NFC Gateway Wiring & Install Guide

How to attach the touchpoints (card readers) to the gateway and to change the behavior of the relays controlling the door/turnstile/access device.

Tools Needed

- Phillips screwdriver
- Small (< = 2mm) flathead screwdriver

Touchpoints/Card Readers

IMPORTANT NOTE: Cardscanners are low-voltage serial communication cablesthat comply with RS- 232 standards. Cabling lengths over 50ft can suffer degradation in performance, or fail to work altogether. It is recommended to place the gateway as near to the access point as possible without compromising security.

Readers require AC power meeting ANSI C84.1 specifications. Generator power is notoriously hard on electronic devices due to noise/dirty power that can cause readers to fail on some occasions. If you are noticing failure from multiple readers connected the same generator then you need a UPS or another battery back up system to condition the power before it is fed into a reader.

Installation Instructions

1. Open the gateway enclosure by undoing the four screws at each corner.

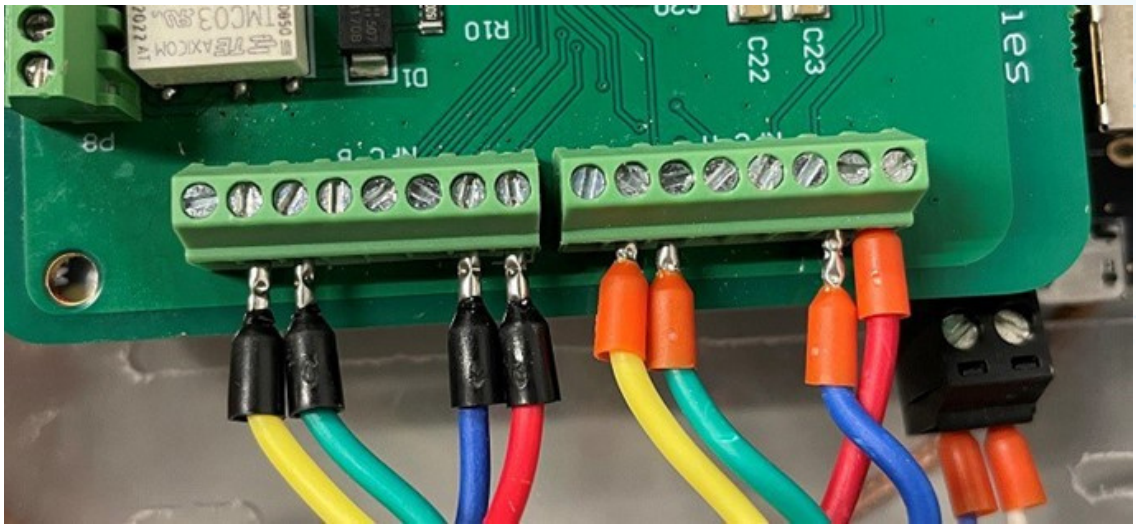
2. NFC card readers should ship already attached to their cables. Locate the other (exposed) end, which should have four capped wires sticking out past the casing: red, green, yellow, blue.

3. Thread the exposed end through a numbered port on the gateway enclosure. You can loosen the port clamps to facilitate this process by unscrewing the hex dial around the port.

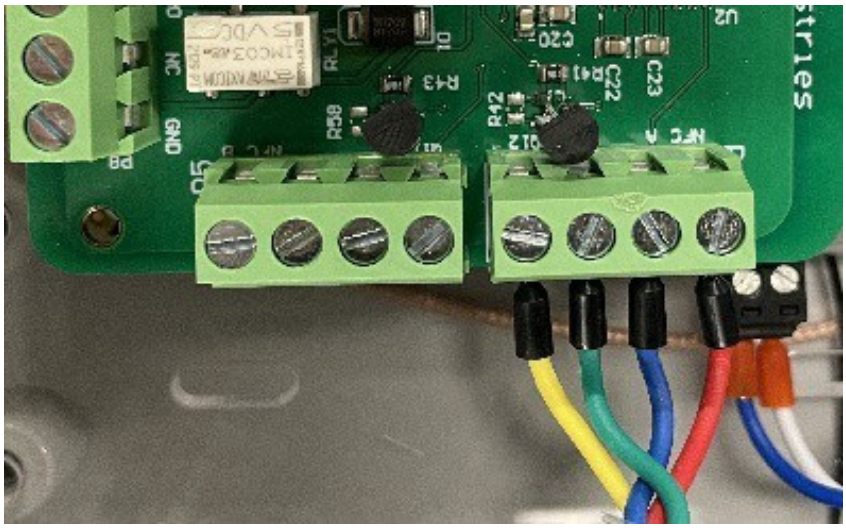
    a. When setting up a gateway to allow for bidirectional access (one card reader "in" and one card reader "out", vs both readers "in" or out"), Eyrus strongly recommends threading the "in" reader's wire through Port 1 and the "out" reader's wire through Port 2.

4. Attach the wires to the circuit board as shown below. (Wiring diagrams at the end of the card). Each set of ports will be labeled "NFC-A" or "NFC-B" respectively.

8-pin ports:



4-pin ports:



a. The cable coming through Port 1 should connect to the "NFC-A" terminal (right side); the cable coming through Port 2 should connect to the "NFC-B" terminal (left side).

b. The terminal labels are printed on the board above the terminal.

5. Screw down the ports once the wires are fully inserted. A tight connection is critical to ensure there are no read issues or other problems with reads.

