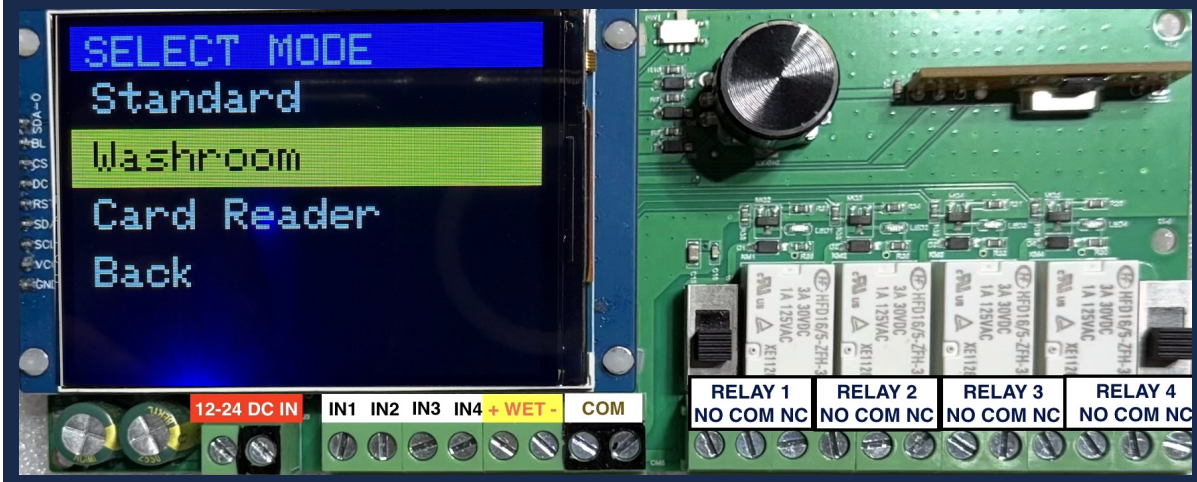
Pivotex

RELAY MASTER

v6.5

Installation & Programming Guide



Advanced Multi-Mode Relay Controller for Automatic Door,

Access Control & Washroom Applications

Firmware v6.5 | 24V DC | 4 Relays | 5 Isolated Inputs | 433 MHz Wireless

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1. GENERAL DESCRIPTION

UL COMPONENTS

The Relay Master v6.5 is a versatile, microcontroller-based multi-mode relay controller designed for automatic door operator systems, access control installations, barrier-free washroom applications, and card reader integrations. Its large TFT colour display and intuitive rotary encoder interface make programming fast and straightforward — even in the field.

Class 2, Extra Low Voltage. This product is equipped with UL Recognized components.

Feature	Detail
Relay Outputs	4 × independent UL Listed dry-contact relays, 3A @ 30VDC — RELAY 1 & 4 configurable for wet output via onboard toggle switch
Inputs	4 × dry-contact inputs (optically isolated) + 1 × wet input (12–24V DC)
Wireless	1 × 433 MHz receiver — up to 5 learned codes, stored in non-volatile memory
Display	2.8" colour TFT (320×240), navigated by rotary encoder with push-select
Operating Modes	3 modes: Standard, Washroom Control, Card Reader
Power	24V DC input
Memory	All settings saved to EEPROM — retained through power cycles
Screen Timeout	Backlight off after 1 hour of inactivity
Menu Timeout	Returns to main menu after 1 minute of no encoder activity

