Wiring

How to connect your please-open.it hardware kit to your controller

Author	Date	Comment
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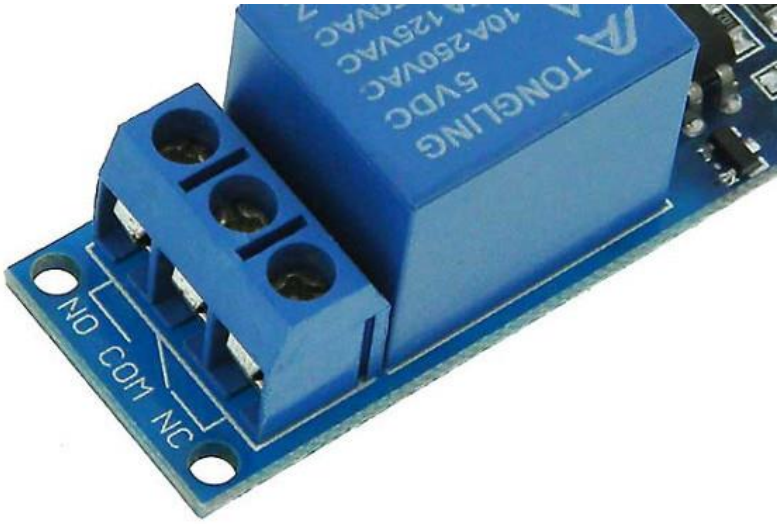
1 Table des matières

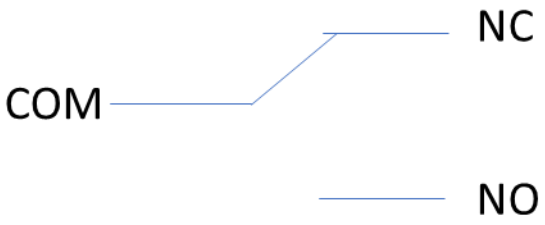
2 Introduction

This document exposes 2 methods of wiring a please-open.it kit to a motorized gate. This document is not exhaustive, in case of doubt call a specialist, your manufacturer or an electrician.

3 Relay board

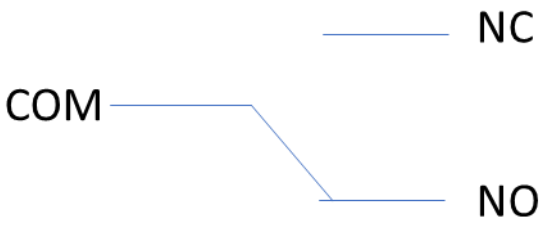
Each relay has 3 slots :





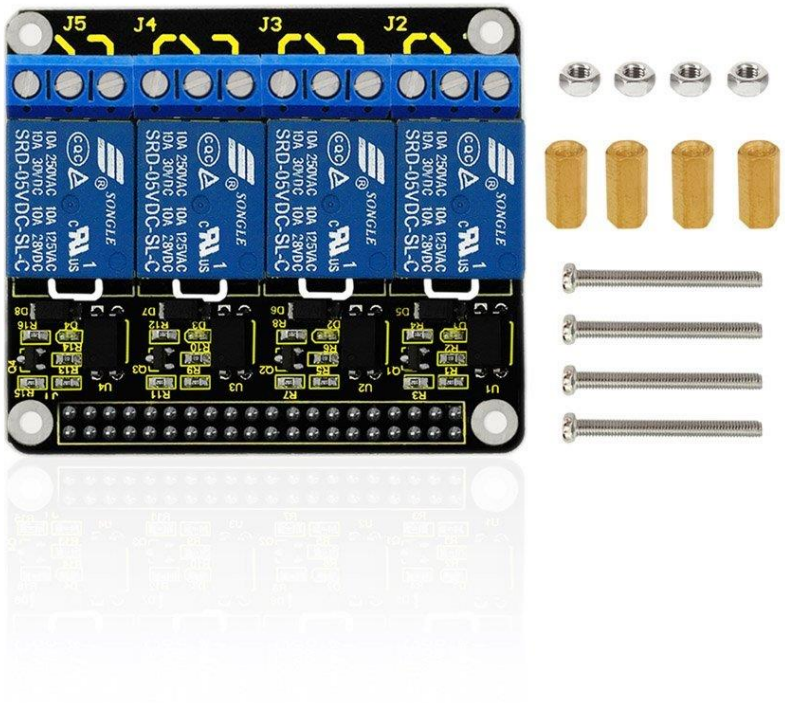
At hiddle state

At hiddle state COM stay connected to NC. When a high state is sent by the computer, COM slot is directly connected to NO



At high state

The recommended boards are :



4 channels relay board from KEYESTUDIO. It has an optical isolation (opto-couplers) and it shape feets perfectly to a raspberry pi 3 or 3B with given screws.

