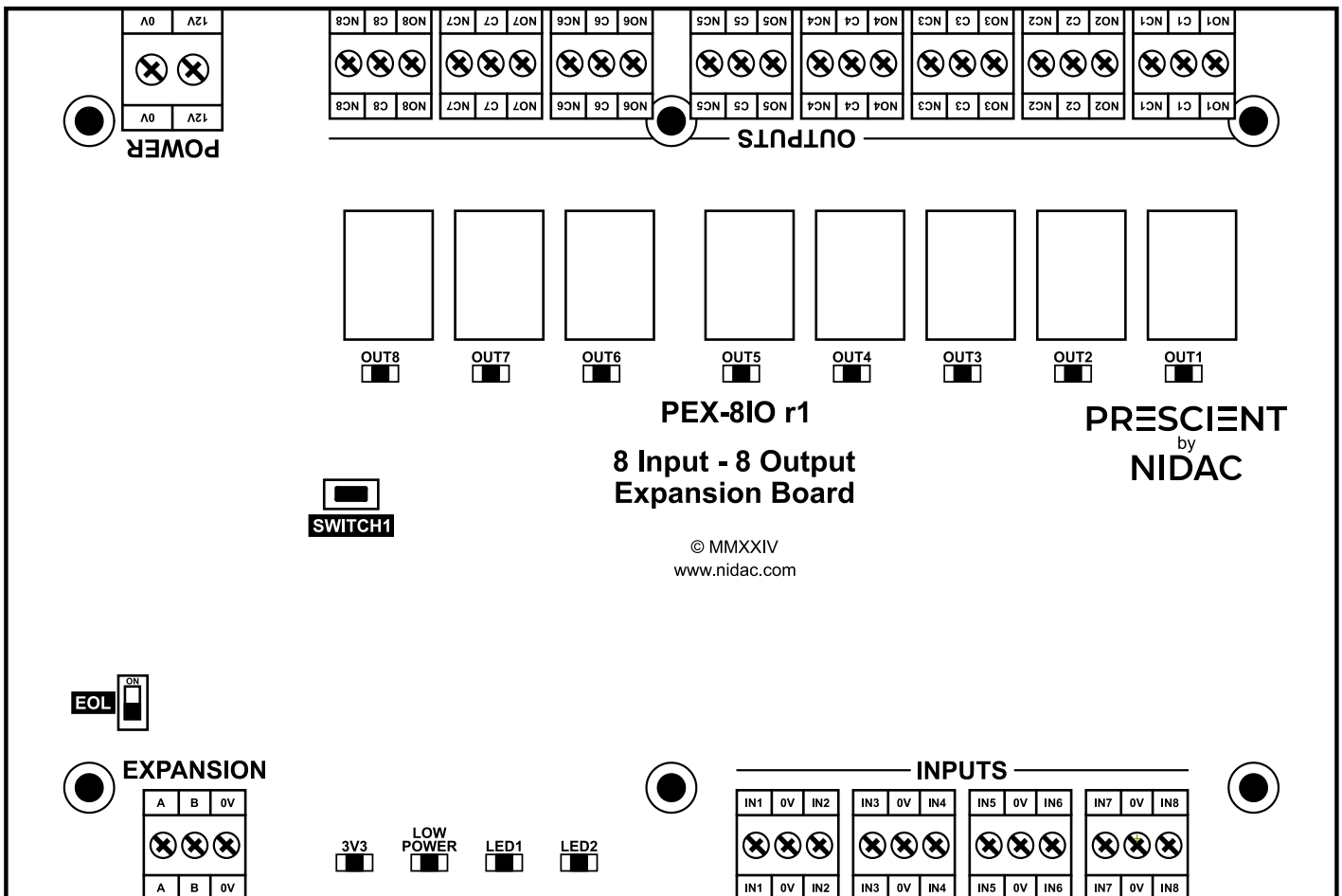# PRESCIENT® by NIDAC
