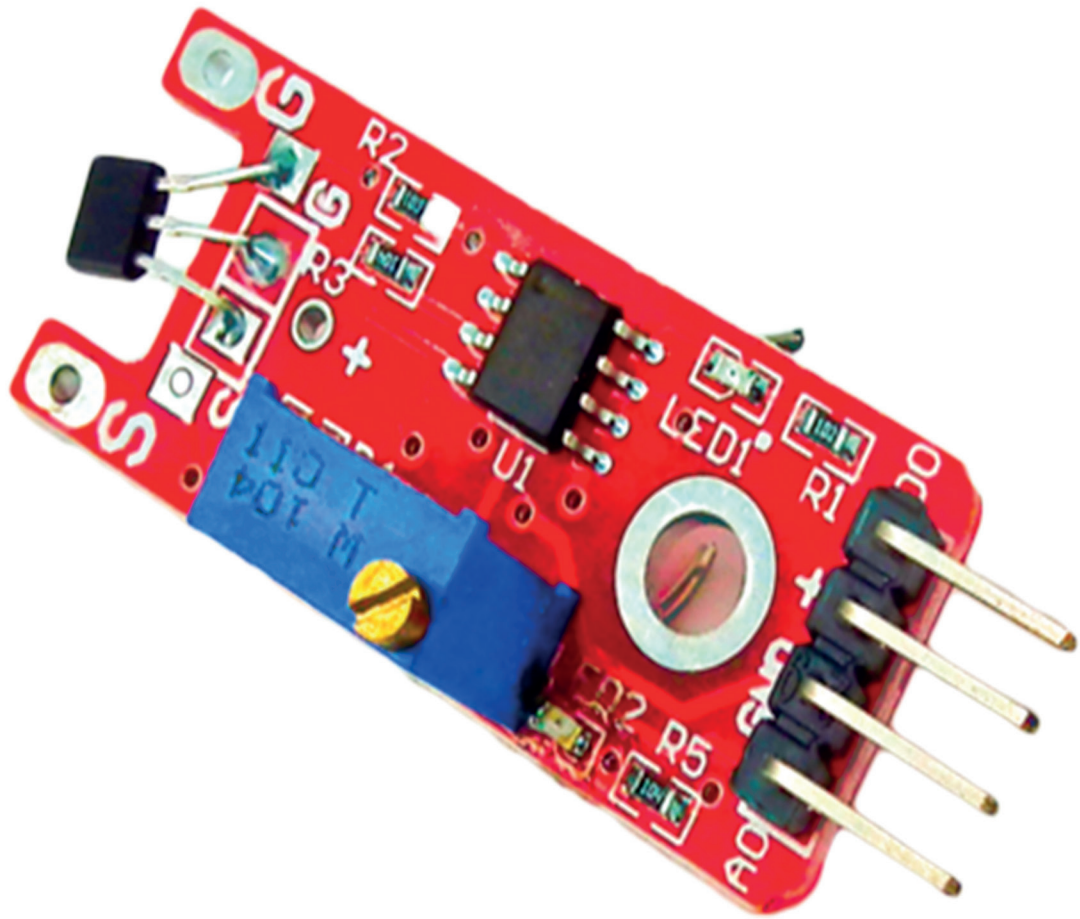


Hall Sensor Modul Datenblatt



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1. Short description

Chipset: A3141 | OP-amplifier: LM393

A magnetic field is detected by the sensor and will be printed as an analog voltage value. You can control the sensitivity of the sensor with the potentiometer.

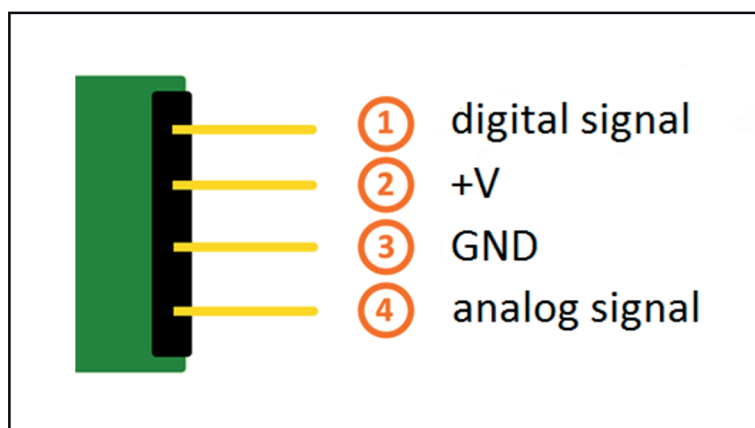
Digital out: If a magnetic field is detected by the sensor, a signal will be printed here

