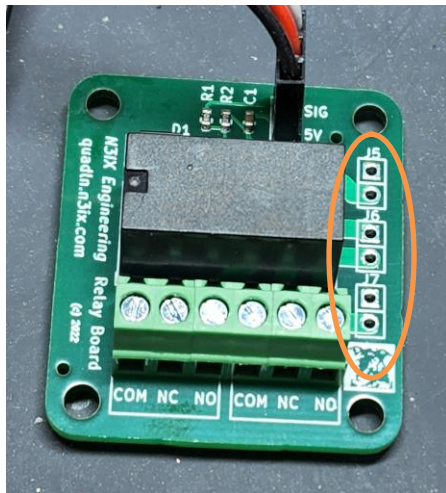




## QuadLN\_S Relay Board Instructions

The Relay Board connects to any *QuadLN\_S* IO Port or Signal Board LED output and provides DPDT contacts with maximum current of 2 Amps @ 24 Volts DC (1 Amp @ 120 Volts AC) for control of frog polarity or other signals. **Do not exceed the maximum current rating.**

The Relay Board draws only 30 mA when the relay is activated. A bank of Relay Boards could be used with a single *QuadLN\_S* or Signal board for control of lighting or other special applications.



There are 3 **Jumpers** locations for easily connecting the 2 sets of contacts in parallel.

## Connecting a Relay Board to the QuadLN\_S

A Relay Board can be controlled from a *QuadLN\_S* General Purpose Input/Output pin or from a Turnout Output pin (Turnout Output requires firmware version 3.1 or later).

### Using a General Purpose I/O Pin

When a Relay Board is connected to a General Purpose I/O pin, the Relay will follow the state of the associated Turnout (the Turnout in the same Group as the I/O pin). “Y” cables can be used to interface both a Relay Board and a Fascia Controller to the same pin. **BE SURE TO SET THE LED MODE FOR THE I/O TO EITHER Steady or Position** – other settings do not provide steady drive and will shorten relay life.

- **Steady Drive** – best for frog power: relay changes state when the servo passes the travel midpoint
- **Position** – relay changes state when the servo reaches its commanded position and stops



## Connecting a Relay Board and a Fascia Controller (or momentary pushbutton) to the Same I/O Pin

AUX IO 1

Address LS

INPUT

Type

Trigger

DCC Freeze

TURNOUT 1 INDICATION

LED Mode

LED Drive

Set the **LED Mode** to **Steady Drive** or **Position**.  
Set the **Trigger** to **Negative Edge** or **Positive Edge**.  
This is done on the **Group** tab that contains the IO pin.

## Connecting only a Relay Board to an I/O Pin

AUX IO 1

Address LS

INPUT

Type

Trigger

DCC Freeze

TURNOUT 1 INDICATION

LED Mode

LED Drive

Set the **LED Mode** to **Steady Drive** or **Position**.  
Set the **Trigger** to **None**.  
This is done on the **Group** tab that contains the IO pin.

## Using a Turnout Output Pin (firmware version 3.1 or later)

Using a Turnout Output pin set for **Stall/Relay Drive** allows the Relay to be controlled either independently or in sync with another Turnout. **DO NOT CONNECT TO AN OUTPUT SET FOR SERVO DRIVE.**

## Connecting a Relay Board to a Turnout Output Pin

SERVO 1 TURNOUT

Address LT

Lock LT

DRIVE

Type

Change Point

Set the **Type** to **Stall/Relay**  
Set the **Change Point** to **Delayed** or **Immediate** as desired  
This is done on the **Group** tab that contains the Turnout