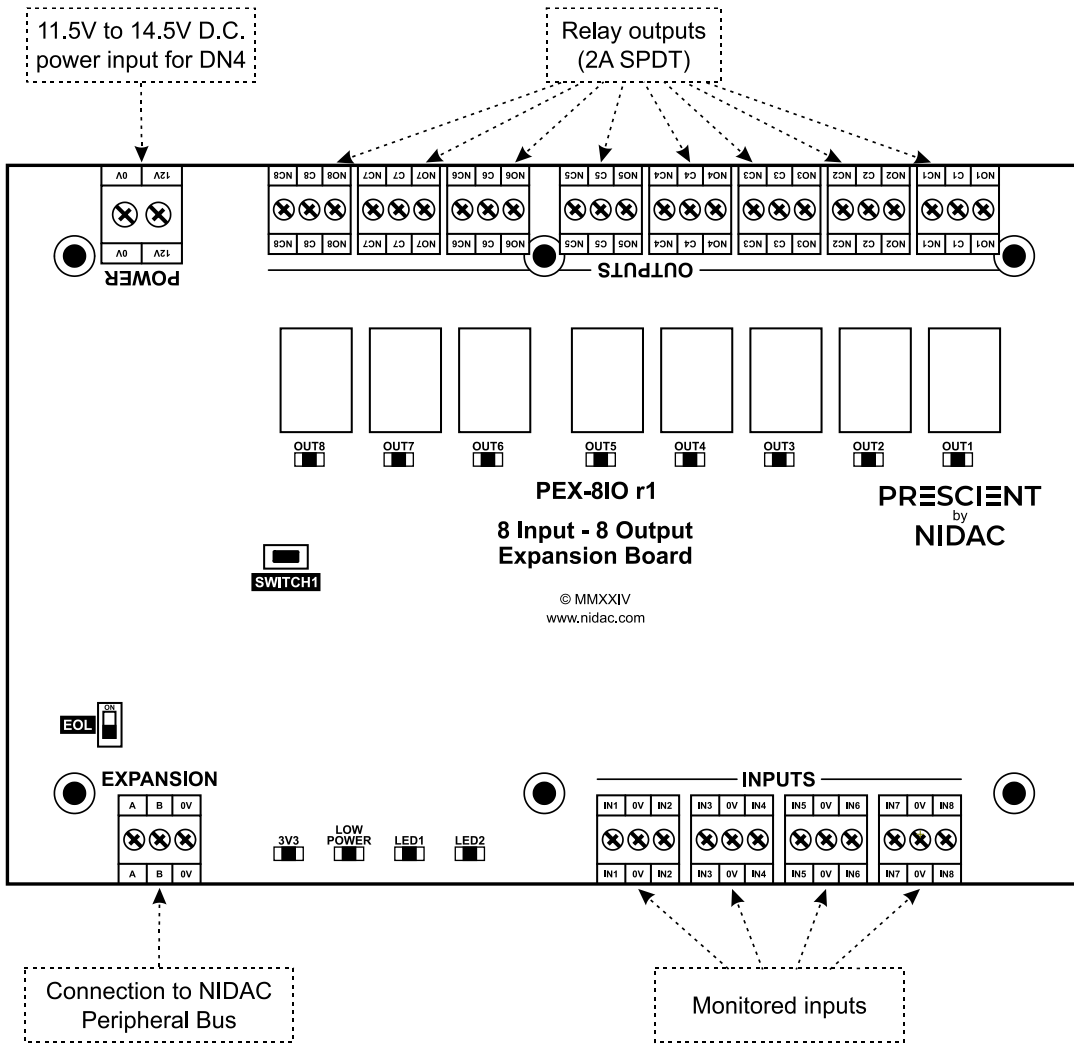
PEX-8IO r1 HARDWARE GUIDE

