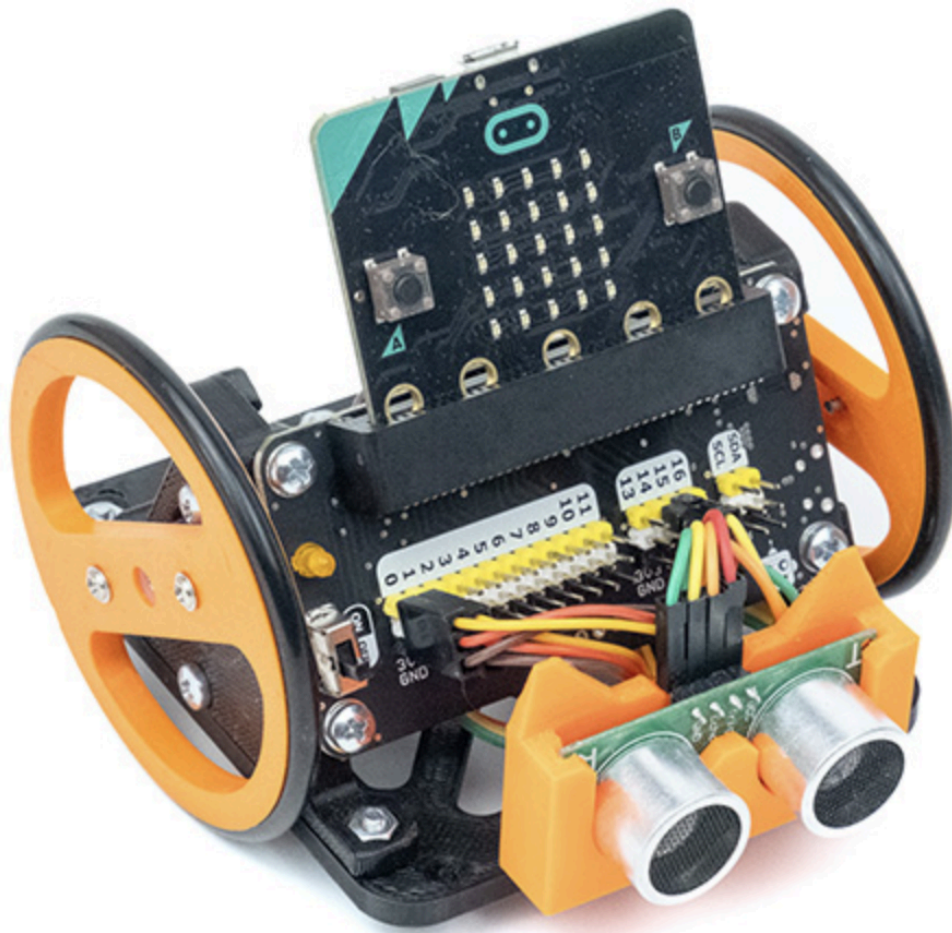


Simple Car – Ultrasonic Sensor

Introduction

This manual describes how to mount the ultrasonic sensor. With just a few simple steps, the sensor can be installed on the vehicle.



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Motivation

A simple robotic vehicle has already been assembled – now the project can be taken to the next level. With this add-on module, an ultrasonic sensor can be mounted on the vehicle. Its most important function is distance measurement to obstacles, enabling a completely new way of controlling the vehicle.

What Can It Do?

An ultrasonic sensor detects not only the presence of an obstacle but also its distance. An example of an obstacle could be a hand – allowing the vehicle to react specifically to external stimuli.

What Is the Ultrasonic Sensor Used For?

