KAMAMI

KAmod RPi Relay4 SSR

Rev. 20260404125443
Źródło: https://wiki.kamamilabs.com/index.php?title=KAmod_RPi_Relay4_SSR

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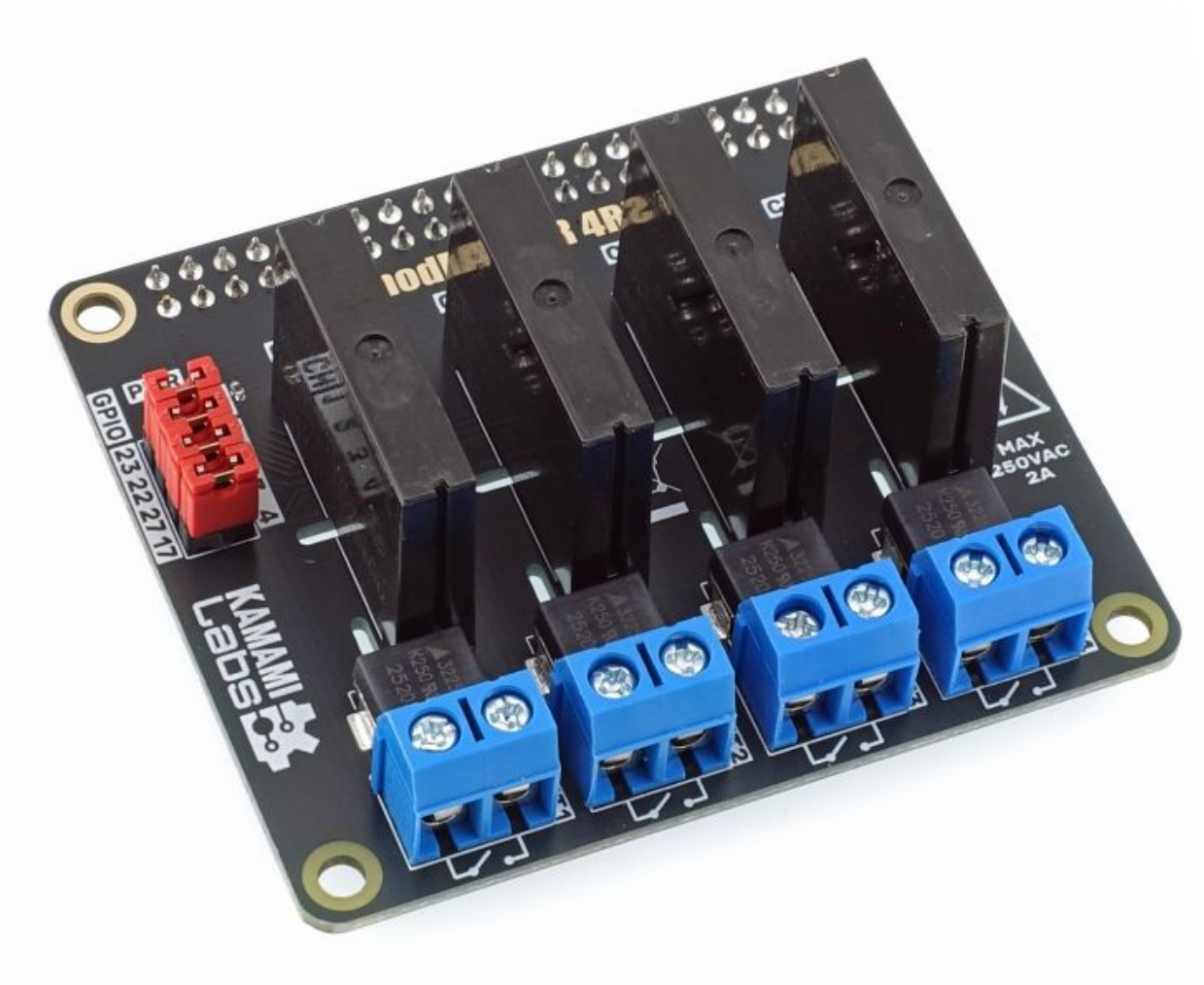
Description

KAmod RPi 4RELAY SSR - 4-Channel SSR Relay Module for Raspberry Pi
This module was designed as a HAT overlay for Raspberry Pi and is equipped with four solid-state relays (SSR), suitable for switching alternating current (AC) circuits with a maximum load of 2 A and a voltage of 240 V AC. Compared to electromechanical relays, SSRs do not contain mechanical components as they are built from semiconductor elements (optocouplers and thyristors/triacs). They offer higher switching speeds, longer lifespan, and silent operation. The board includes surge protection components and LEDs signaling the relay activation status. The module is ideal for home automation projects, lighting systems, or garden installations.



