

ELE Prototyping

Hardware-Spezifikation

K. Rother

Pin configuration

- Motor Driver:
 - ENA: Pin 10
 - In1: Pin 9
 - In2: Pin 8
 - In3: Pin 7
 - In4: Pin 6
 - ENB: Pin 5
- Ultrasonic Sensor:
 - GND: Breadboard -
 - Echo: Pin 13
 - Trig: Pin 12
 - VCC: Breadboard +

Pin configuration

- 2 line sensors are used
 - Scenario one: both sensors must detect the (black) line to move forward
 - Scenario two: both sensors must not detect the line to move forward
- Line Sensor:
 - G: Breadboard -
 - V: Breadboard +
 - S: Pin 2
- Line Sensor 2 [Optional]:
 - G: Breadboard -
 - V: Breadboard +
 - S: Pin 4

Microcontroller

- Arduino Uno Wifi R2
- Specs: https://cdn-reichelt.de/documents/datenblatt/A300/ARDUINO_UNO_REV2_DB-EN.pdf



Image Source: <https://www.reichelt.de/arduino-uno-wifi-rev2-atmega-4809-arduino-uno-rev2-p248661.html?search=Arduino+UNO+WiFi+Rev2%2C+ATMega+4809>

Power

- LiPo 11.1 V 3200 mAh
- Specs: <https://asset.conrad.com/media10/add/160267/c1/-/en/001414162SD01/sicherheitsdatenblatt-1414162-conrad-energy-modellbau-akkupack-lipo-111-v-3200-mah-zellen-zahl-3-20-c-box-hardcase-t-buchse.pdf>



Motors

- 2x Modelcraft RB 35 gearbox with motor (1:30)
- Specs: <https://asset.conrad.com/media10/add/160267/c1/-/gl/000227544DS01/datenblatt-227544-modelcraft-rb350030-0a101r-getriebemotor-12-v-130.pdf>



Motor Driver

- SBC-MotoDriver2 (L298N)
- Specs: <https://asset.conrad.com/media10/add/160267/c1/-/en/001573541ML02/bedienungsanleitung-1573541-joy-it-motormodul-2-u-4-phasen-6-bis-12v.pdf>

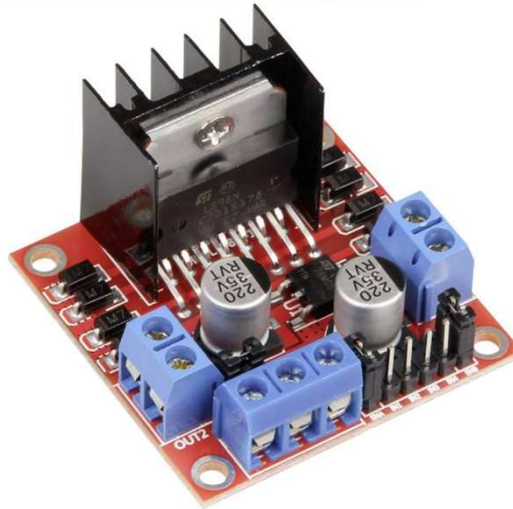


Image Source: <https://www.conrad.de/de/p/joy-it-motormodul-2-u-4-phasen-6-bis-12v-1573541.html>

Line Sensor

- Irduino line tracking module (ST1140)
- Specs: <https://cdn-reichelt.de/documents/datenblatt/C200/ST1140.pdf>

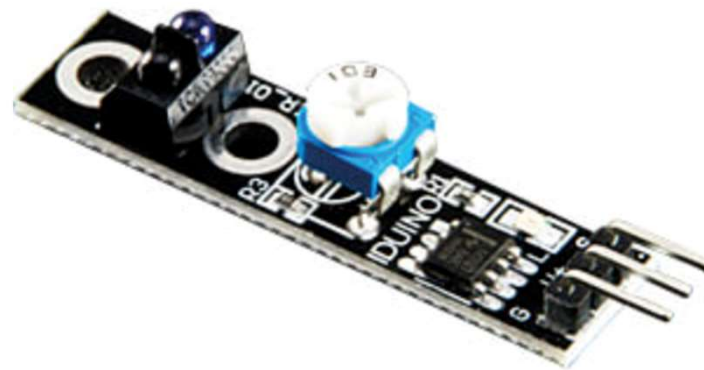


Image Source: https://www.reichelt.de/arduino-ir-linienfinder-ard-line-finder1-p282520.html?&trstct=pos_0&nbc=1

Ultrasonic Sensor

- Iduino ST1099 (HC SR-04)
- Specs: <https://asset.conrad.com/media10/add/160267/c1/-/en/001616245ML01/bedienungsanleitung-1616245-iduino-st1099-ultraschallsensor-1-st.pdf>



RGB Color Sensor

- ARD Color Sensor (TCS3200)
- Specs: https://cdn-reichelt.de/documents/datenblatt/A300/SEN-COLOR_ANL.pdf



Image Source: <https://www.reichelt.de/arduino-farbsensor-fuer-arduino-tcs3200-ard-color-sensor-p192148.html?search=Arduino+-+Farbsensor+f%C3%BCr+Arduino%2C+TCS3200>