6. Repeat the process for the other reader if necessary.

7. Test the reader:

   a. Plug in the reader. The circuit board should beep and illuminate several LEDs on the board. The card readers should also light their LEDs: the reader plugged into the left port should be green, the reader plugged into the right should be red.

   b. If card reader LEDs are flickering, unplug the reader and check the connections are properly tightened. Also ensure the card reader is free from undue EM interference (e.g. placing it on a coil of charged wire).

   c. If the gateway is connected to the internet, scan a valid NFC card on each reader. Successful reads will log to the device console and fire the relay. The relay will emit an audible click and light a green LED, then turn off the LED and click again after a preset time.

8. Close the reader enclosure and install the gateway.

Touchpoint Wiring Schema

8-pin ports:

Port (Left > Right)	1	2	3	4	5	6	7	8
Wire	X	Yellow	Green	X	X	X	Blue	Red

4-pin ports:

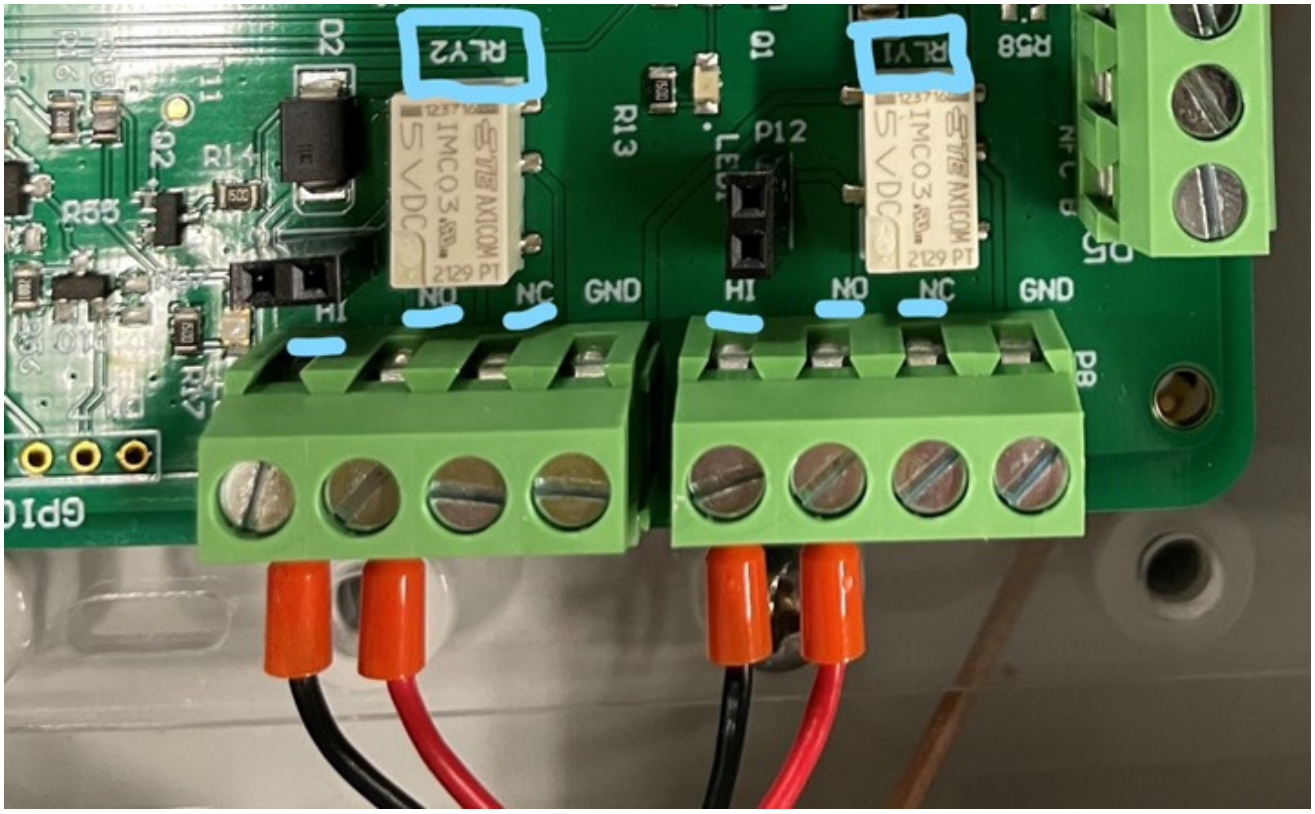
Port (Left > Right)	1	2	3	4
Wire	Yellow	Green	Blue	Red

Relays

Configuration Instructions

By default, Eyrus NFC readers come with two sets of relay wires already attached to the circuit board. The relay wires are black, attached to the HI port for each relay, and red, attached to the NO port.
Each relay is labeled RLY1 or RLY2, and matches up to an NFC port:

Relay	Card Reader
RLY1	NFC-A
RLY2	NFC-B



The relays work by completing or breaking a circuit when access is granted. To change relay behavior, move the red wire between the NO and NC ports as appropriate:

- NO - Normally Open: The relay circuit remains incomplete until access is granted, at which point the circuit is closed and power delivered to the door or turnstile.
- NC - Normally Closed: The relay circuit remains closed until access is granted, at which point the circuit is broken and power ceases to be delivered to the door or turnstile.

Relay Wiring Schema

Port (Left > Right)	HI	NO	NC	GND
Wire	Black	Red (if desired behavior)	Red (if desired behavior)	X

MAC Turnstile Wiring

Each control box will have two sets of gray relay wires attached to the bottom. These relay wires will be attached to the access control device circuitry. Configuration depends on the individual turnstile or door. Below are provided instructions for one of the more common access control solutions, the MSSI MAC turnstile. Instructions can be adapted for use with other access control systems; contact Eyrus support for more information.

MAC Turnstile Wiring Diagram