Basic Features and Parameters

- 4x relay outputs - OMRON G3MB with built-in snubbers
- Built-in SIOV varistors (surge current: 400 A)
- Switching method: Zero-cross
- Output load capacity:
    - 0.1...2 A / 100...240 V (AC), 50...60 Hz,
    - Operating voltage range: 75...264 V,
    - Peak current: 30 A (@ 60 Hz, 1 cycle).
- LEDs signaling relay activation status
- ARK screw terminals
- Jumpers allowing disconnection of the relay from the GPIO port

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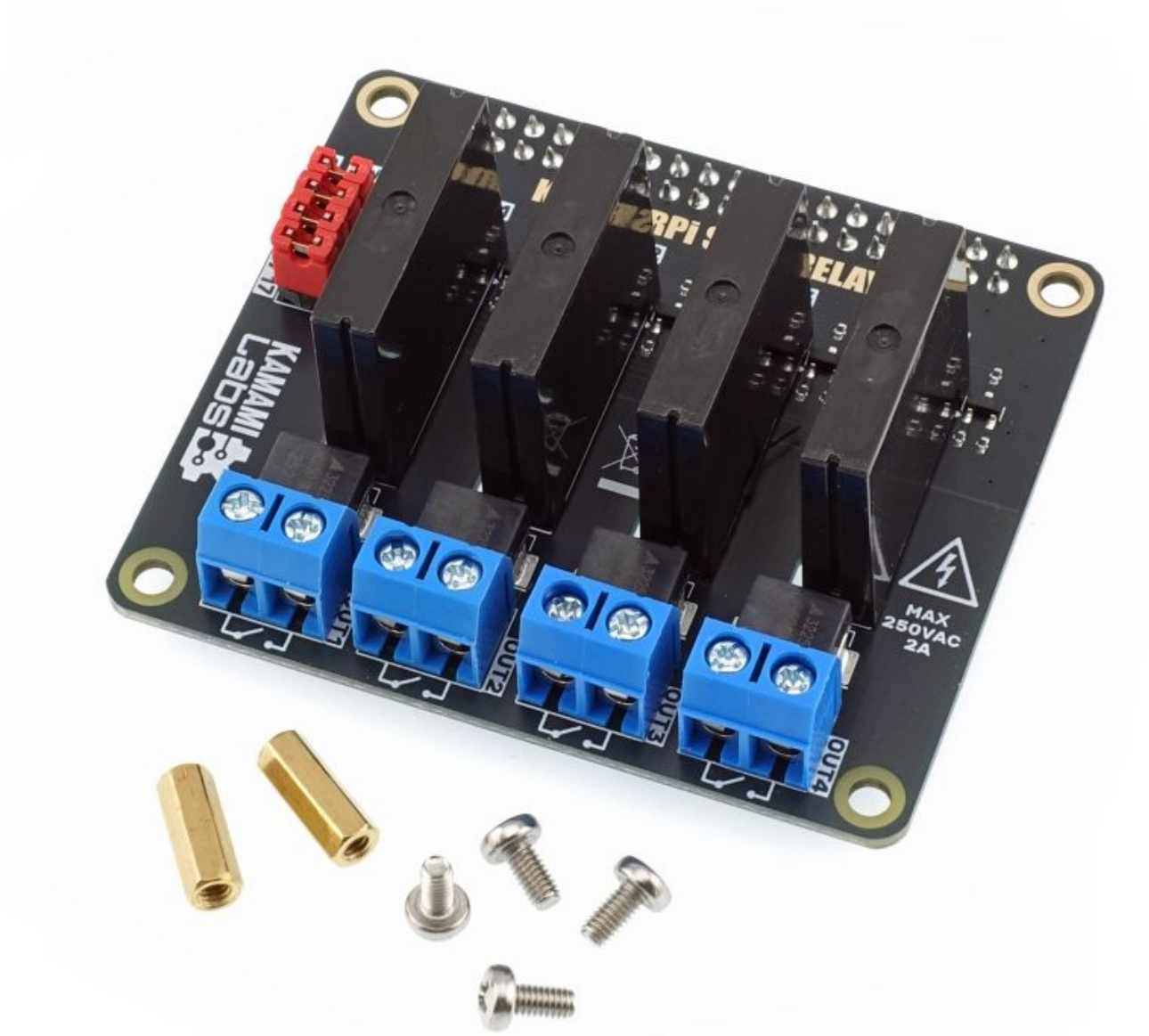
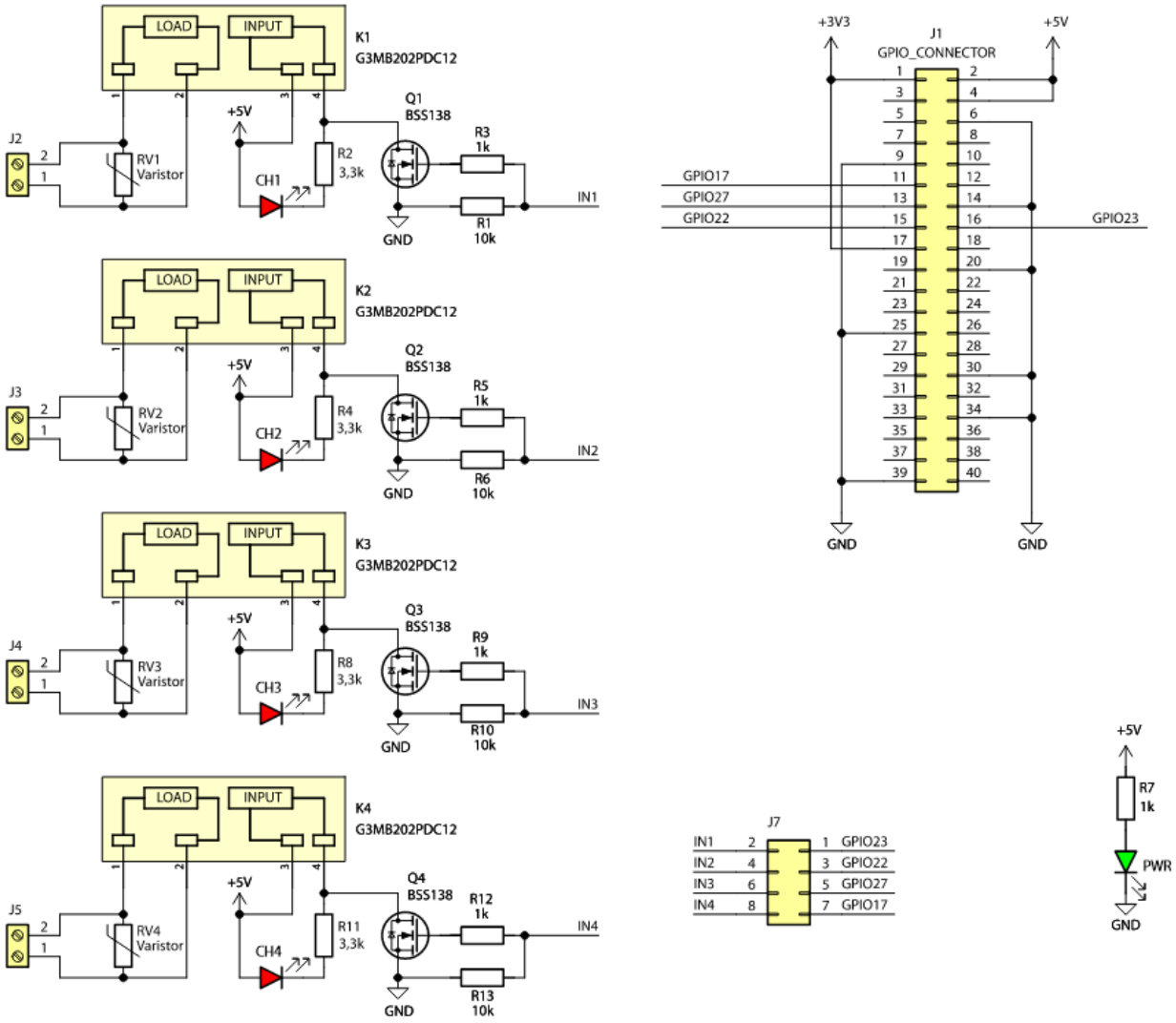
Standard Equipment