Version 1.0

Features

- 8 Input and 8 Output expansion board for use with DN4
- RS485 NIDAC expansion bus
- 8 x supervised inputs
- 8 x SPDT relays for control

Specifications

- Power: 11.5 to 14.5V D.C. @ 200mA
- Dimensions: 160 x 107 x 35mm (W x D x H)
- Relays: 50V D.C. max, 2A
- Inputs: Can support monitored EOL resistor values of 1K to 10K

Connections

POWER

12V	+11.5 to 14.5V D.C. power input for PEX-8IO
0V	Negative or GND connection from power supply

INPUTS 1-8

INx	Selectable as NO, NC or EOL resistor supervised
0V	Connection to 0V power input

OUTPUTS 1-8

NOx	Normally Open relay contact
Cx	Common relay contact
NCx	Normally Closed relay contact

EXPANSION

Use this to connect to the PEX-8IO to Expansion Bus.

SWITCH1

To reboot the PEX-8IO press and hold for between 5 and 10 seconds then release.

To perform a device address reset press and hold for between 10 and 15 seconds then release.

Holding the button pressed for more than 15 seconds will cancel the reboot/reset.

Indicators

3V3	Indicates onboard 3V3 power is present for the ARM processor
LOW POWER	Indicates the voltage into the PEX-8IO is too low to ensure reliable relay switching

| LED1	LED2	
off	off	Abnormal behaviour, if 3V3 LED is lit try cycle power
ON	off	The PEX-8IO is in discovery mode, waiting for an address to be allocated by the DN4 attached to the expansion port
off	ON	The PEX-8IO is in normal operating mode
ON	ON	Abnormal behaviour, if 3V3 LED is lit try cycle power
Blinking	off	The PEX-8IO will reboot when SWITCH1 is released
off	Blinking	The PEX-8IO will perform a device address reset when SWITCH1 is released

Power Wiring

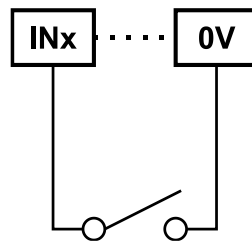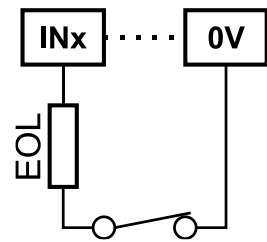NIDAC recommends using a battery backed 13.8V D.C. power supply.
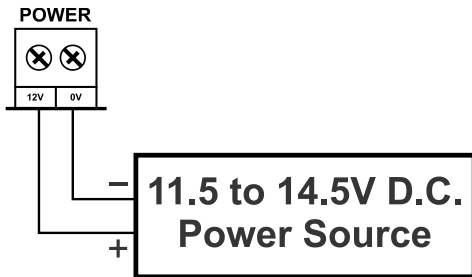
Input Wiring

All inputs can be used for either exit buttons or door monitoring, each is selectable as NO, NC or EOL resistor supervised to match the device and wiring being used. The default value for the EOLs is 4.7K however standard values from 1K to 10K can be used.
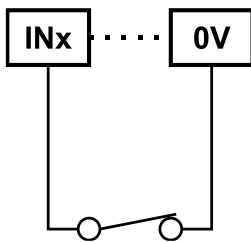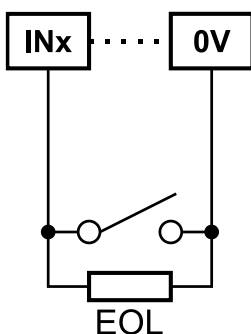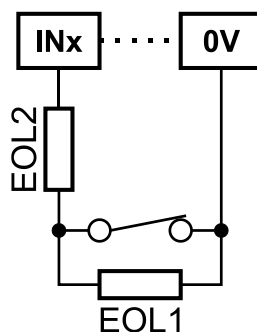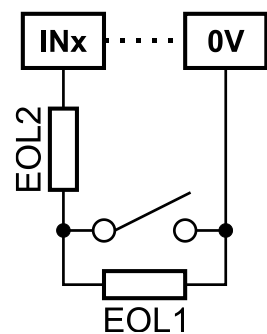

