BN 2268139

Motor Driver Board for micro:bit

GB Operating instructions

Latest operating instructions

Download the latest operating instructions at www.conrad.com/downloads or scan the QR code shown. Follow the instructions on the website.

Delivery contents

- Motor Driver Board for micro:bit

Description

The micro:bit is a powerful, low-cost, fully programmable single board computer developed by the BBC. It was designed to encourage children to actively engage in technical activities such as programming and electronics.

It features a 5x5 LED matrix, two integrated buttons, a compass, an accelerometer and Bluetooth®.

It supports the graphical programming interface PXT (MakeCode). This can be used on Microsoft Windows®, MacOS, iOS, Android™ and many other operating systems without downloading an additional compiler.

The additional board has been specially developed for the micro:bit single board computer. It allows you to control two small DC motors with the micro:bit. The TB6612FNG motor driver installed on the board can control motors with a current consumption of up to 1.2 A continuous current and a 2 or 3.2 A peak current.

In addition, the pins of the micro:bit are connected via 3-pin pin strips. This makes it very easy to connect additional circuits, sensors or actuators.

Bluetooth® is a registered trademark of Bluetooth SIG, Inc.

Product features

- 1x slot for micro:bit single board computer
- 5V voltage regulator (NCP1117ST50T3G)
- 3.3 V Voltage regulator (AMS1117-3.3V)
- 1x TB6612FNG motor driver
- 9x 3-pin strip (G, 5V, S)
- 8x 3-pin strip (G, 3V, S)
- 2x 11-pin pin strip (micro:bit pins)
- 1x 6-pin screw terminal (G, VM, A1, A2, B1, B2)
- 4x 2.8 mm holes for mounting

Requirements

The following components are required to use the board:

- 1 micro:bit, e.g. Conrad item no.: 2253828

Optional:

- External power supply for motors (6 - 12 V/DC)
- 2 DC motors

Hardware

Screw terminals:

G	GND (ground)
VM	Power supply for motors (6 - 12 V/DC)
A1	Motor connection for motor 1
A2	Motor connection for motor 1
B1	Motor connection for motor 2
B2	Motor connection for motor 2

The following operating modes are possible with these motor drivers:

- Forwards
- Backwards
- Brake
- Stop

The pin assignment of the remaining inputs/outputs corresponds to the markings on the circuit board.

Operation

Insert the micro:bit into the slot provided on the circuit board. The 5x5 LED matrix must be aligned in such a way that you can read the markings on the circuit board.

When using this circuit board, the micro:bit can be supplied with power via USB or the battery holder.

The power supply for the motors is connected to the screw terminals G (GND) and VM (+). The voltage depends on the motors used and can be between 6 and 12 V/DC.

Important:

The motors are not supplied with power by the micro:bit! If no power supply is connected to terminals G and VM, the motors will not rotate!

Connect one motor to terminals A1/A2 and the other to terminals B1/B2. It is also possible to connect only one motor!

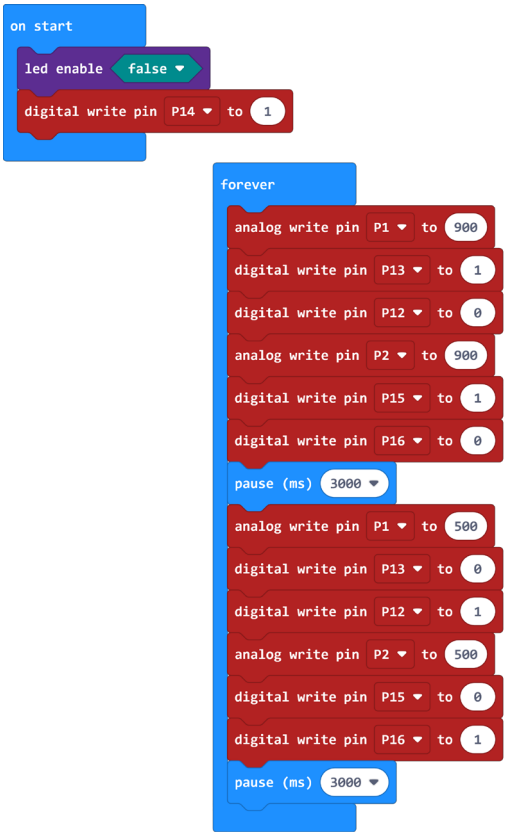
Test program

You can graphically program the code below using the micro:bit MakeCode Editor:

» https://makecode.microbit.org/#editor

Then download the code and transfer it to the micro:bit. The exact procedure for programming and transferring the program to the micro:bit can be found in the micro:bit manual or online at:

» https://microbit.org



Test

After the program has been transferred to the micro:bit and started, the motors will turn in one direction for 3 seconds and in the other direction after another 3 seconds. The rotation speed is set with the "analogue write pin" blocks P1 and P2. The higher the value, the faster the motor rotates (and vice versa).

Disposal

Electronic devices are recyclable waste and must not be placed in household waste. At the end of its service life, dispose of the product in accordance with the applicable regulatory guidelines.

You thus fulfil your statutory obligations and contribute to protection of the environment.

Specifications

Motor operating voltage	6 – 12 V/DC (Terminal G and VM)
Motor current (duration)	≤ 1.2 A
Motor current (max.)	2 or 3.2 A
Motor driver	TB6612FNG
Pin strip output voltage	3.3 and 5 V/DC
Pin spacing of socket strip (width)	2.54 mm
Pin spacing of pin strip (width)	2.54 mm
Dimensions (W x H x D)	58 x 12 x 70 mm
Weight	35 g

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