

## Overview

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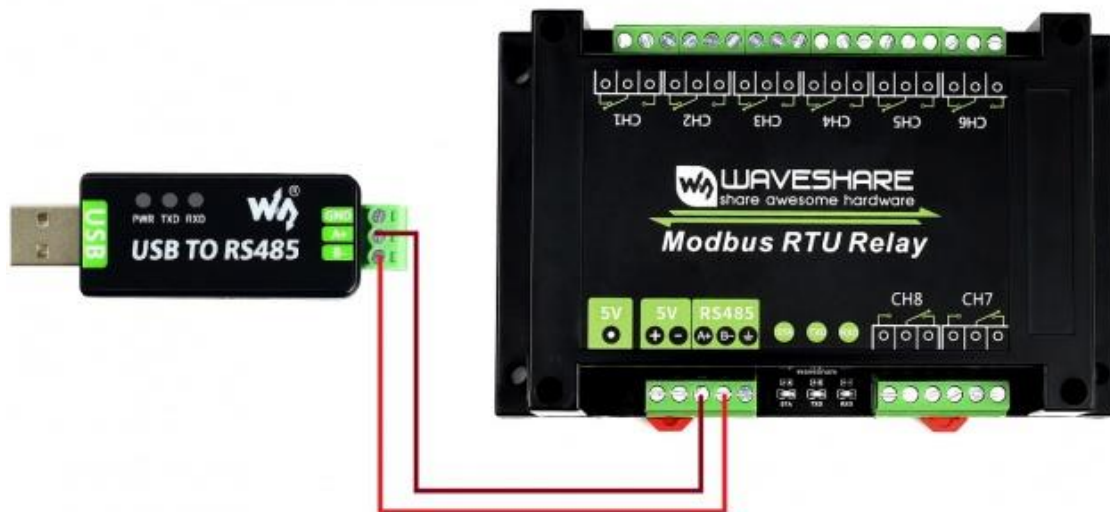
This is an industrial 8-ch relay module controlled via RS485 bus, utilizing Modbus RTU protocol. It features embedded protection circuits such as power isolation, ADI magnetical isolation, and TVS diode, etc. It also comes with an ABS enclosure.

The Modbus RTU Relay is very easy to use. Due to its fast communication, stability, reliability, and safety, it is an ideal choice for industrial control equipments and/or applications with high communication requirements.

## Hardware testing

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- Connect USB to 485 module to Modbus RTU Relay board by wires. Connect A to A and B to B. Then connect the USB to 485 module to your PC



## Raspberry Pi Enable Serial port

- Open terminal of Raspberry Pi
- Run the following command to configure

```
sudo raspi-config
```

- Choose Interfacing Options -> Serial -> No -> Yes
- Then reboot Raspberry Pi

```
sudo reboot
```

### Hardware connection

You need to connect and RS485 devices to Raspberry Pi (the demo codes provided is based on our RS485 CAN HAT), Connect Modbus RTU Relay module to the RS485 CAN HAT, A to A and B to B.

### Run example

Use the following commands to run the demo codes

```
sudo apt-get install p7zip
wget https://www.waveshare.com/w/upload/f/f9/Modbus_RTU_Relay_Code.zip
7zr x Modbus_RTU_Relay.7z -r -o./Modbus_RTU_Relay
cd Modbus_RTU_Relay/Python3
sudo python3 main.py
```

## STM32

The Demo codes for STM32 is based on NULCEO-F103RB and RS485 CAN Shield module

Download the [#demo codes](#) and open the STM32 project by Keil software.

Program the codes to NUCLEO board

The codes will run and toggle the relay in turn.

## Arduino

The Arduino demo is based on Waveshare UNO Plus and RS485 CAN Shield

Open Arduino project and program it to the UNO board.

The codes will run and toggle the relay in turn.

## Resources

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- [Protocol Manual of Modbus RTU Relay](#)

### Demo codes

- [Demo codes](#)

### Softwares

- [Sscm software for Modbus RTU Relay](#)