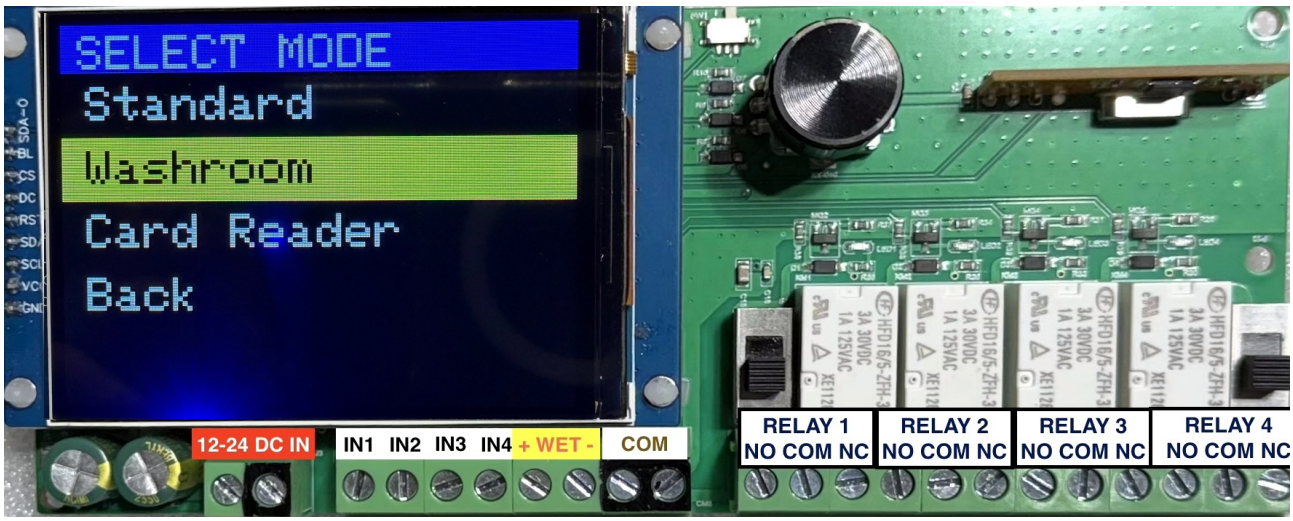


Figure 1 — Relay Master v6.5

2. INSTALLATION AND PROGRAMMING

All programming is performed using the rotary encoder on the board. Rotate to scroll through items or adjust values. Press to confirm a selection. The TFT display guides you through every step.

Entering the Menu

- From the operating screen, press the encoder button to open the main menu.
- Rotate to highlight the desired option. Press to select.
- To navigate back, scroll to the **Back** item and press — or wait 1 minute for automatic return to main menu.

Main Menu Options

Menu Item	Description
Mode	Select operating mode: Standard, Washroom, or Card Reader
Relay On Time	Set the on-time (0.1–300.0 s) for each of the 4 relays individually
Delay Time	Set the activation delay (0.0–300.0 s) for each relay individually
Wireless Inputs	Learn or delete 433 MHz wireless codes (up to 5 inputs)
Reset	Factory reset — clears all settings and wireless codes

Editing Relay Timings

Select **Relay On Time** or **Delay Time**, then select the relay (R1–R4). Rotate the encoder to adjust the value in 0.1-second steps. Press to save. All values are immediately written to EEPROM.

NOTE: If Delay = 0.0 s, the relay activates immediately on trigger. On Time sets how long the relay stays energised.

4. OPERATING MODES

The Relay Master v6.5 supports three operating modes. The active mode is saved to EEPROM and restored on power-up. To change mode, select **Mode** from the main menu. The currently active mode is highlighted in red.

Mode	Description	Wiring Diagram
Standard	General-purpose mode. Each input triggers its corresponding relay independently. All 4 relays are active. Suitable for automatic door, access control, and multi-relay applications.	—
Washroom Control	Designed for barrier-free washroom applications. Controls electric strike (RELAY 1), automatic door operator (RELAY 2), and occupied indicator (RELAY 3). Supports latched occupied state released by door contact.	See Washroom Wiring Diagram
Card Reader	Designed for access control with card reader. Card reader dry contact (INPUT 3) or wet input (INPUT 5) releases the electric strike. Outside button only active during strike release window. Inside button always allows free egress.	See Card Reader Wiring Diagram

5. INPUT & OUTPUT REFERENCE

Physical Inputs (INPUT 1 – INPUT 5)

All 5 inputs are optically isolated via TLP785 optocouplers, providing galvanic isolation between field wiring and the controller. Each input is pulled HIGH internally — it activates when the contact closes to GND (active LOW). Suitable for dry-contact push plates, PIR sensors, door contacts, request-to-exit devices, and similar activating devices. The optical isolation protects the controller from transients on long field cable runs.

Relay Outputs (RELAY 1–RELAY 4)

Each relay is driven by an AO3400 MOSFET switching an HJR4102 relay coil. Outputs are dry (volt-free) contacts — connect your load and power supply in series with the relay NO or NC contact. A freewheeling diode is fitted per relay to suppress inductive kickback. Contact rating: 3A @ 30VDC (UL Listed).

