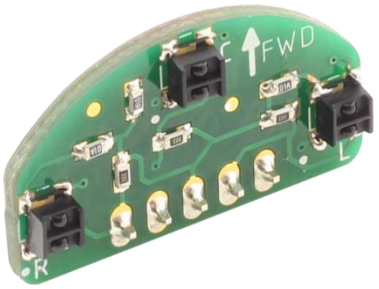
Autonomous Robotics Platform - Line Following Board

TECHNOLOGY DATA SHEET & SPECIFICATIONS

The Kitronik Autonomous Robotics Line following sensor board adds line following sensors to a project. The 3 LED / phototransistor sensors output an analog voltage that can be read into a microprocessor's ADC channel.

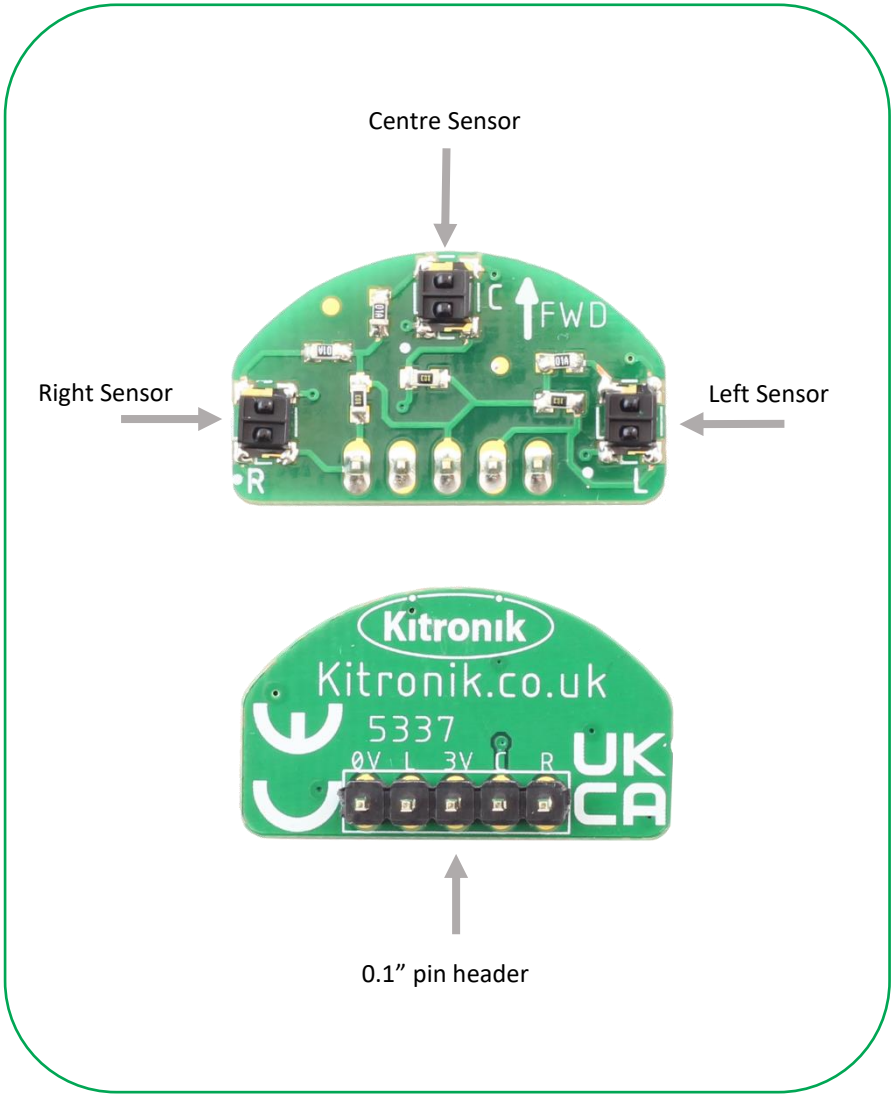
Connections: The 5 pin connections are on a standard 0.1" (2.54mm) pitch. The pins provide connections for power (3v and 0V) and 3 sensor outputs, marked L, C, and R for the left, centre and right sensors respectively.

Power Supply: The board requires 3V-5V supply (typically 3.3V) and a ground connection onto the pin header. These pins are marked on the board as 3V and 0V.



Sensor output: The sensor output voltage changes from the supply voltage to 0V as the sensors pass over light and dark surfaces. Different surfaces will reflect different amounts. A typical light surface will give a value of 0.5V for example. A typical dark surface will give a value of 2.5V (assuming a 3V VCC). The value in a program will depend on the processors ADC range and width.

Surface	Response
Light	Low Voltage ~ 0V
Dark	High Voltage ~ 3V



Electrical Information

Typical Operating Voltage (Vcc Typ)	3V
Max Operating Voltage (Vcc Max)	5V
Typical Current draw at 3V / 5V	60mA / 115 mA
Sensor voltage output range	0V (light surface) - Vcc (dark surface)
Breakout pins	0V – Ground L – Left sensor 3V – Vcc C – Centre sensor R – Right sensor

Example Python Code

An example of typical line following code can be found on our GitHub page from:

https://github.com/KitronikLtd/Kitronik-Pico-Autonomous-Robotics-Platform-MicroPython