Analog out: Direct measurement of the sensor unit

LED1: Shows that the sensor is supplied with voltage

LED2: Shows that the sensor detects a magnetic field

2. Pinout



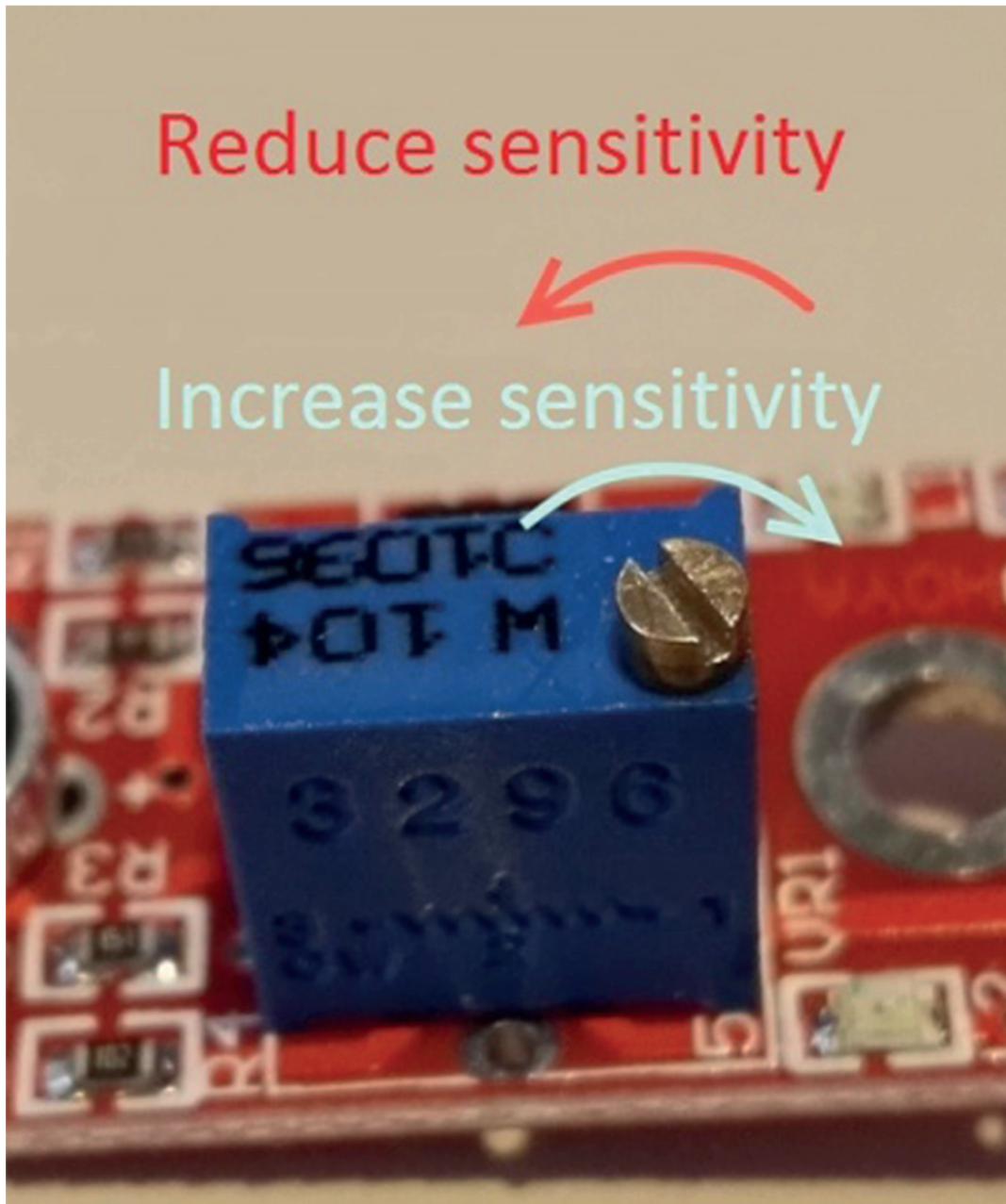
3. Functionality of the sensor

The sensor has 3 main components on its circuit board. First, the sensor unit at the front of the module which measures the area physically and sends an analog signal to the second unit, the amplifier. The amplifier amplifies the signal, according to the resistant value of the potentiometer, and sends the signal to the analog output of the module.

The third component is a comparator which switches the digital out and the LED if the signal falls under a specific value.

You can control the sensitivity by adjusting the potentiometer.

Please notice: The signal will be inverted; that means that if you measure a high value, it is shown as a low voltage value at the analog output.



This sensor doesn't show absolute values (like exact temperature in °C or magnetic field strength in mT).

It is a relative measurement: you define an extreme value to a given normal environment situation and a signal will be sent if the measurement exceeds the extreme value.

It is perfect for temperature control (KY-028), proximity switch (KY-024, KY-025, KY-036), detecting alarms (KY-037, KY-038) or rotary encoder (KY-026).

4. Connections Arduino

digital signal = [Pin 3]

+V= [Pin 5V]

GND = [Pin GND]

analog signal = [Pin 0]

5. Connections Raspberry Pi

Sensor

digital signal = GPIO 24 [Pin 18 (RPi)]

+V = 3,3V [Pin 1 (RPi)]

GND= GND[Pin 06 (RPi)]

analog signal = Analog 0 [Pin A0 (ADS1115 - KY-053)]

ADS1115 - KY-053:

VDD=3,3V [Pin 01]

GND= GND[Pin 09]

SCL = GPIO03 / SCL [Pin 05]

SDA= GPIO02 / SDA [Pin 03]

A0 = look above [Sensor: analog signal]