Wet Output Option (RELAY 1 and RELAY 4): RELAY 1 and RELAY 4 can each be configured for wet (powered) output via a toggle switch mounted on the board next to each relay. When switched to wet mode, the board supplies 12–24V DC directly through the relay contact, eliminating the need for a separate power supply for the connected device.

Wireless Inputs (433 MHz)

The Relay Master v6.5 includes an onboard 433 MHz receiver supporting up to 5 independently learned wireless codes. See Section 7 for full setup and operating details.

7. WIRELESS INPUTS — SETUP & OPERATION

The Relay Master v6.5 includes an onboard 433 MHz receiver that can learn up to five independent wireless transmitter codes. Once learned, Wireless Input 1 through Wireless Input 5 behave exactly as if a physical button was connected and pressed on INPUT 1 through INPUT 5 respectively — following whichever operating mode is currently active. No separate wireless mode or configuration is needed.

Important: wireless inputs are additive, not exclusive. Any combination of the following can be connected to the same input simultaneously and all will function together:

- A physical wired button or contact connected to the INPUT terminal on the board
- One or more 433 MHz wireless transmitters learned to that wireless input slot
- Both physical and wireless at the same time — all trigger the same relay logic

For example: a door operator installation may have a wired push plate on INPUT 1 and two wireless key fobs both learned to Wireless Input 1. All three will open the door the same way, independently, without affecting each other.

Learning a Wireless Code

- From the main menu, select **Wireless Inputs** and press the encoder.
- Select the wireless input slot to program (Wireless Input 1 through 5) and press the encoder.
- Select **Learn** and press the encoder. The display shows "LEARNING" with a flashing animation.
- Press the button on your 433 MHz transmitter. The unit captures the transmitted code automatically.
- The display shows **SAVED** in green when the code has been stored to EEPROM.

- If no signal is received within 30 seconds, learning times out and returns to the menu automatically.
- Repeat for additional transmitters — each wireless input slot stores one code, so assign multiple fobs to different slots if they need to trigger the same input.

Deleting a Wireless Code

- From the main menu, select **Wireless Inputs** and press the encoder.
- Select the input slot to clear and press the encoder.
- Select **Delete** and press the encoder. The code is immediately erased from EEPROM.

NOTE: Input slots with a stored code are shown in red in the Wireless Inputs menu. Empty slots are shown in white. Codes are retained in EEPROM and survive power cycles and factory resets only when explicitly deleted. Compatible with standard 433.92 MHz OOK/ASK transmitters (PT2262, EV1527 and similar fixed-code protocols). Not compatible with rolling-code transmitters.