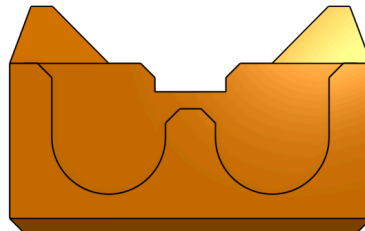
- Detecting the presence of an obstacle
- Measuring the distance to objects

Required Components

3D-printed parts

Ultrasonic sensor holder

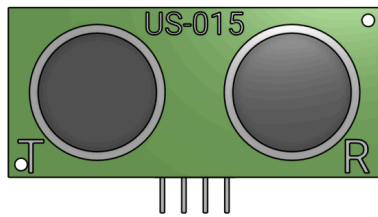
1 pc



Electronic components

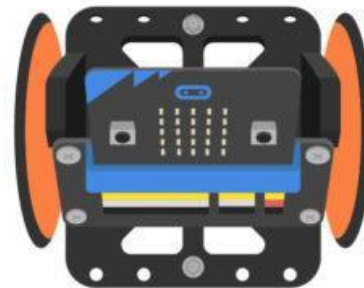
Ultrasonic sensor

1 pc



OMG Robotics – Simple Car

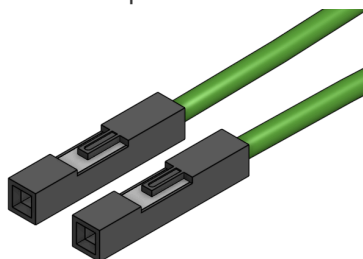
1 pc



Cables

Dupont cable FF (female–female)

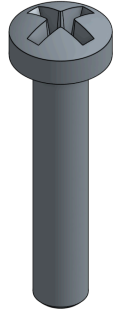
4 pcs



Mechanical parts

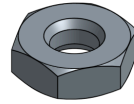
Screw M3×10

2 pcs



Nut M3

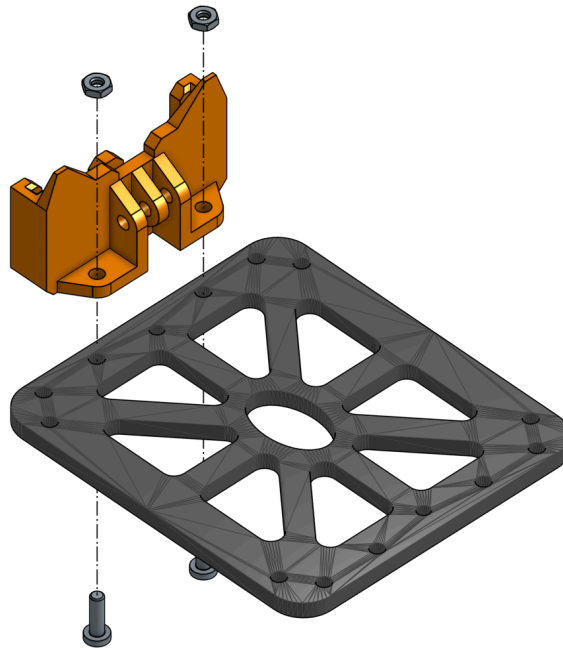
2 pcs



Assembly

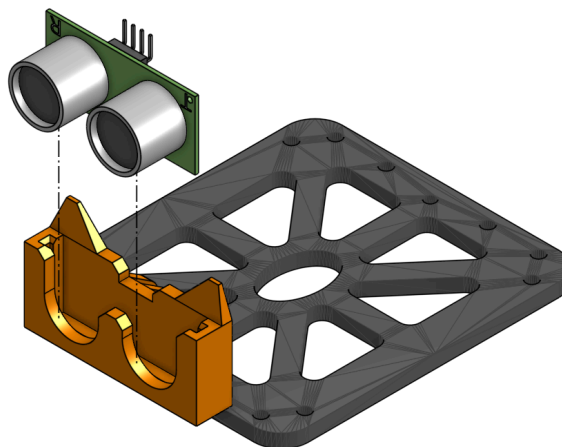
1. Mounting the Holder on the Base Plate

- Fasten the holder to the base plate of the vehicle using two M3×10 screws and two M3 nuts. The illustration shows only the base plate, but the holder can also be mounted directly on the fully assembled vehicle.



2. Inserting the Ultrasonic Sensor into the Holder

- Simply slide the ultrasonic sensor into the designated slots of the holder. It should be inserted as far as possible to ensure a secure fit.



Connection

The connection is shown in the circuit diagram below. It does not matter which expansion board is used – the following rules must be observed:

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

The wiring of the servo motors remains unchanged. If necessary, it can be checked using the assembly instructions for the Simple Car.

Circuit Diagram

