Tank - Ultrasonic Sensor

Assembly Instructions

Attaching the ultrasonic sensor is described in this manual. Just a few simple steps and the sensor is on the Tank!

Contents

Motivation

Do you have your robotic tank built, but want to take your project a step further? That's why we have this kit, which allows you to attach an ultrasonic sensor to your robotic tank. Its key feature is detecting the distance from an obstacle. This allows you to design an entirely new way of controlling the tank.

What can you do with it?

The ultrasonic sensor can detect not only the presence of an obstacle but also its distance. The obstacle can be, for example, your hand, and the tank can then literally obey your commands. The tank with the MB1 expansion board is equipped with its own LED strip, which can be used to visualize the measured data when using the ultrasonic sensor!

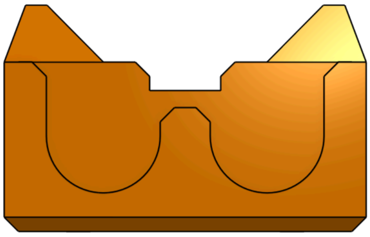
What is the ultrasonic sensor good for?

- Detection of the presence of an obstacle
- Recognition of the distance to an object

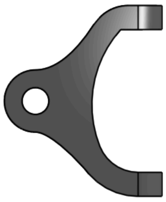
Required Components

3D Parts

Ultrasonic holder
1 pc

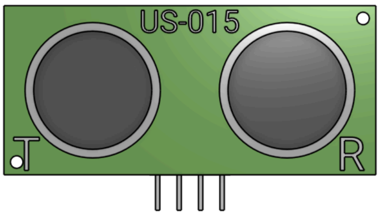


Adapter for ultrasonic holder
1 pc

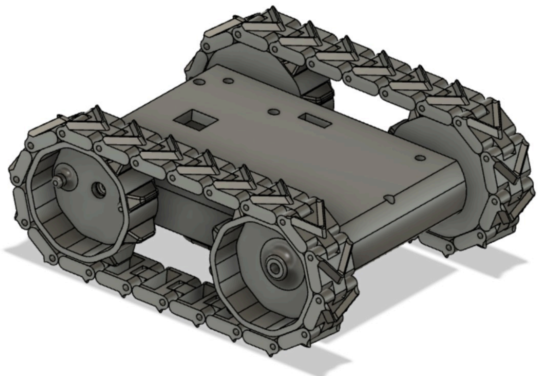


Electronic Components

Ultrasonic sensor
1 pc

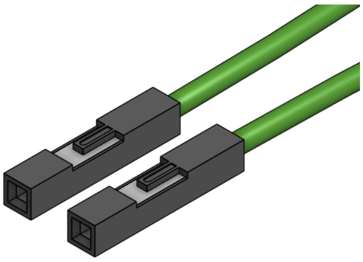


OMG Robotics robotic tank
1 pc



Wires

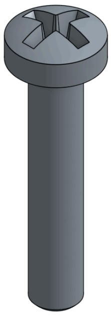
Dupont FF
4 pcs



Mechanical Parts

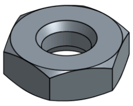
Screw M3x20

1 pc



Nut M3

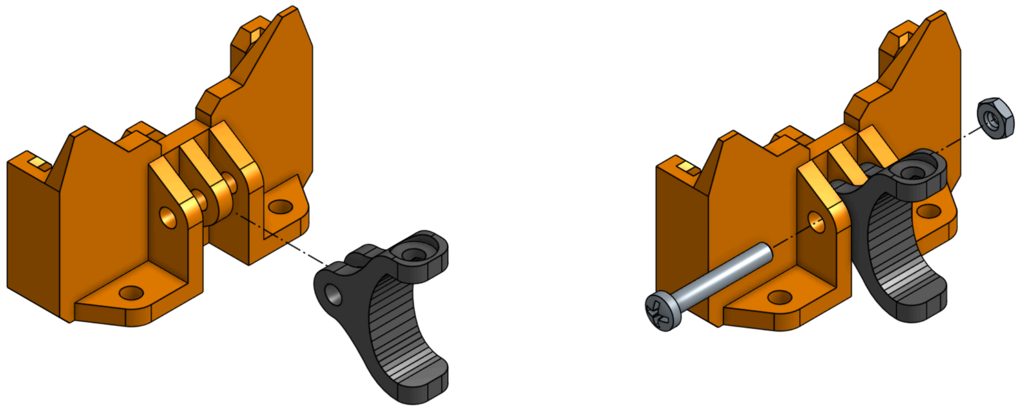
1 pc



Assembly

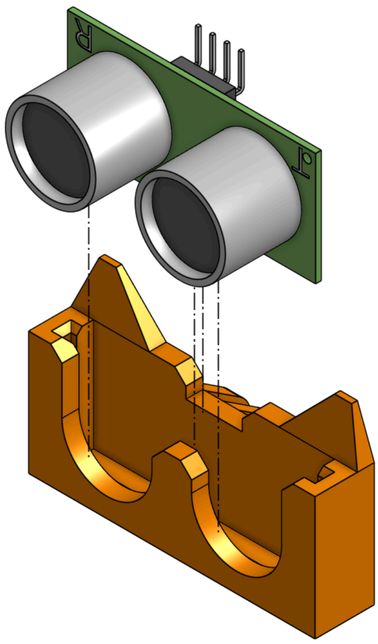
1. Attaching the holder to the adapter

- Insert the adapter into the holder and attach it with an M3x20 screw and an M3 nut on the other side.