Or

The same with only one relay on the board. It comes from XCSOURCE :

It has the same optical isolation and the same relay. You will need 3 wires to connect to a raspberry pi (+5v, GND, Signal on GPIO).

The songle Relay is :

SONGLE RELAY

松乐继电器 ® SONGLE RELAY	RELAY ISO9002	SRD

1. MAIN FEATURES

- Switching capacity available by 10A in spite of small size design for highdensity P.C. board mounting technique.
- UL,CUL,TUV recognized.
- Selection of plastic material for high temperature and better chemical solution performance.
- Sealed types available.
- Simple relay magnetic circuit to meet low cost of mass production.

2. APPLICATIONS

- Domestic appliance, office machine, audio, equipment, automobile, etc.

(Remote control TV receiver, monitor display, audio equipment high rushing current use application.)

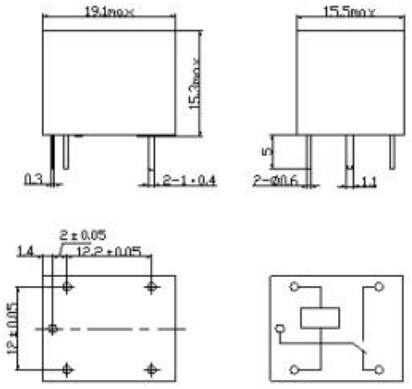
3. ORDERING INFORMATION

SRD	XX VDC	S	L	C
Model of relay	Nominal coil voltage	Structure	Coil sensitivity	Contact form
SRD	03、05、06、09、12、24、48VDC	S:Sealed type	L:0.36W	A:1 form A
				B:1 form B
		F:Flux free type	D:0.45W	C:1 form C

4. RATING

CCC	FILE NUMBER:CH0052885-2000	7A/240VDC
CCC	FILE NUMBER:CH0036746-99	10A/250VDC
UL /CUL	FILE NUMBER: E167996	10A/125VAC 28VDC
TUV	FILE NUMBER: R9933789	10A/240VAC 28VDC

5. DIMENSION(unit:mm) DRILLING(unit:mm) WIRING DIAGRAM



6. COIL DATA CHART (AT20°C)

Coil Sensitivity	Coil Voltage Code	Nominal Voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω) ±10%	Power Consumption (W)	Pull-In Voltage (VDC)	Drop-Out Voltage (VDC)	Max-Allowable Voltage (VDC)
SRD (High Sensitivity)	03	03	120	25	abt. 0.36W	75%Max.	10% Min.	120%
	05	05	71.4	70				
	06	06	60	100				
	09	09	40	225				
	12	12	30	400				
	24	24	15	1600				
	48	48	7.5	6400				
SRD (Standard)	03	03	150	20	abt. 0.45W	75% Max.	10% Min.	110%
	05	05	89.3	55				
	06	06	75	80				
	09	09	50	180				
	12	12	37.5	320				
	24	24	18.7	1280				
	48	48	10	4500	abt. 0.51W			

7. CONTACT RATING

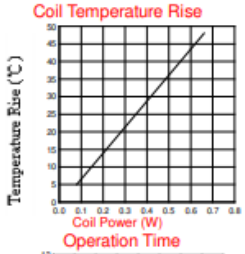
Item \ Type	SRD	
	FORM C	FORM A
Contact Capacity Resistive Load (cosΦ=1)	7A 28VDC 10A 125VAC 7A 240VAC	10A 28VDC 10A 240VAC
Inductive Load (cosΦ=0.4 L/R=7msec)	3A 120VAC 3A 28VDC	5A 120VAC 5A 28VDC
Max. Allowable Voltage	250VAC/110VDC	250VAC/110VDC
Max. Allowable Power Force	800VAC/240W	1200VA/300W
Contact Material	AgCdO	AgCdO

8. PERFORMANCE (at initial value)

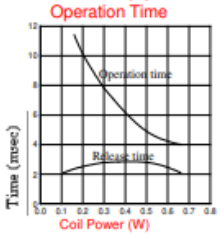
Item \ Type	SRD
Contact Resistance	100mΩ Max.
Operation Time	10msec Max.
Release Time	5msec Max.
Dielectric Strength Between coil & contact Between contacts	 1500VAC 50/60HZ (1 minute) 1000VAC 50/60HZ (1 minute)
Insulation Resistance	100 MΩ Min. (500VDC)
Max. ON/OFF Switching Mechanically Electrically	 300 operation/min 30 operation/min
Ambient Temperature	-25°C to +70°C
Operating Humidity	45 to 85% RH
Vibration Endurance Error Operation	 10 to 55Hz Double Amplitude 1.5mm 10 to 55Hz Double Amplitude 1.5mm
Shock Endurance Error Operation	 100G Min. 10G Min.
Life Expectancy Mechanically Electrically	 10^7 operations. Min. (no load) 10^5 operations. Min. (at rated coil voltage)
Weight	abt. 10grs.