Code	Description
KAmod RPi Relay4 SSR	Assembled and tested module
Mounting Kit	Set of screws and spacers for attaching the HAT to the Raspberry Pi board



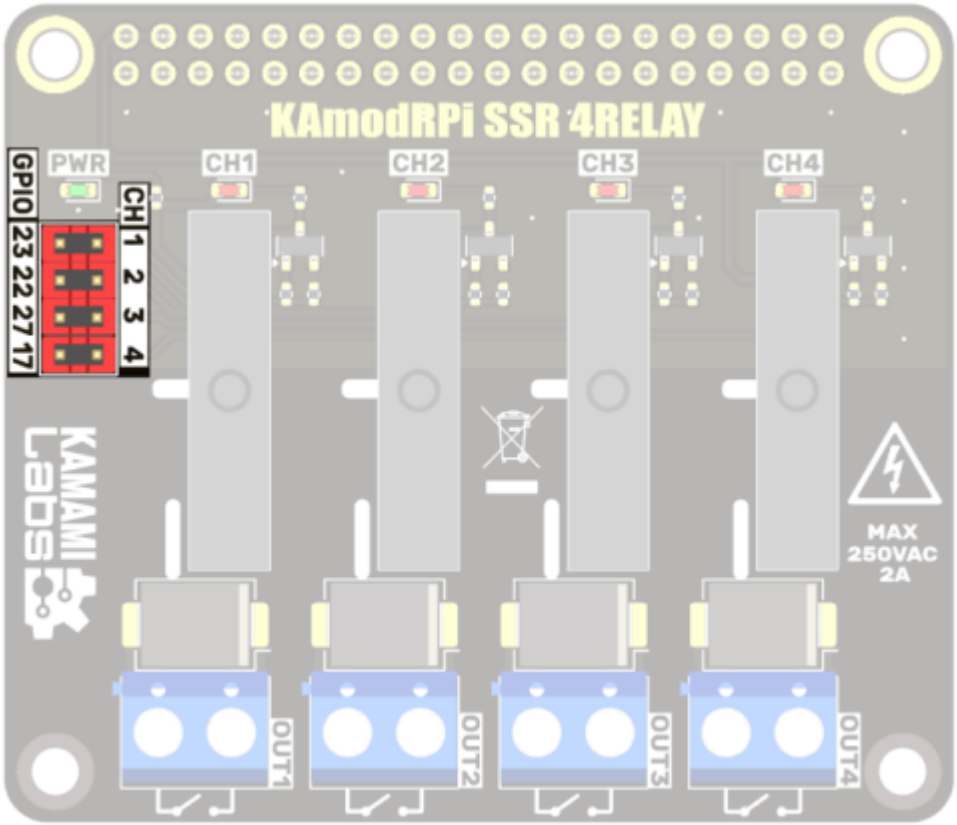
Schematic


LOAD
INPUT
K1
G3MB202PDC12
Q1
BSS138
R3
1k
R2
3,3k
R1
10k
J2
RV1
Varistor
CH1
+5V
GND
IN1
K2
G3MB202PDC12
Q2
BSS138
R5
1k
R4
3,3k
R6
10k
J3
RV2
Varistor
CH2
IN2
K3
G3MB202PDC12
Q3
BSS138
R9
1k
R8
3,3k
R10
10k
J4
RV3
Varistor
CH3
IN3
K4
G3MB202PDC12
Q4
BSS138
R12
1k
R11
3,3k
R13
10k
J5
RV4
Varistor
CH4
IN4
+3V3
J1
GPIO_CONNECTOR
GPIO17
GPIO27
GPIO22
GPIO23
J7
IN1
IN2
IN3
IN4
GPIO23
GPIO22
GPIO27
GPIO17
R7
1k
PWR

Assignment of Inputs and Outputs to Raspberry Pi GPIO Lines

Raspberry Pi Pin	KAmod RPi Relay4 SSR
GPIO23	CH1 / OUT1
GPIO22	CH2 / OUT2
GPIO27	CH3 / OUT3
GPIO17	CH4 / OUT4