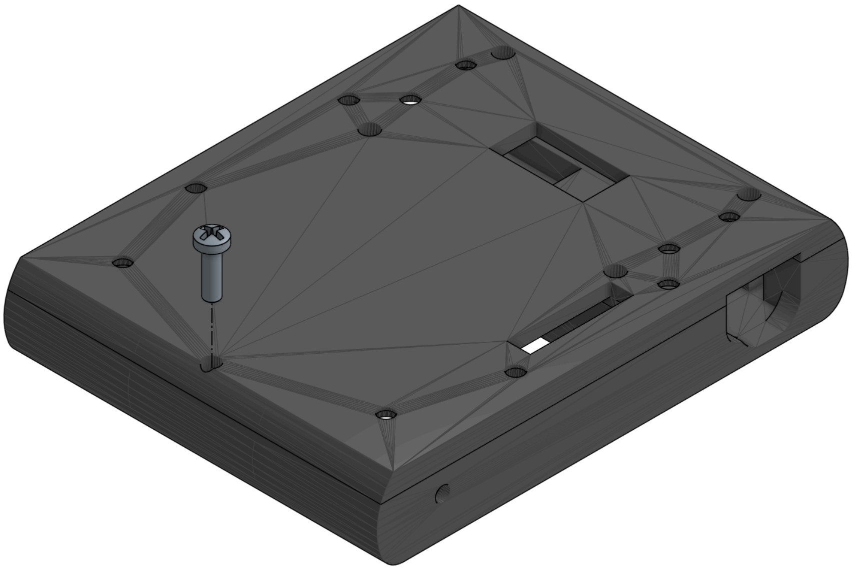
2. Inserting the ultrasonic sensor into the holder

- The ultrasonic sensor is held only by inserting it into the grooves. Insert it as deep as it will go.

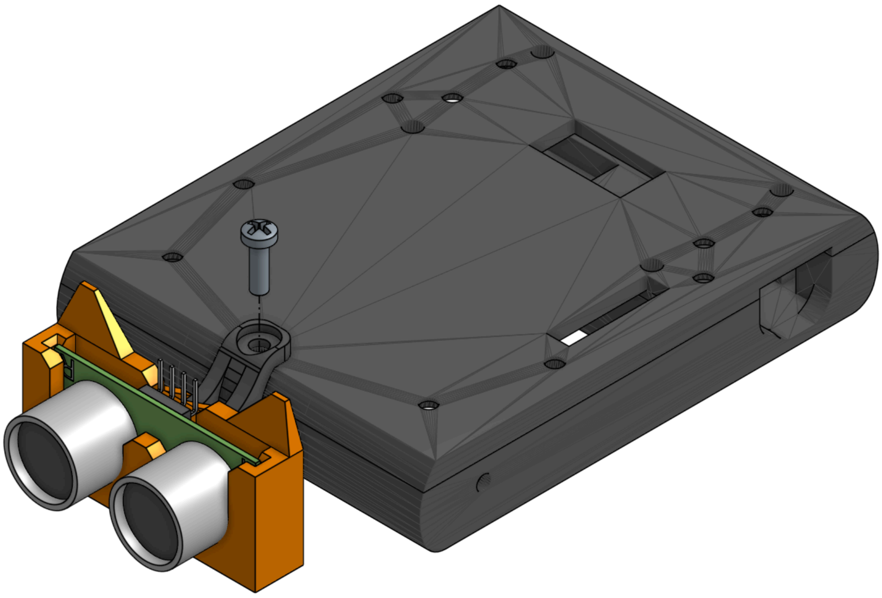


3. Attaching to the tank

- There is only one M3x10 screw on one side of the tank. First, unscrew it.



- Then slide the equipped adapter in and finally tighten with the original M3x10 screw.



Wiring

You can find the wiring in the diagram below. In this case, the type of expansion board does not matter. Just follow these rules:

- Connect the VCC pin (sensor) on the sensor to the white power rail 3V3 (expansion board)
- Connect the GND pin (sensor) to the black power rail GND (expansion board)
- Connect the Trig pin to pin P15
- Connect the Echo pin to pin P14

Leave the servo motor connections as they were originally, or check them with the tank assembly manual.

Wiring Diagram