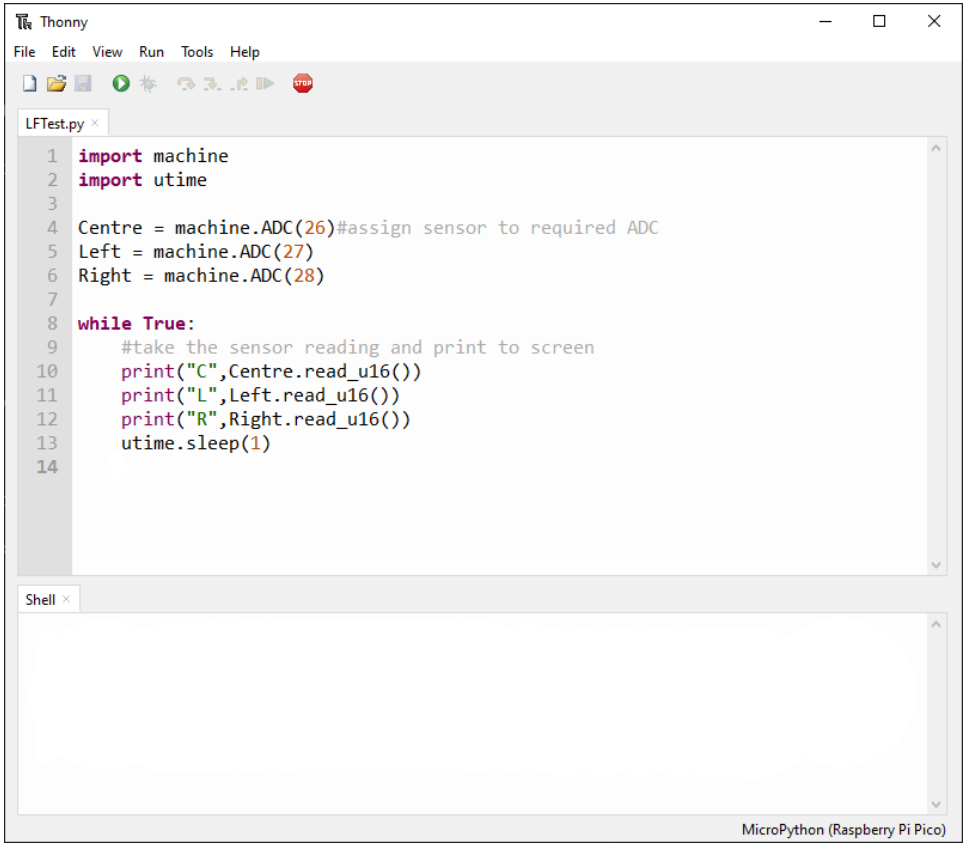
This example is in micro python for the Raspberry Pi Pico.
The board can also be used with an Arduino or BBC micro:bit.

In the example the sensors are connected to Pico ADC pins (GP26,27 and 28).

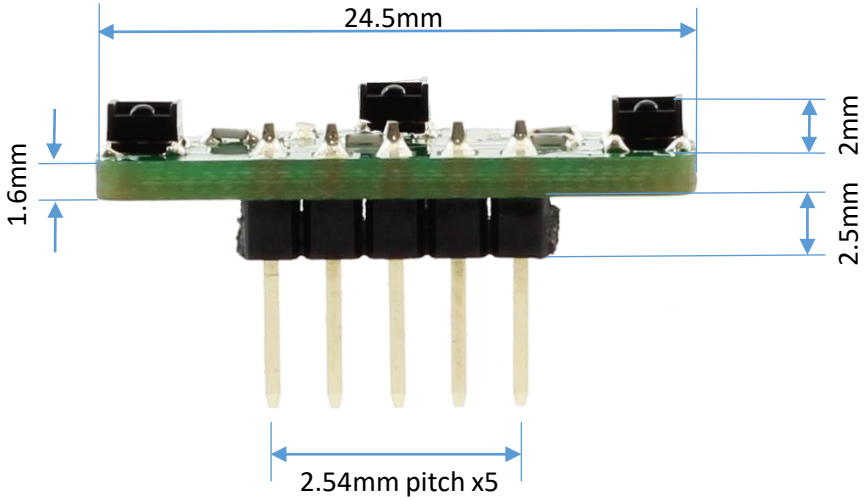
The while loop constantly takes a reading from each sensor and prints the value to the shell .

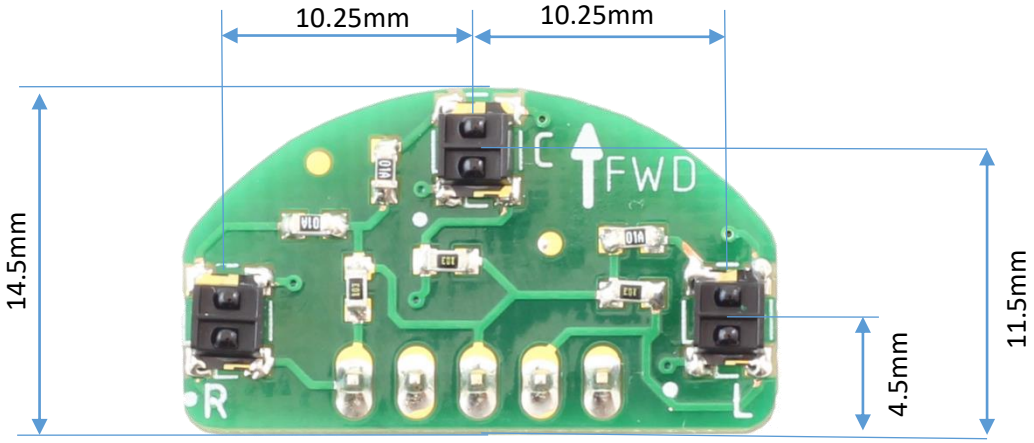
For more information on this product visit:

www.kitronik.co.uk/5337



Dimensions





(Dimensions +/- 0.8mm)