9. WARRANTY

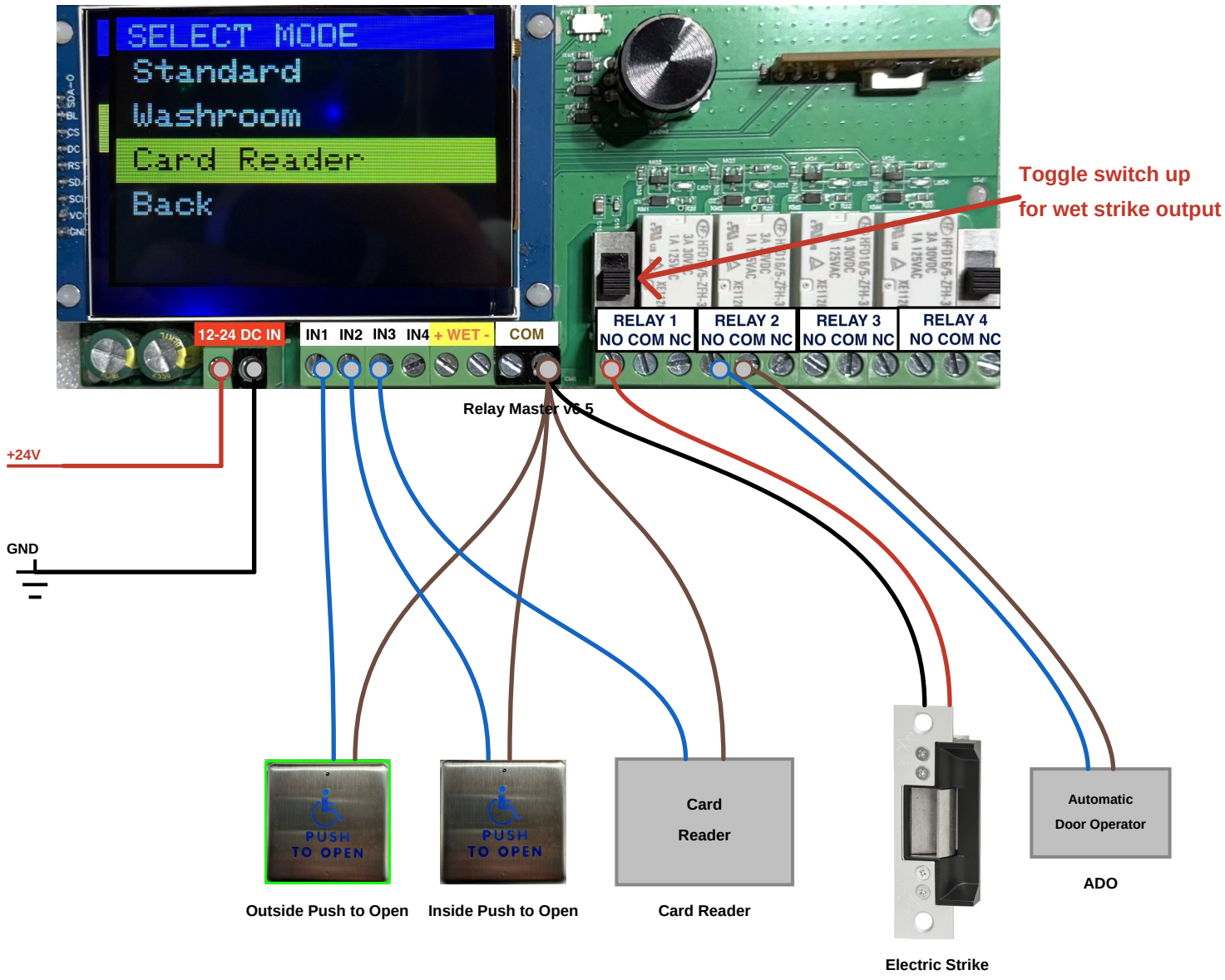
Pivotex guarantees the Relay Master v6.5 to be free from manufacturing defects for **1 year** from the date of sale. If during this period the unit fails to perform correctly under normal use conditions, it may be returned to Pivotex where it will be repaired or replaced at our discretion, without charge.

This warranty does not cover damage resulting from incorrect installation, connection of voltages or loads outside the specified ratings, physical damage, water ingress, or unauthorized modification of the hardware or firmware.

Except as stated herein, Pivotex extends no warranties expressed or implied regarding function, performance, or fitness for a particular purpose.