Unsupervised NC

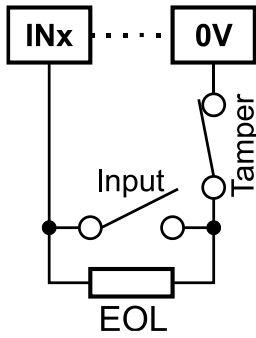

Unsupervised NO

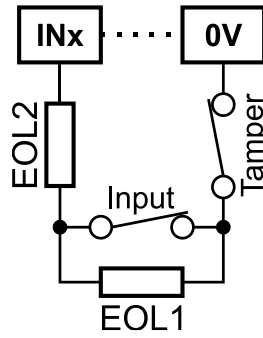NC with 1 EOL resistor

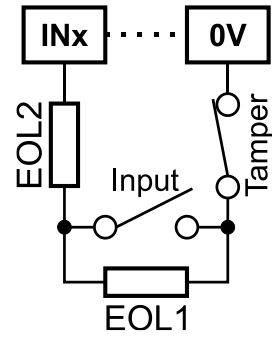NO with 1 EOL resistor

NC with 2 EOL resistors

NO with 2 EOL resistors

NO with 1 EOL resistor
and NC tamper

NC with 2 EOL resistors
and NC tamper

NO with 2 EOL resistors
and NC tamper

Expansion Bus Wiring

The PEX-8IO requires a connection to a single DN4

- Wiring is required to be done in daisy chain configuration

- The DN4 can be at the end or within the daisy chain

- It is highly recommended to use specific RS485 cable for wiring of the expansion bus

- The device on each end of the daisy chain requires EOL termination for the most reliable communication. When using RS485 cable, the EOL switches on the Prescient devices enable EOL termination. When using other cable an appropriate line matching resistor will need to be installed in the terminal block