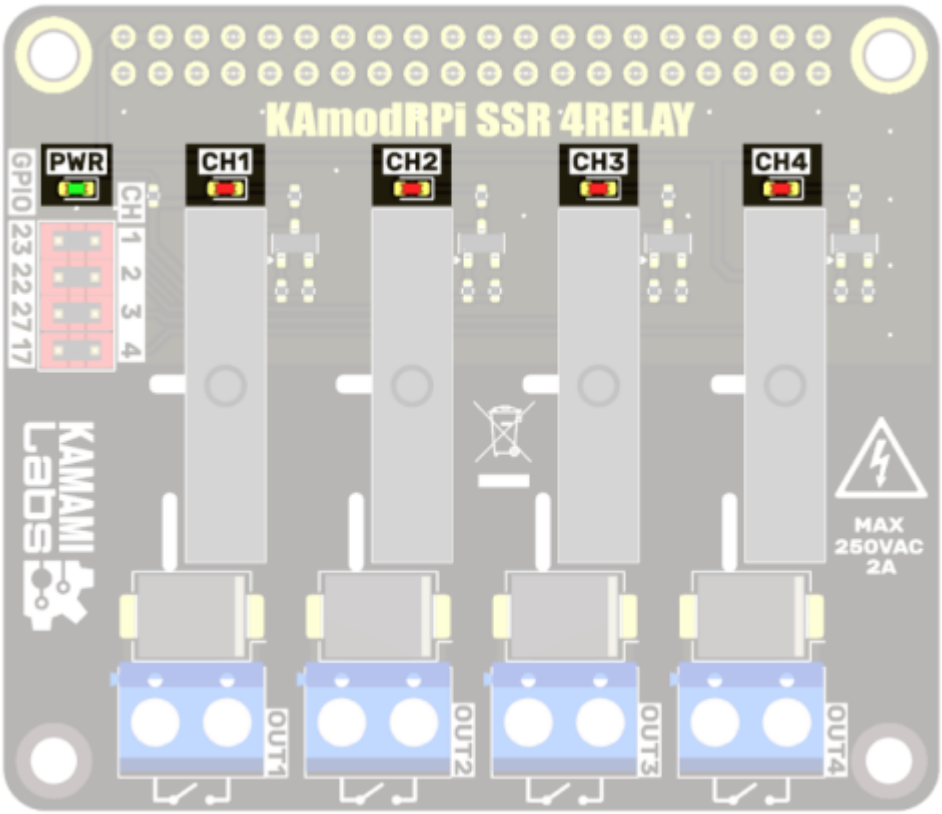
The GPIO line outputs are connected to the control circuit via a jumper, allowing the corresponding pins to be disconnected if necessary.
Setting a high logic state ("1") activates the given relay. Relay activation is signaled by the LED lighting up on the corresponding channel.



Signaling LEDs

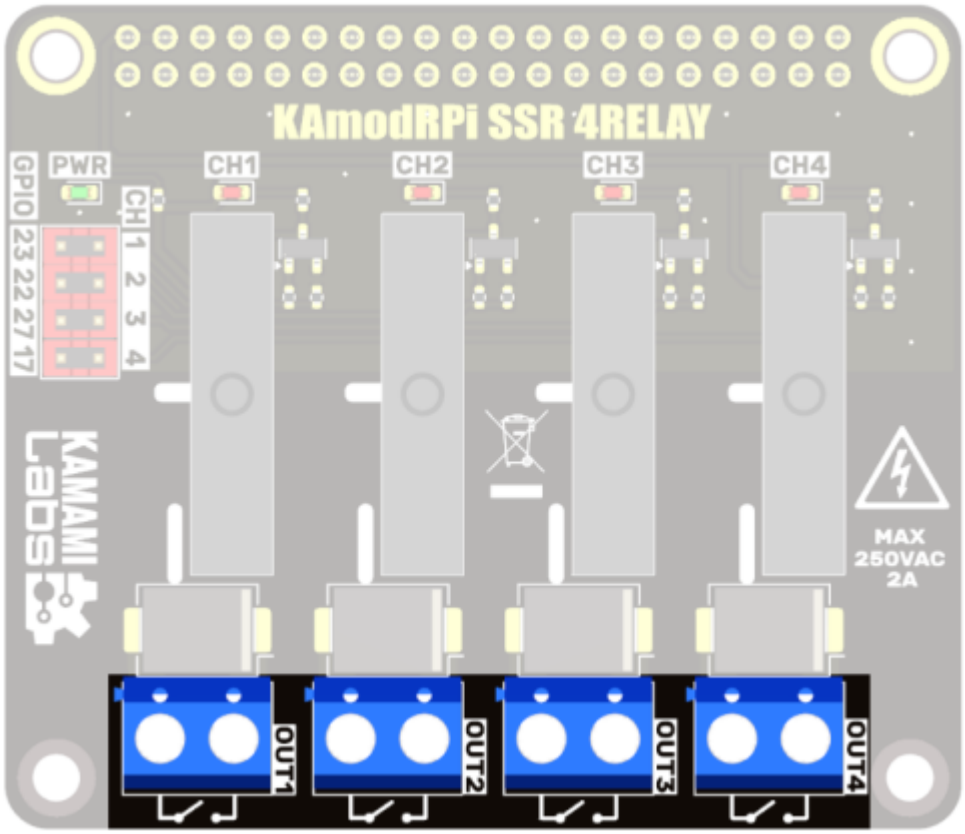
LED	Function
CH1	• OUT1 relay activated
CH2	• OUT2 relay activated
CH3	• OUT3 relay activated
CH4	• OUT4 relay activated
PWR	• Module power supply

