inc., webpage.

Details Needed by Tech Support

Whether you are getting false readings, no readings, or erratic readings, tech support may require additional information to help you move forward. Often you may be asked to send pictures or answer some additional questions such as the following:

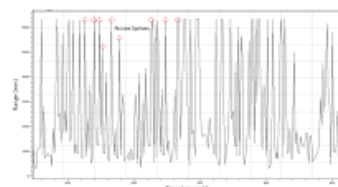
1. Can you send a picture of how the sensor is mounted?

This lets us see if the sensor is properly mounted, as the sensor needs to be perpendicular to the target area. A sensor that is at an angle to a target causes the sound wave to bounce off the target and travel away from the sensor. This makes it much more difficult to range correctly. Additionally, we may be able to identify additional obstacle(s) that the sensor is ranging instead of your intended target.



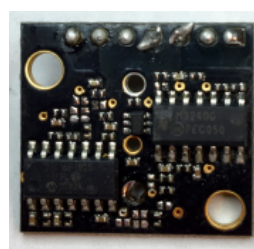
2. Can you send a copy of the logged range data file?

The frequency and even the appearance of the erratic readings when graphed against time can provide useful information for troubleshooting. Unstable readings may indicate electrical, mechanical, or acoustic noise.



3. Can you send pictures of how the sensor is wired?

We can look to make sure the sensor is properly soldered and that all the wires are placed in the right outputs. Too much solder is an unnecessary waste and may cause short circuits with adjacent joints. Too little, and it may not support the component properly, or may not fully form a working joint.



4. At what voltage are you operating the sensor?



MaxBotix Inc., Makes Inc. 5000 List For Second Time

Author: Kathy Kostal Date: 08-31-2016



Inc. Magazine Unveils 35th Annual List of America's Fastest Growing Private Companies—the Inc. 5000. MaxBotix Inc., Ranks No. 1752 on the 2016 Inc. 5000 with Three-Year Sales

Growth of 213%.
[Click here](#) for full article.

Raspberry Pi TTL Tutorial

Author: Cody Carlson Date: 08-02-2016



MaxSonar sensors offer a variety of outputs including TTL serial data. This tutorial guides you through the process of setting up your Raspberry Pi 3 with a MaxBotix sensor. [Click here](#) for full article.

Packaging Options for the MaxSonar Sensors

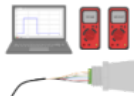
Author: Scott Wielenberg Date: 07-26-2016



MaxBotix offers an expanded range of packaging options for many of our sensors. Each option provides unique benefits to certain mounting integrations. This article provides a brief overview of each option. [Click here](#) for full article.

The MaxBotix RMA Process Guide

Author: Scott Wielenberg Date: 07-18-2016



When providing support, our technical support team may determine that further testing at our facility is the best way to help resolve the issue that you are facing. At this point, they will start the Return Merchandise Authorization (RMA) process. This article will explain what you can expect as your ultrasonic sensor travels through our RMA process.

[Click here](#) for full article.

Important Considerations for Using an Ultrasonic Sensor Inside of a Pipe

Author: Scott Wielenberg Date: 07-11-2016



Many customers have requested the option to mount an ultrasonic sensor in a pipe. During the testing and development cycle, we discovered a number of considerations and requirements that must be met for the application to be successful. When all of these are met, a user may be able to achieve the desired level of success for measuring the liquid level inside of a pipe.

[Click here](#) for full article.

Grand Opening of Facility Expansion

Author: Jenney Grover Date: 06-28-2016



On April 19th, we welcomed our supporters to join us for the Grand Opening of the Build Out. Bob and Nita Gross gave a tour of the build out and their vision for the space. We continue to be in awe of the support from our community, our employees, our distributors, and our customers. Thank you for the many years of support, and we look forward to serving you in the years to come.

[Click here](#) for full article.

News Archive

New Product Signup

Signup for notification of our exciting new products and periodic new letters. We are excited to provide the latest information from MaxBotix Inc.

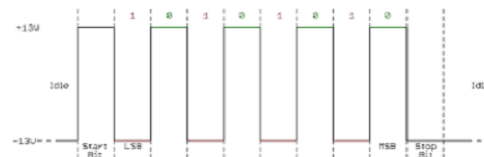
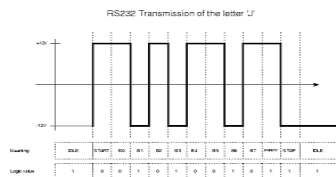
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Our sensors operational voltages range from 2.5VDC to 5.5VDC for most sensors. One notable exception is the 4-20mA sensors which have an operational voltage of 10VDC to 32VDC. If a sensor is operated at a higher voltage than specified it may become damaged due to overvoltage.