9.REFERENCE DATA

Coil Temperature Rise

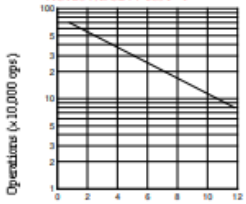


Operation Time

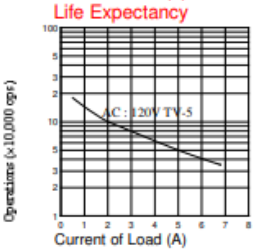


Life Expectancy

AC120V/DC24V cosΦ=1



Life Expectancy



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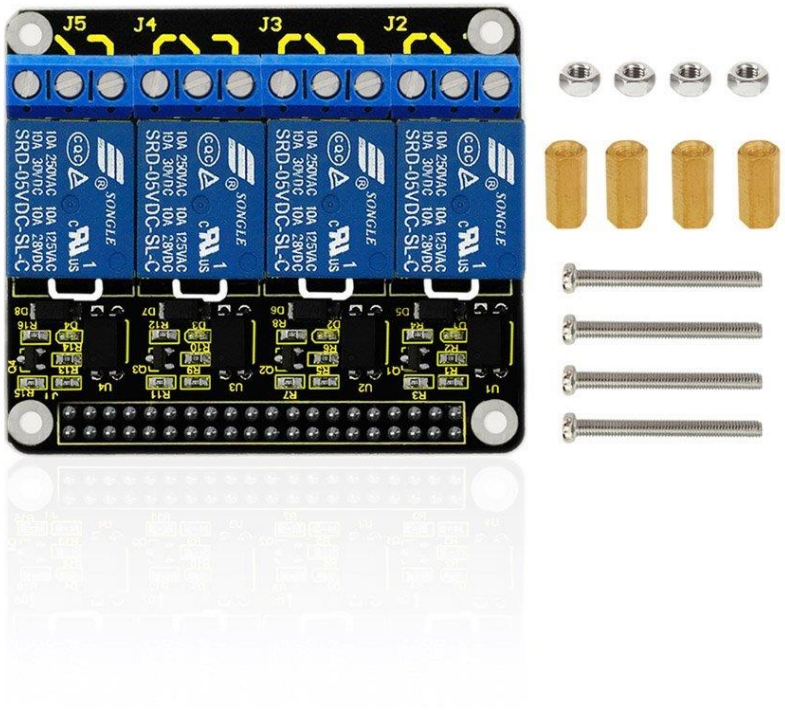
4 Wire to raspberry pi

The recommended board has no wiring, only connect it to the expansion slot on the Raspberry PI.



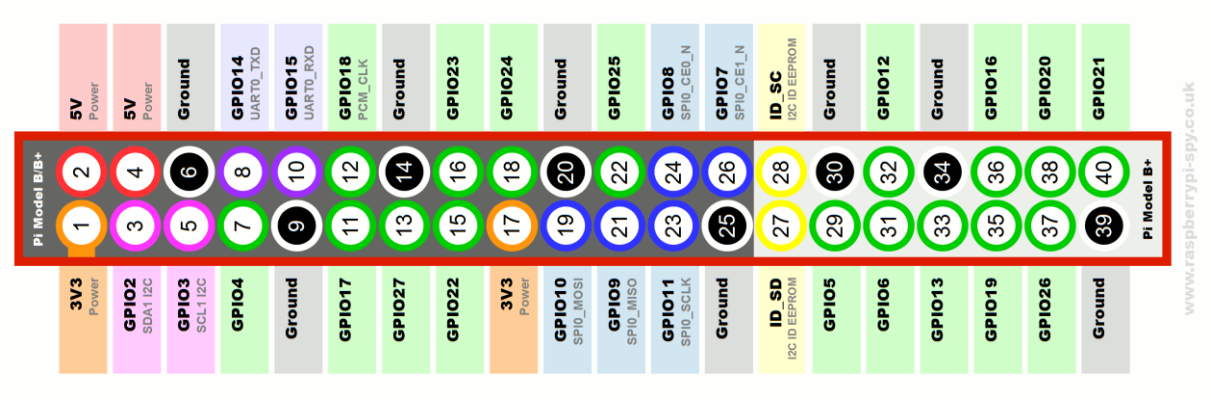
Use the screws as explained in the given manual when purchasing the board.