- Star wiring configuration is not recommended
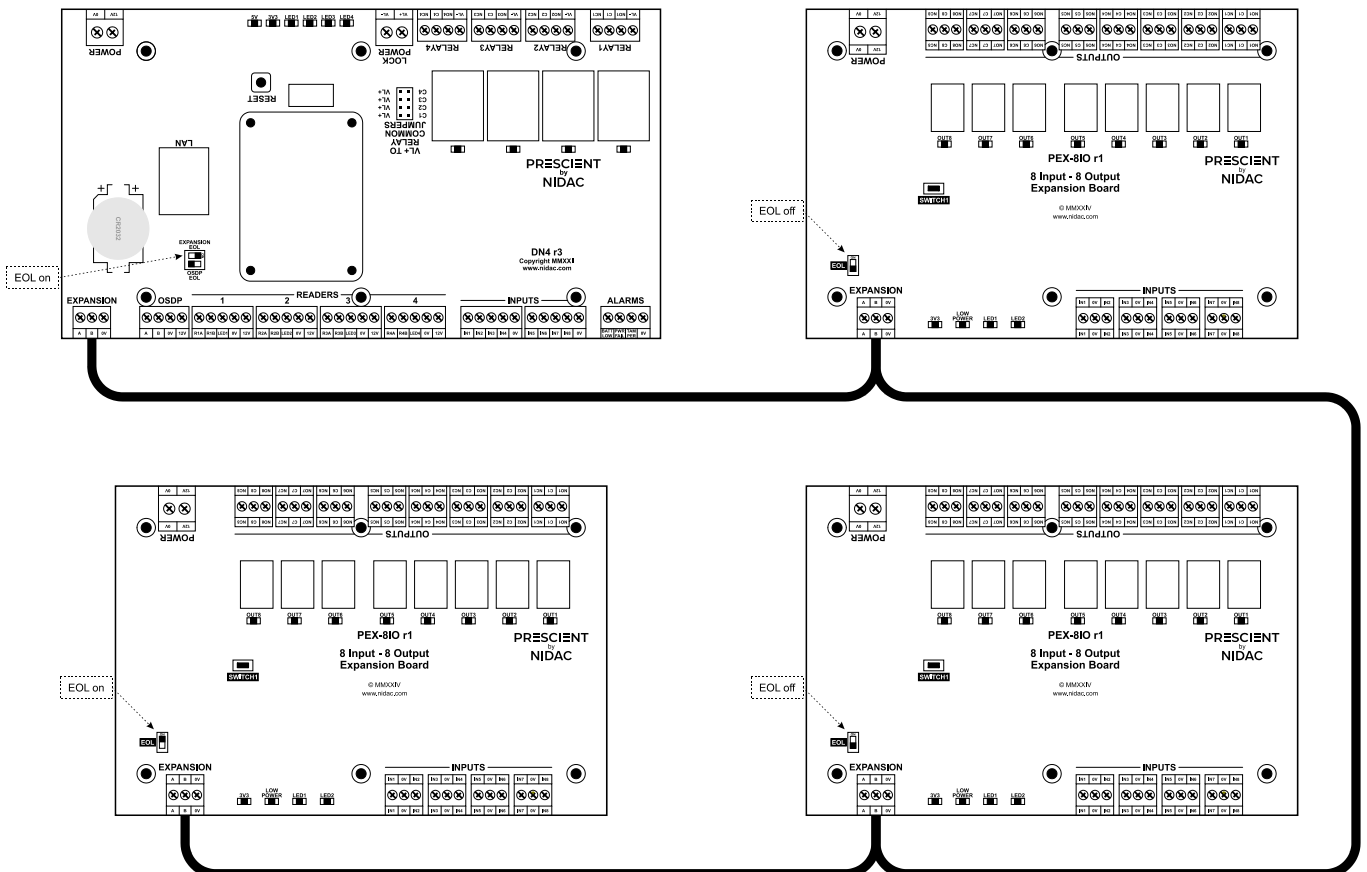
Expansion Bus wiring with the DN4 at one end of the daisy chain
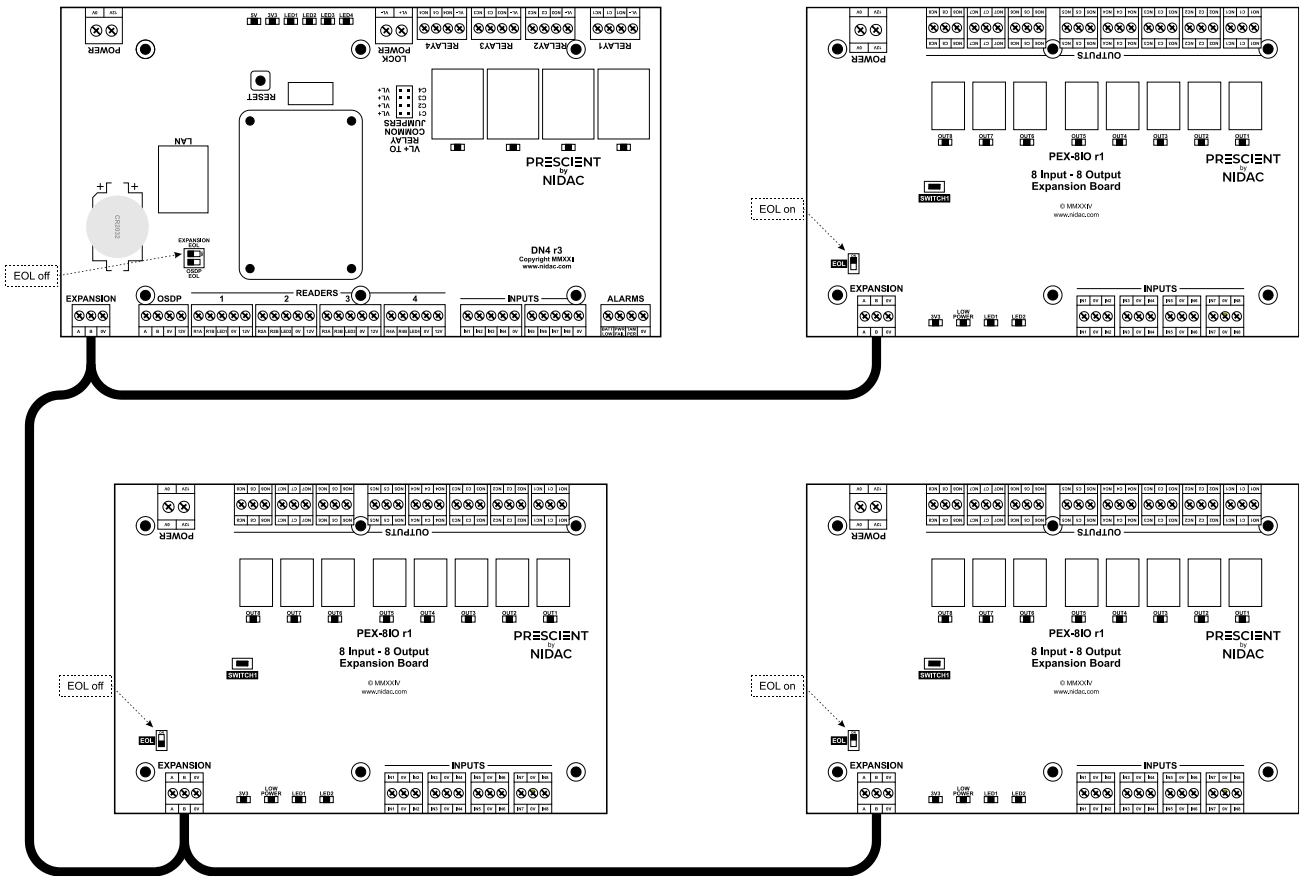