CARD READER WIRING DIAGRAM

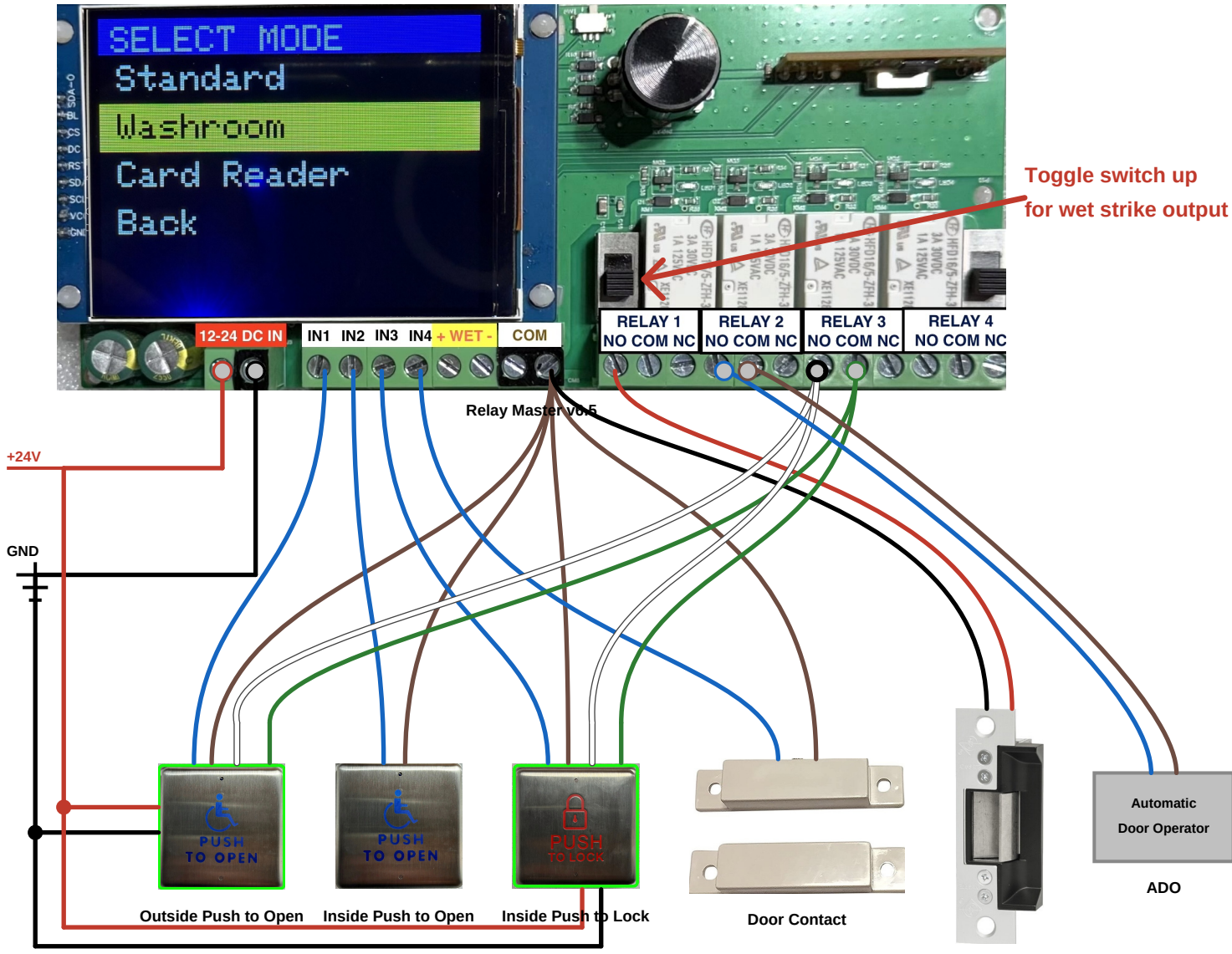
The diagram below shows the Card Reader mode wiring. Outside Push to Open (secured side) connects to INPUT 1. Inside Push to Open (unsecured side) connects to INPUT 2. Card Reader dry contact connects to INPUT 3. Electric Strike connects to RELAY 1 NO and COM. Automatic Door Operator connects to RELAY 2 NO and COM.



NOTE: Card reader dry contact (INPUT 3) releases the strike immediately. Outside button is only functional while strike is active. Inside button always releases strike and opens ADO.