Relays are mapped as :

Relay number	GPIO	Pin
J2	4	7
J3	22	15
J4	6	31
J5	26	37

The single board need 3 wires :

- +5v : pin 2 or 4
- GND : pin 6, 9, 14, 20, 25, 30 or 39
- Signal : GPIO 4 (pin 7), GPIO 22 (pin 15) , GPIO 6 (pin 31) or GPIO 26 (pin 37)



Wiring the signal to one of those pin keeps the configuration the same from the 4 channels relay board. Only choose the right relay when configuring.

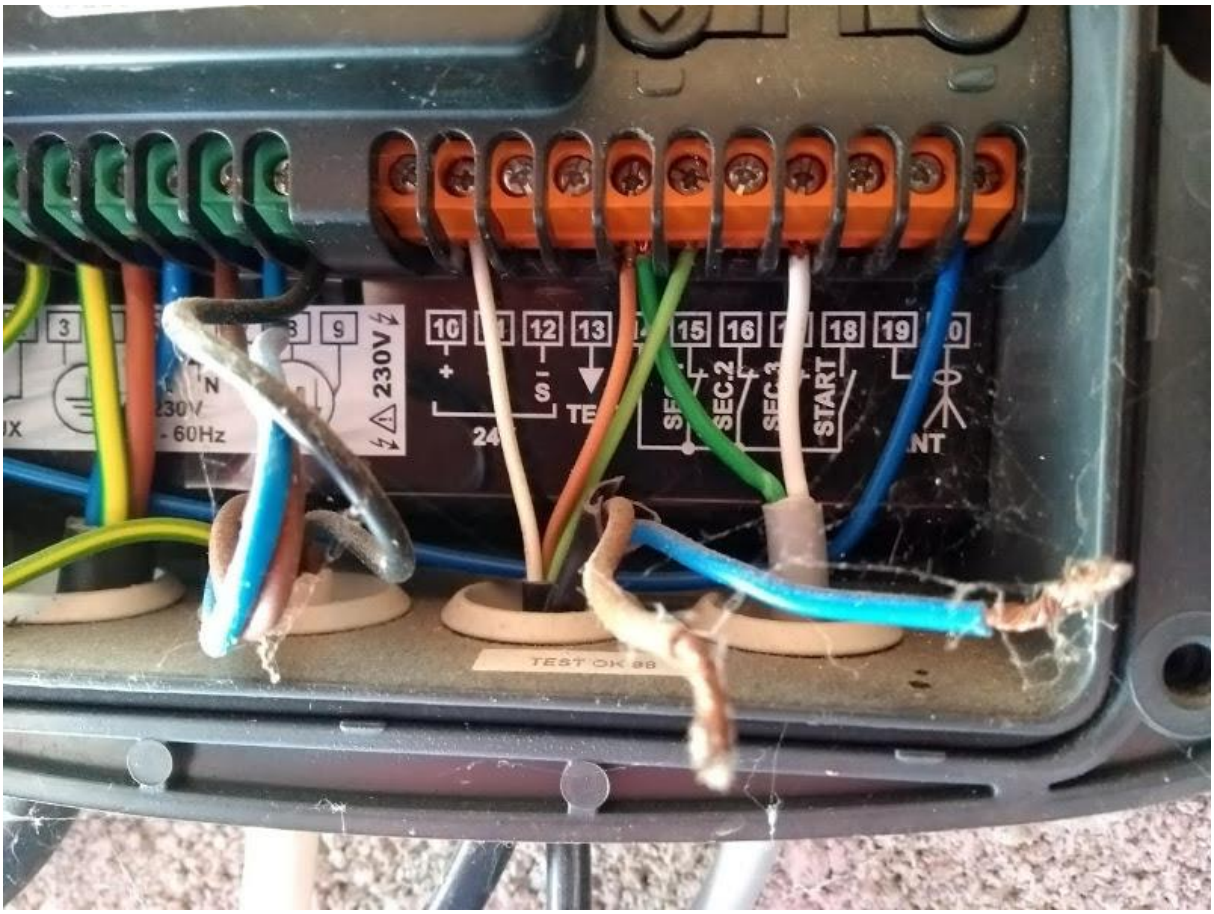
We do not recommend those wires :

Soldering directly your wires is the best solution.