Expansion Bus wiring with the DN4 within the within the daisy chain
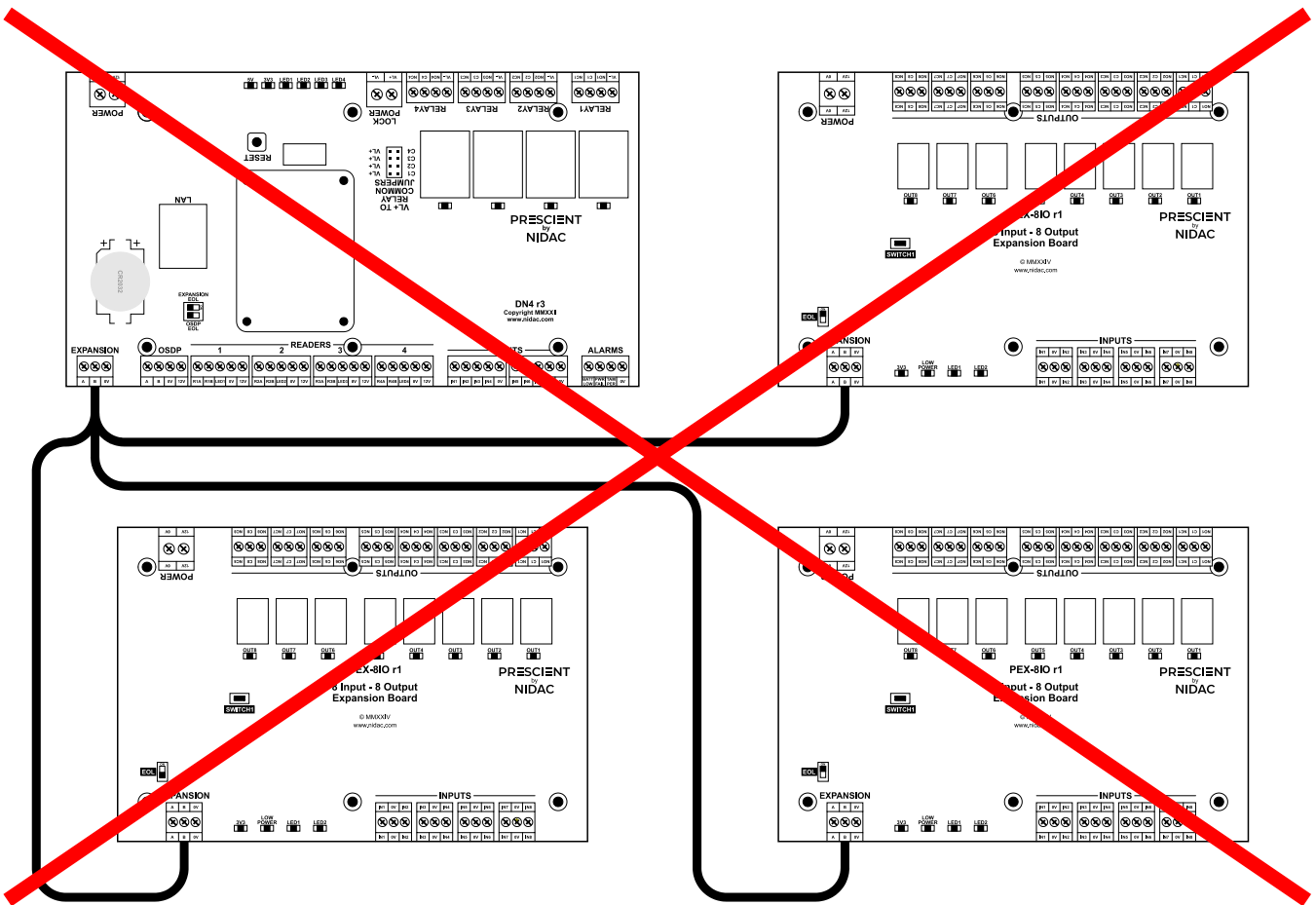
Incorrect star wiring configuration

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