

# :CREATE BBC micro:bit interface for Fischertechnik



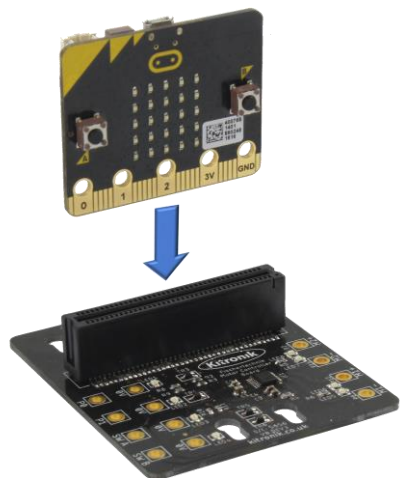
www.kitronik.co.uk/5656

**Introduction:** The BBC micro:bit interface for Fischertechnik gives an alternative to control motors and components in the Fischertechnik range. Designed to run from a 9V PP3 battery (as used in Fischertechnik kits) the PCB produces a regulated 3V supply to power the BBC micro:bit. The board also includes a power switch to turn on and off the supply. There are plated holes for using the Fischertechnik plugs to connect components from the Fischertechnik kits to the PCB. The PCB has been designed to slot onto the Fischertechnik base plate to give ease of access to the additional circuitry. See dimensions for Fischertechnik base plate grid hole counts.

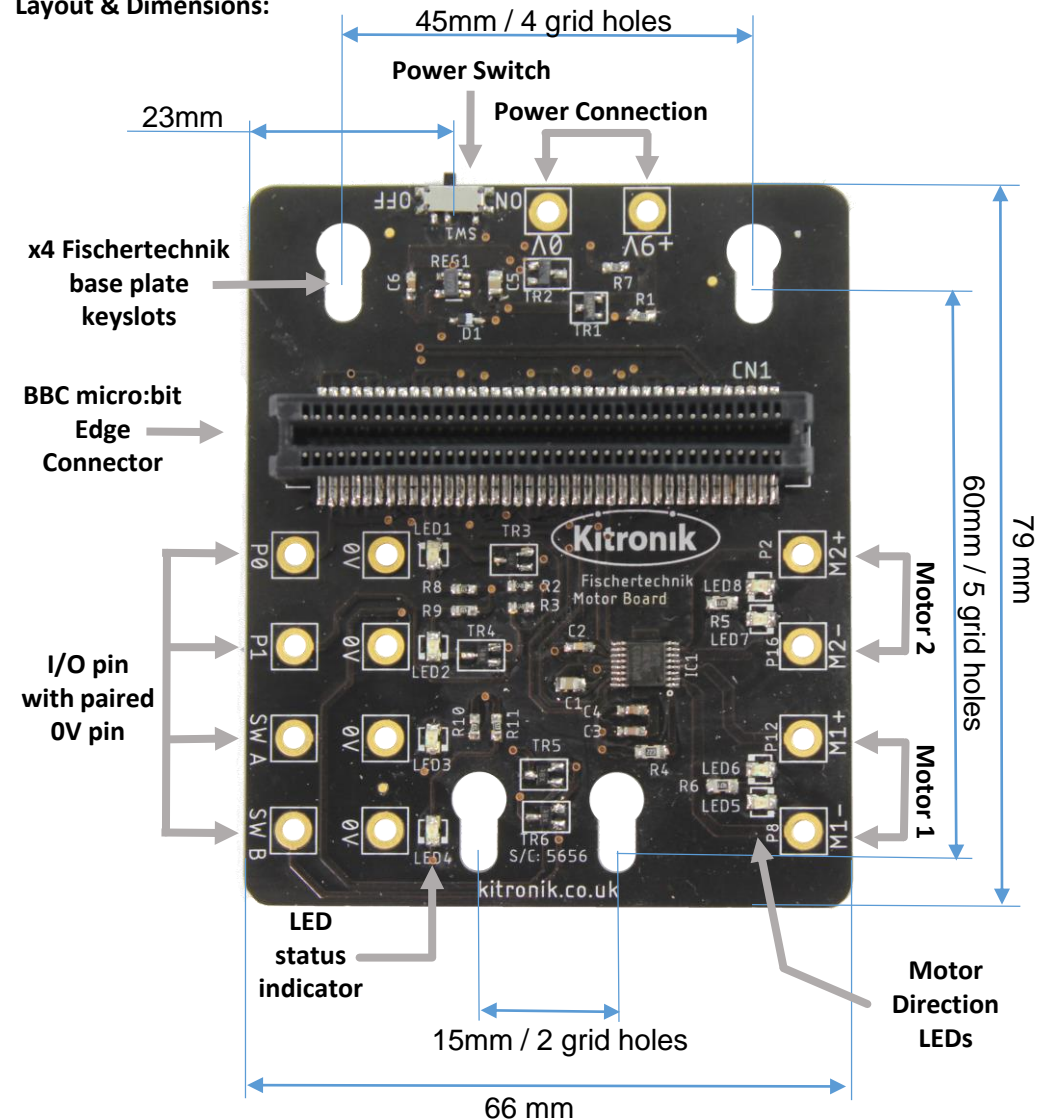
**Connections:** There are 2 Input/Output pins and 2 switch inputs, each paired with a 0V connection  
2 pairs of motor connections that can drive a motor both clockwise and counter-clockwise. The corresponding pins to the BBC micro:bit are labelled in the table and on the PCB.

Pinout	
P0	Input/Output pin
P1	Input/Output pin
P5/SW A	Switch A pin
P11/SW B	Switch B pin
P8	Motor 1 control line
P12	Motor 1 control line
P2	Motor 2 control line
P16	Motor 2 control line

**Inserting a BBC micro:bit:**  
The board has been designed so that the BBC micro:bit can plug directly into the edge connector on the Motor Board. The BBC micro:bit can be inserted facing either direction.



## Layout & Dimensions:



NOTE: PCB is 17.2mm in height

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## Fischertechnik Motor Board

### General



**LED Block** – Connect the LED to either P0 or P1 from the selection and choose to either turn it on or off



**Phototransistor Block** – take a voltage reading from the phototransistor, select either P0 or P1. returns a value between 0 and 255



**NTC Block** – measures the temperature in Celsius and returns a number. It is possible to select either P0 or P1

### Motors



**Motor On** – the block allows the user to select which motor, the direction required and the speed of the motor (between 0 and 100)



**Motor Off** – select which motor to stop.



**Buttons** – inputs SW A and SW B on the board link with using the standard button press blocks in Makecode.

### Example Code:

The example code reads the temperature of the NTC resistor (on P0) and turns on an LED on P0, and Motor 1 when over 25 degrees C. When below 25 degrees C, the LED and Motor 1 are turned off. Pressing Button A and Button B will start and stop Motor 2.

The Makecode blocks and microPython example code are available at:

<https://github.com/KitronikLtd/pxt-kitronik-fischertechnik>

and

<https://github.com/KitronikLtd/micropython-microbit-kitronik-fischertechnik>