5 Wiring to controller

All controllers have always entries for manual switches or other remote controls. Your relay board operates as one of these.

As example, a Somfy controller :



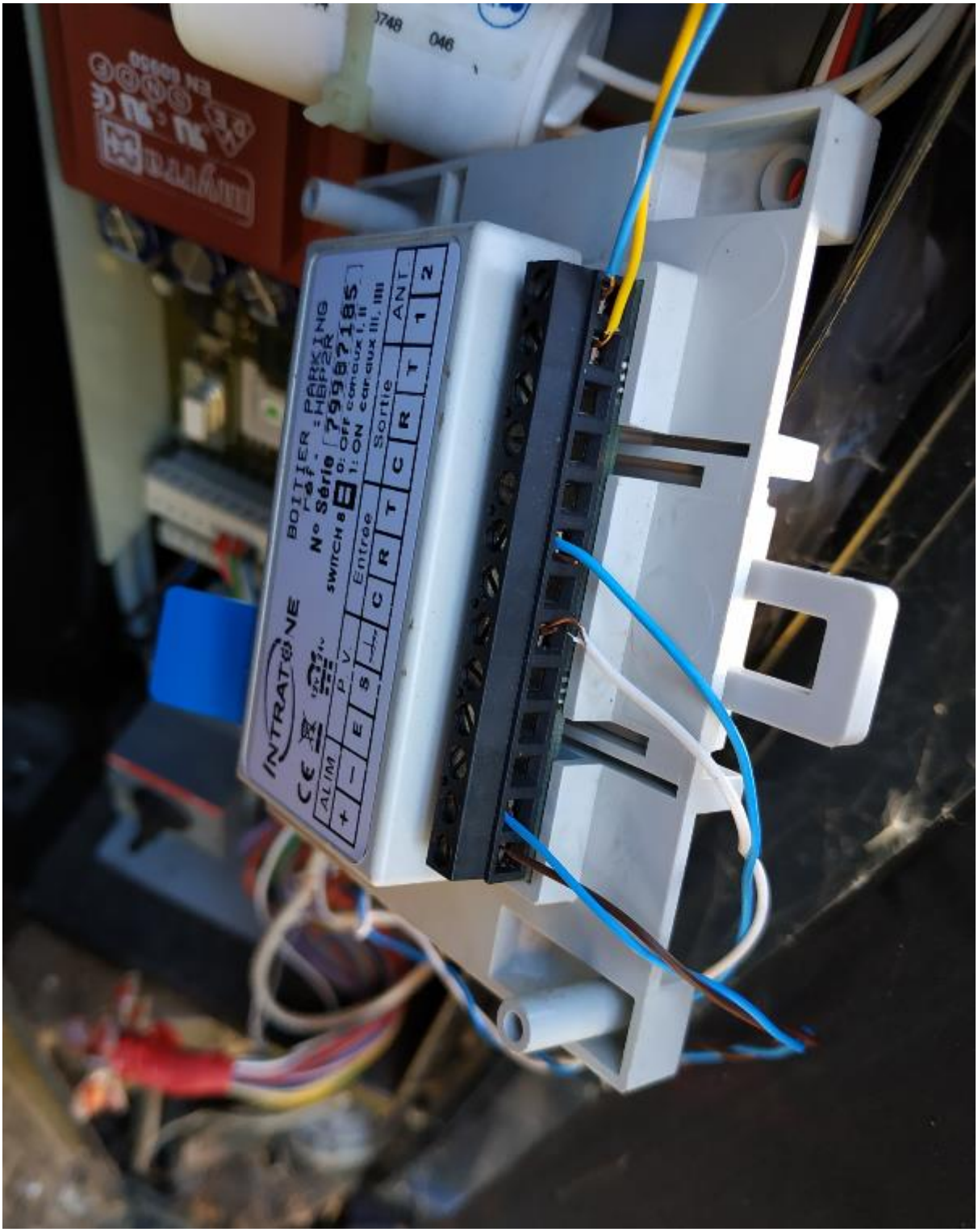
The schema explains :

14 is a common slot.

A push signal between 14 and 18 open it. For this case, 14 is wired to COM and 18 on NO.

By the way, cut a signal between 14 and 15 (or 16 or 17) does the same. In this case, 14 is still wired to COM and 15 to NC.

Other example, Intratone controller :



Take a look at white and blue wires, connected to C and T in “entrée” (entry) section.

Connect “C” to « COM » and “T” to “NO” or “R” to “NC”.

Official documentation :

http://news.intratone.fr/media/notice_installation_centrale_gestion_1_porte__095581600_1350_20082014.pdf