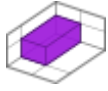


## #03-2, M1S: Two low-power relays (configuration 2)



**Function:** Two mechanical low-power relays with joined middle (common) terminals. Relay 1 has normally closed and normally opened terminals. Relay 2 only has the normally opened terminal exposed.

**Form factor:** [M1S](#)

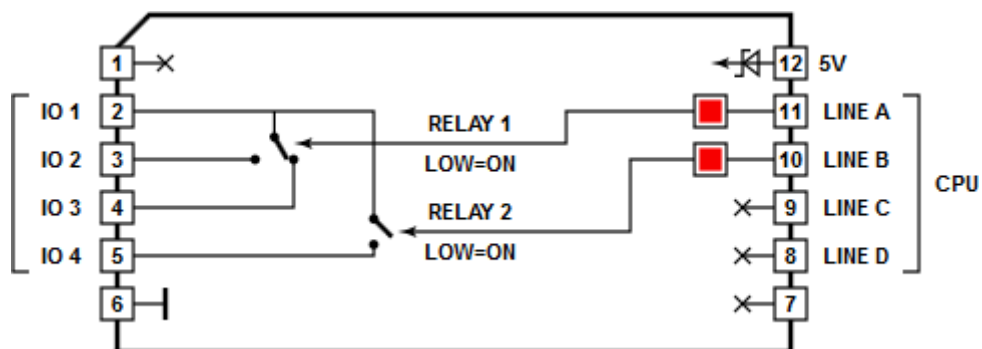
**Category:** Output module

**Special needs:** ---

**Power requirements:** 5V/[TBD](#)mA

**Mates with:** [#19](#), [#20](#), [#21](#)

**See also:** [#03-1](#), [#06](#), [#07](#), [#15](#)



### Details

These relays are rated for [TBD/TBD](#).

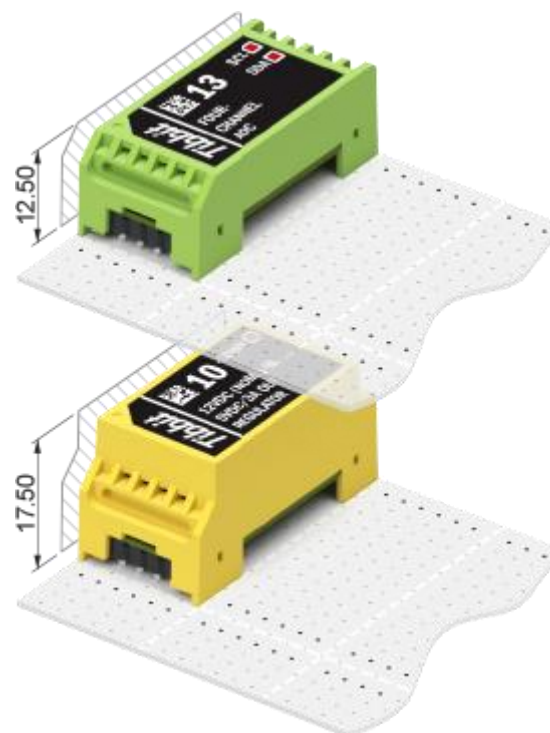
To activate a relay, set the corresponding control line LOW. When left unconnected, control lines default to HIGH (and, hence, relays are off).

Combine this Tibbit with terminal block devices -- [#20](#) (nine terminal blocks) or [#21](#) (four terminal blocks).

## LEDs

There are two red LEDs which are connected to two relay control lines. LEDs light up for the LOW state of control lines (i.e. when relays are activated).

## Footprint and Color Coding

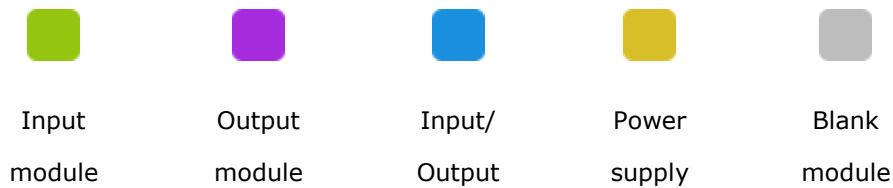


M1 Tibbits are single-width modules occupying one ["M" socket on the standard tile](#). Their footprint is roughly 7 x 14 "squares" (one "square" is 2.54 x 2.54 mm).

M1 devices have four I/O lines for interfacing with the outside world. We found four to be the magic number. it's just right for a wide variety of I/O functions.

M1s can be short (M1S) or tall (M1T). Most M1 devices fit into "short" 12.5mm shells, selected few are 17.5mm "tall".

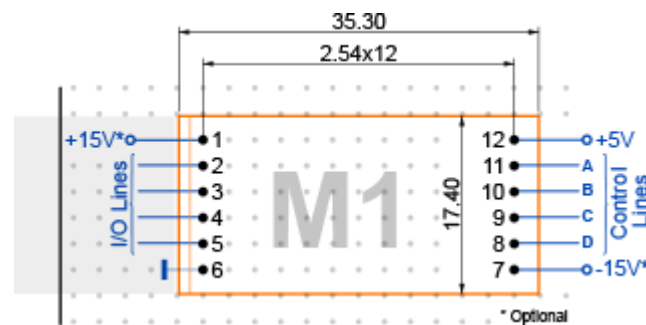
Each M1 module's color will tell you if it is an...



M1 Tibbits can incorporate up to [four status LEDs](#).

### I/O pins

M1 modules have 2 rows of 6 pins:



**Pins 8-11** are control lines A-D. They are for interfacing to our [embedded modules](#) or other microcontrollers. On [Tibbo Project PCBs](#) these pins are connected to the main processor.

**Pins 2-5** are I/O lines facing the outside world. On Tibbo Project PCBs they go to Tibbit [connector sockets](#) (i.e. connect to [C1](#) and [C2](#) devices).

**Pins 6 and 12** are the GROUND and +5V power pins. Most Tibbit Modules consume (take) 5V power. There are also power supply Tibbits that generate 5V power from a variety of sources. Those *output* 5V through pin 12. As an example of power Tibbits see Tibbits [#10](#) and [#23](#).

**Pins 1 and 7** are for the additional +15V and -15V voltages. These are optional and only needed by few Tibbits. A special power supply Tibbit [#12](#) generates +/-15V from the main 5V power.