WASHROOM WIRING DIAGRAM

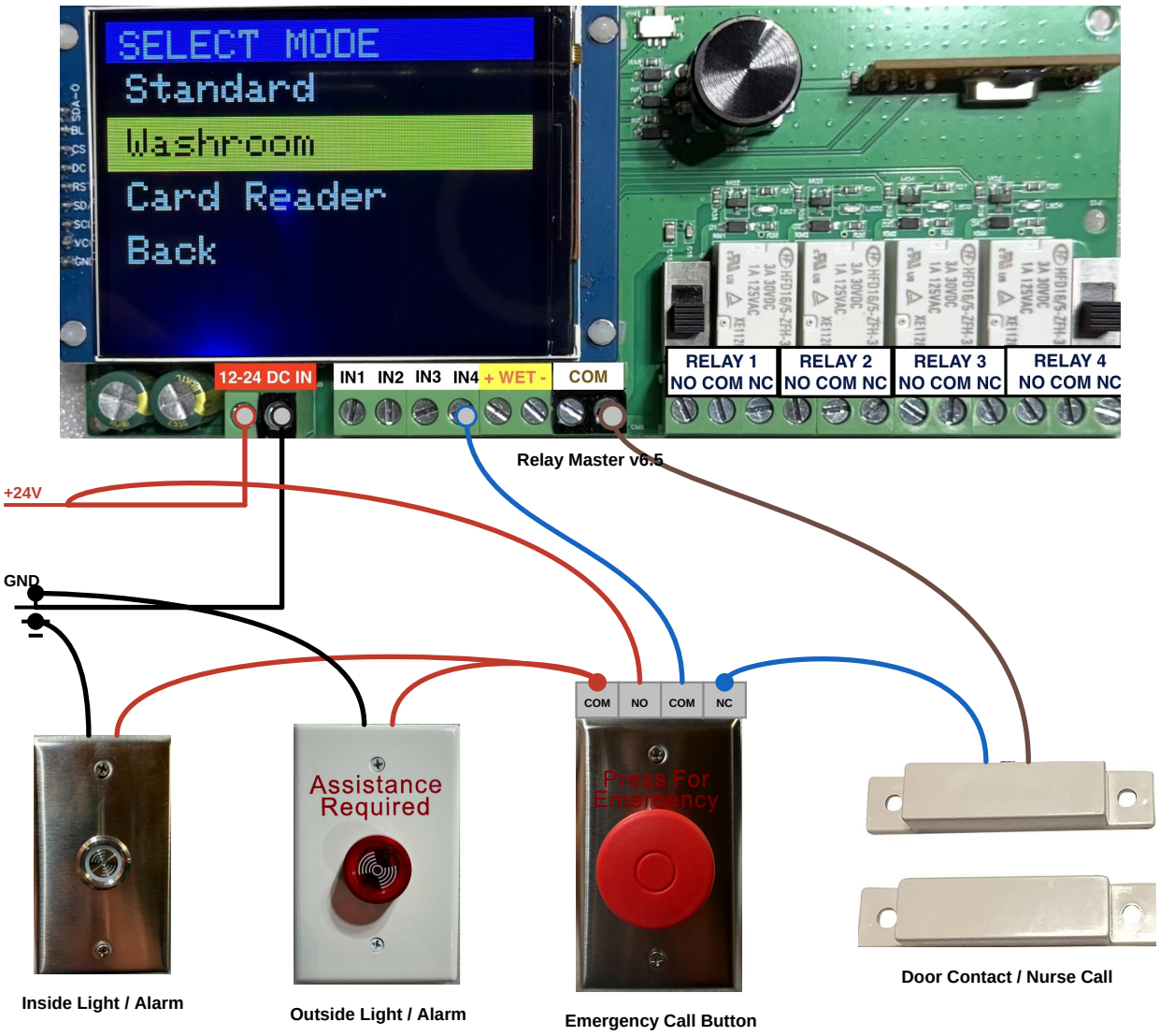
The diagram below shows three push plates and a door contact wired to the Relay Master v6.5. Outside Push to Open (4 wires): blue to INPUT 1, brown to COM, red and black to shared 24V power supply. Inside Push to Open (2 wires): blue to INPUT 2, brown to COM. Inside Push to Lock (4 wires): blue to INPUT 3, brown to COM — red and black exit the bottom and connect to the same power supply as the Outside button. Door Contact (2 wires): blue to INPUT 4, brown to COM.



NOTE: Outside Push to Open and Inside Push to Lock share the same 24V DC power supply — their red and black wires are joined together. Inside Push to Open and Door Contact are dry contacts only — no power required. Door Contact INPUT 4 is used in Washroom mode to automatically unlatch the strike and occupied sign when the door opens.

EMERGENCY / NURSE CALL SYSTEM

The diagram below shows the Relay Master v6.5 wired for an emergency or nurse call system. A dry contact input (door contact, call button, or pull cord) connects to INPUT 4 and COM. Power supply connects to the DC IN terminals.



NOTE: The door contact or nurse call dry contact connects to INPUT 4 and COM. INPUT 4 activates when the contact closes. The Relay Master is powered by 24V DC connected to the DC IN terminals.

OMEGA OPERATOR WIRING