The module is equipped with 4 LEDs **CH1-CH4** signaling relay activation, as well as an additional **PWR** LED indicating the presence of power supply voltage.

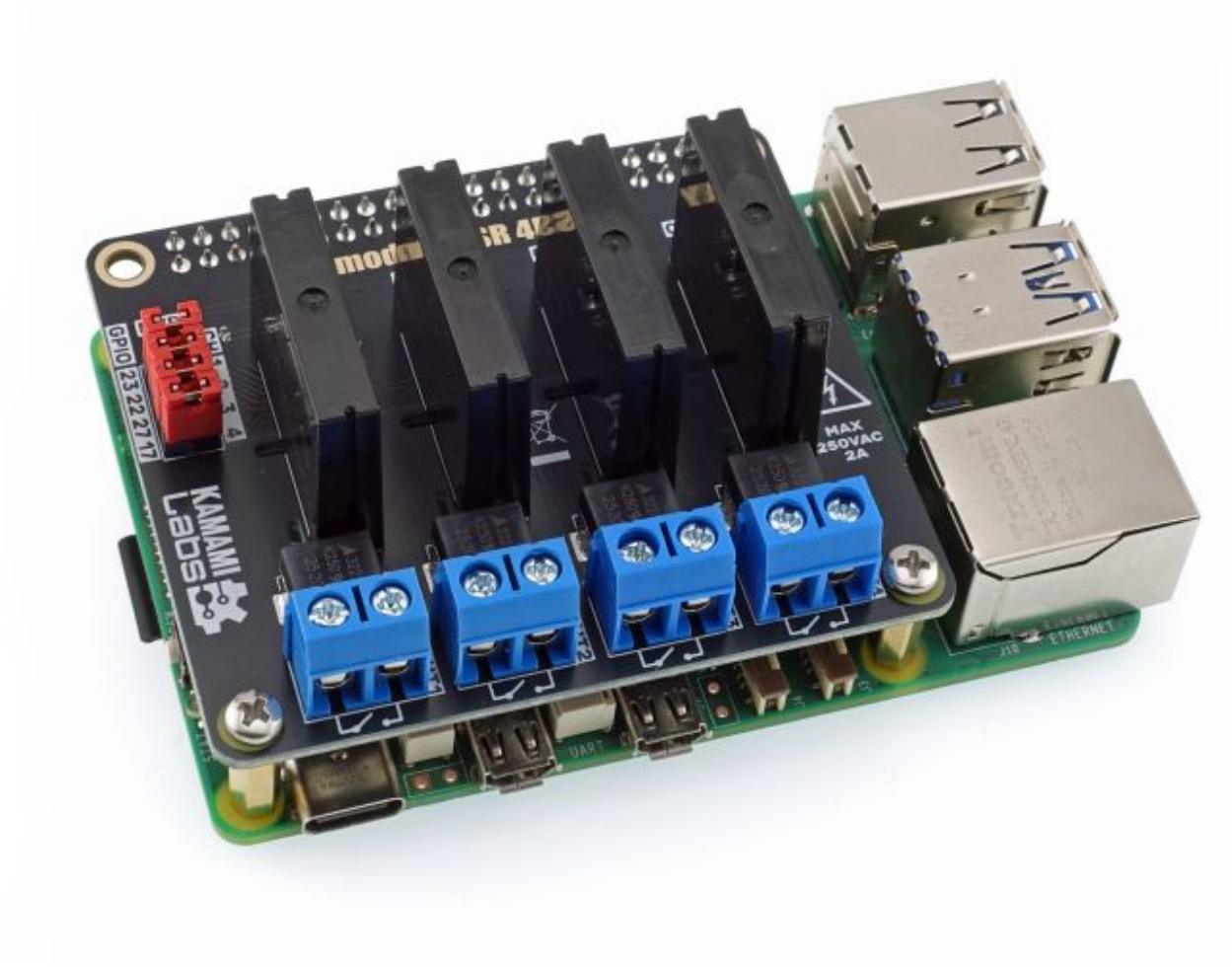


Relay Outputs

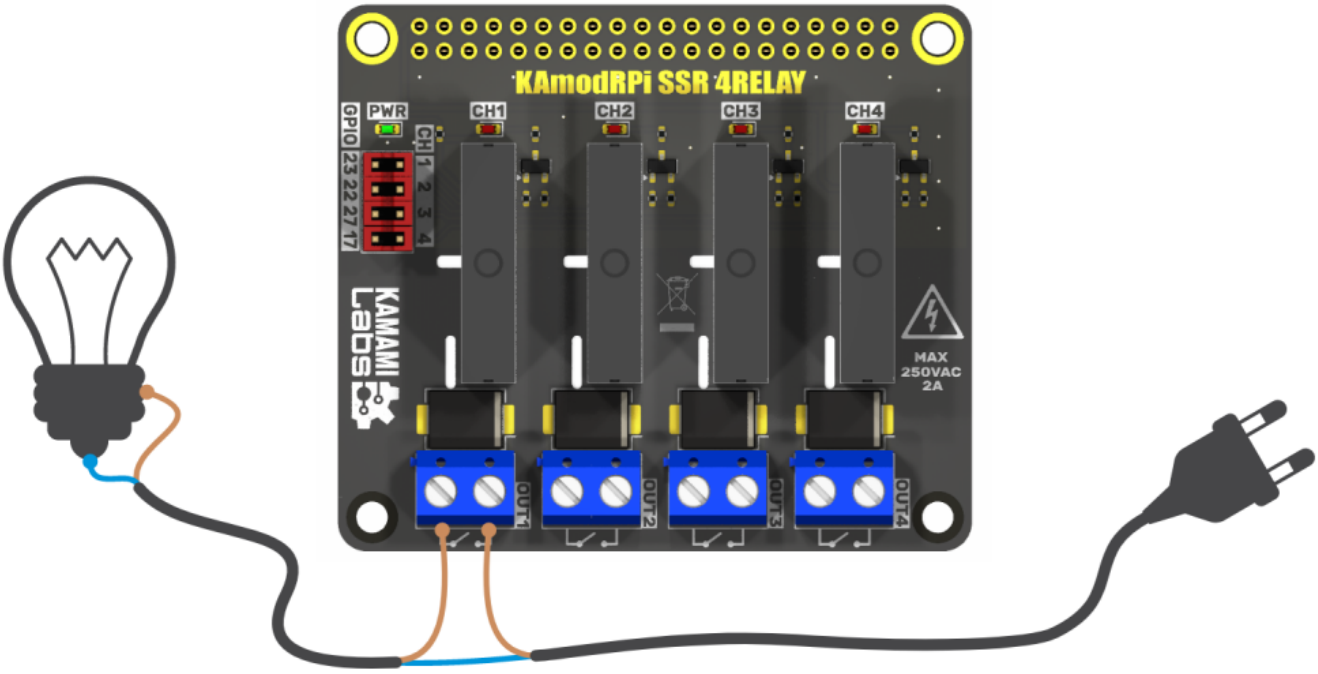
The relay contact outputs are routed to screw terminals that allow for the connection of both stripped wire ends and wires with crimped ferrules.



Module Installation on the Raspberry Pi Connector



Connection Example



Links

- CAD Model (STEP)

BTC Korporacja
05-120 Legionowo
ul. Lwowska 5
tel.: (22) 767-36-20
faks: (22) 767-36-33
e-mail:
sprzedaz@kamami.pl
https://kamami.pl