5. What output are you reading?

Across all of our product lines our available sensor outputs are: PW, AN, AE, Serial (RS232), TTL (UART), USB, I2C, 4-20mA. Problems reading the sensor can sometimes be as simple as reading the wrong output. Your sensor may output 0-Vcc RS232, but your micro-controller is expecting TTL data format.



6. Is more than one sensor operating simultaneously?

For certain sensors, running more than one sensor in a given environment is only possible by running in triggered operation mode. The self-cleaning sensors are not intended for multi-sensor applications. You may be having unstable or erratic readings when chaining certain sensors. This may be due to the interference from other sensors.



Try these tips before contacting tech support

1. Check your wiring:

Are all wires in the proper outputs on the sensor board? Are wires properly soldered to board?

2. Make sure your micro-controller is working properly:

Make sure the proper voltage is applied to the controller, also check to make sure your sensor is correctly wired into controller. Are you programming a sensor to take readings faster than specified in the datasheet? Our fastest sensor takes readings once every 50ms and many of our products expect at least a 100ms delay for reading time.

3. Check your mounting:

Make sure that there are no obstructions in front of the sensor, also If the sensor is not mounted perpendicular to your target you may get inaccurate readings.

4. If the sensor stops working when the temperature drops:

When using WR sensors in areas that experience temperature swings, you may notice false or inconsistent readings due to the change. All of our high resolution (HR), self cleaning (SC), and 4-20mA parts have internal temperature compensation, but there can be widely varying temperatures in air masses. As such this may decrease the accuracy of the reading as the temperature is measured within the part. To help account for a more accurate idea of the average temperature of the system we recommend using an HR-MaxTemp, an external temperature sensor, which is used to provide a better idea of the environmental temperature.

5. Look at the datasheet:

The datasheet has all the information about the sensor from beam patterns, output formats, applications, and uses to general characteristics.

6. Check the Maxbotix Inc., Website:

The MaxBotix Inc., website <http://www.maxbotix.com/> is full of information to help with troubleshooting and sensor selection. The website also has tutorials and application notes along with articles for set-up and answers to frequently asked questions.

7. Make sure the sensor face is clear:

At times dust, dirt, salt water residue, snow, even small bugs and caterpillar cocoons have been known to cause a WR sensor to give false readings. Make sure sensor face is clean and bug free.

While problems with a sensor may occur, the technical support team at MaxBotix Inc., is here to help, whether your problem is large or small. Technical support will do whatever it takes to get you back to working on your application.

Information Needed for Sensor Selection

If you need help with sensor selection, you will be asked the following questions. Because we have such a wide variety of outdoor, indoor, short range, and long range sensors, answering all of the questions to the best of your ability will give us a better chance of finding a sensor that meets your needs.

1. Will the sensor be used in a protected environment? A "non-protected environment" is any environment in which the sensor is being used in harsh conditions. This can include, but is not limited to: rain, snow, dense fog, heavy dust.
2. Is there a chance that condensation or frost will form on the sensor?
3. What are the minimum and maximum range requirements for your operation?
4. What is the desired read/refresh rate for your application?
5. Do you have a preferred sensor resolution? Our sensors report distance in the following resolutions: inches, centimeters, and millimeters. [Resolution, Precision, & Accuracy](#)
6. Do you have a preferred sensor output? (RS232 UART, TTL, I2C, Pulse-Width, Analog Voltage, Analog Envelope, 4-20mA)
7. What is the sensor's target? How large is the target? Is it acoustically soft or hard? [Methods to Conceal an Ultrasonic Sensor: The use of acoustically transparent materials](#)
8. At what voltage level do you plan to operate the sensor?
9. Can you briefly define your application, and what type of sensor performance would make your application successful?

[Contact our technical support team](#) if you need any additional help or have any questions about sensor selection or technical support. We are here to help you succeed.

Products related to the Article Above

[I2CXL-MaxSonar-WR](#)



[MB8450 Car Detection Sensor](#)



[I2CXL-MaxSonar-EZ0](#)



Articles related to the Article Above

[LV-MaxSonar-EZ® Quick Start Guide](#)



[MaxSonar® Troubleshooting Guide](#)



[Reading MaxSonar® Sensor Beam Patterns](#)

