## TRU COMPONENTS

CE

**BN 2268126**

# 4-Channel Relay Module for micro:bit

**GB Operating instructions**

## Latest operating instructions

## Delivery contents

• 4-Channel Relay Module 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 (Make-Code). This can be used on Microsoft Windows®, MacOS, iOS, Android™ and many other operating systems without downloading an additional compiler.

If you want to do more with your micro:bit, you can use this additional board to equip the micro:bit with four relay outputs with a changeover contact, e.g. to switch motors, lamps, sirens or similar devices.

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

## Product features

• 4x relay outputs with changeover contact (NO/NC)
• 4x LEDs as status indicators for the relays
• Connection for external power supply
• 1x slot for micro:bit single board computer

## Hardware

The outputs are potential-free, i.e. the switching contacts are not connected to the micro:bit. You can imagine the contacts as a simple changeover switch.

The relays are "high level" triggered, i.e. if the digital output of the micro:bit is "high (1)", the relay is triggered. The four LEDs on the edge of the board indicate the switching status of the relays (if the LED is on, the relay is switched on).

P1:

|  | VIN | +5 V/DC external supply of the relays |
|---|---|---|
|  | GND | Ground |

J1: Relay 1

|  | micro:bit | Pin P7 |
|---|---|---|
|  | NC1 | Contact opener |
|  | COM1 | COM (changeover contact) |
|  | NO1 | Contact closer |

J2: Relay 2

|  | micro:bit | Pin P6 |
|---|---|---|
|  | NC2 | Contact opener |
|  | COM2 | COM (changeover contact) |
|  | NO2 | Contact closer |

J3: Relay 3

|  | micro:bit | Pin P4 |
|---|---|---|
|  | NC3 | Contact opener |
|  | COM3 | COM (changeover contact) |
|  | NO3 | Contact closer |

J4: Relay 4

|  | micro:bit | Pin P3 |
|---|---|---|
|  | NC4 | Contact opener |
|  | COM4 | COM (changeover contact) |
|  | NO4 | Contact closer |
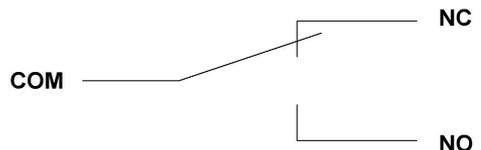
## Requirements

The following components are required to use the board:

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

## Operation

Insert the micro:bit into the slot provided on the circuit board. The 5x5 LED matrix must point towards you. The markings on the circuit board must be legible.

### Test program

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

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

Then download the program 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 starting the program, relays 1 to 4 switch on one after the other at a time interval of 1 second. When all relays are switched on, the program waits for 2 seconds and switches off all relays at the same time. After the relays have been switched off for 2 seconds, the program starts from the beginning.

## 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.

## Technical data

| | |
|---|---|
| Operating voltage ......................... | 5 V/DC |
| Current consumption .................... | Approx. 120 mA (all relays energized) |
| Capacity of relay contacts ............ | 120 V/AC, 3 A; 24 V/DC, 3A |
| Dimensions (W x H x D) .............. | 58 x 15 x 80 mm |
| Weight ......................................... | 52 g |