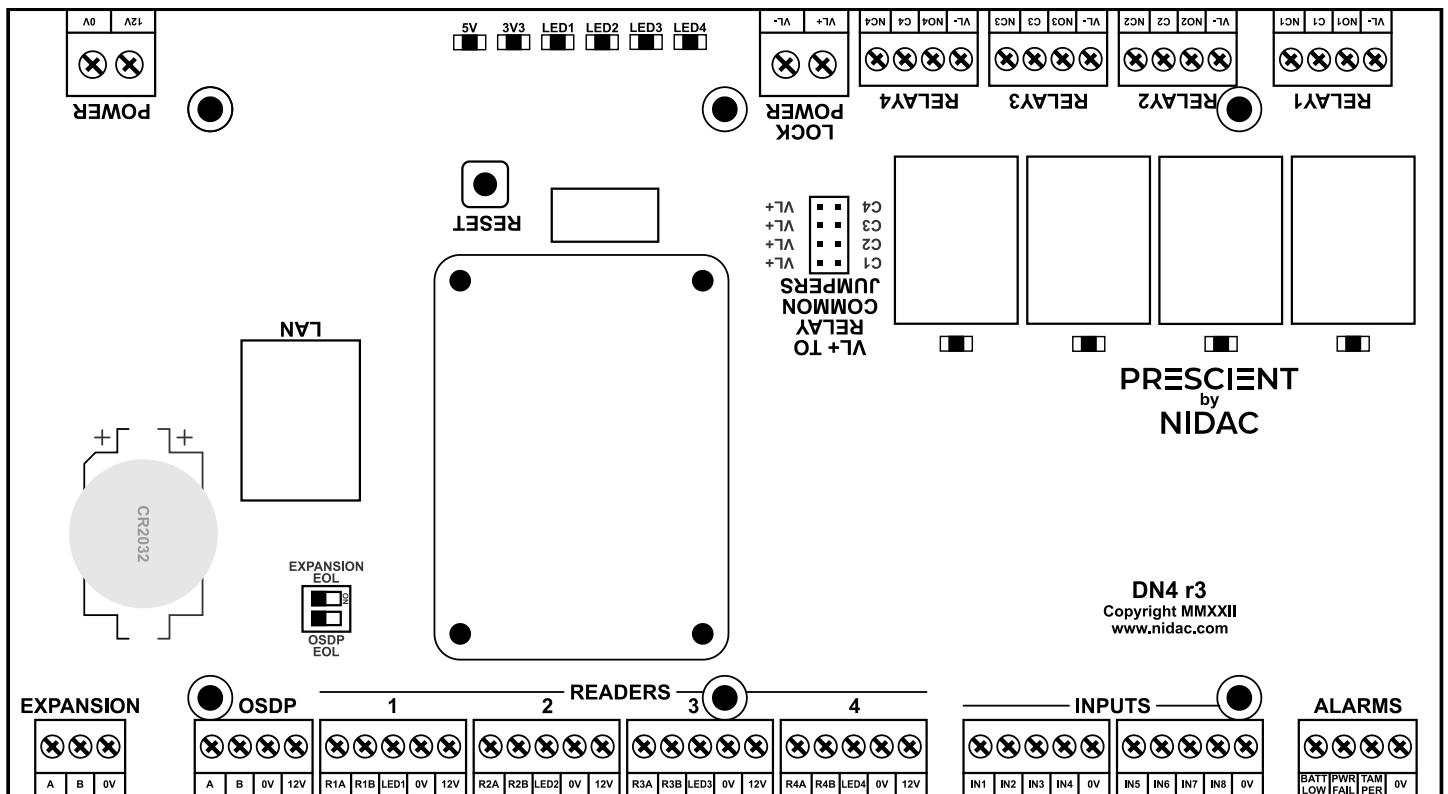


PRESCIENT[®] by NIDAC

DN4 r3 HARDWARE GUIDE

Version 1.3.3



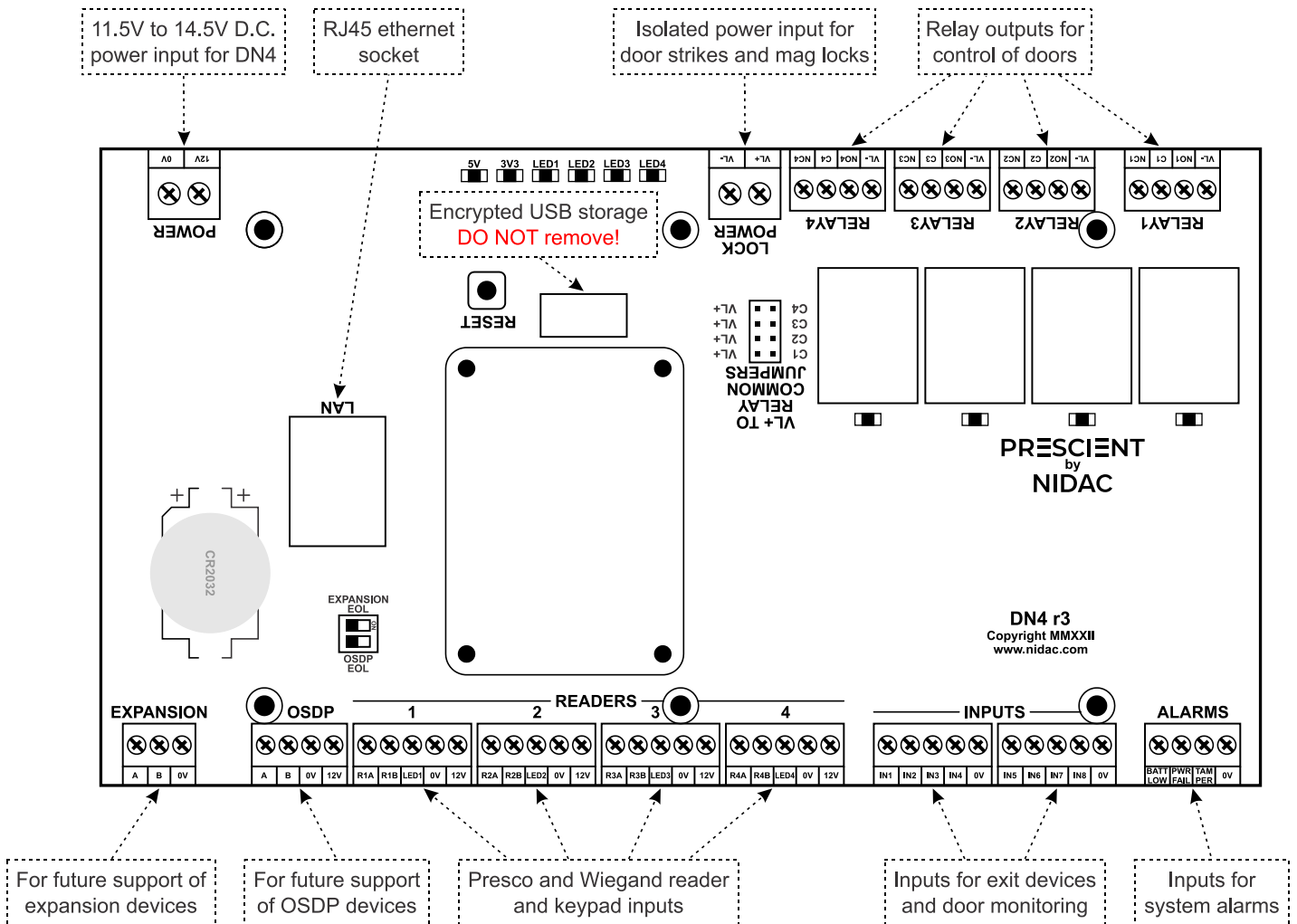
Features

- Powerful quad-core ARM Cortex-A72 processor
- 1Gbps LAN connection
- 4 x Reader inputs for Wiegand and NIDAC Prove peripherals
- 8 x supervised inputs for door monitoring and request to exit
- 3 x NO/NC inputs for alarm input monitoring
- 4 x SPDT relays for door control
- Separate isolated power input for door locking devices
- Battery backed RTC to keep system time whilst powered down

Specifications

- Power: 11.5 to 14.5V D.C. @ 1A
- Dimensions: 195 x 107 x 31mm (W x D x H)
- Relays: 28V D.C. max, continuous 2.5A, surge 4A

Connections



POWER

12V	+11.5 to 14.5V D.C. power input for DN4
0V	Negative or GND connection from power supply

READERS 1-4

RxA	Wiegand D0 data input
RxB	Wiegand D1 or Presco DTA data input
LEDx	Reader LED control output, negative drive for Wiegand and positive for Prove peripherals
0V	Connection to 0V power input
12V	Fused connection to 12V power input

INPUTS 1-8

INx	Selectable as NO, NC or EOL resistor supervised for request to exit or door monitoring
0V	Connection to 0V power input

ALARMS

BATT LOW	NO or NC input used to register a battery low condition
PWR FAIL	NO or NC input used to register a mains power failure condition
TAMPER	NO or NC input used to register an enclosure tamper condition
0V	Connection to 0V power input

LOCK POWER

VL+	Positive connection from power supply for door locking devices
VL-	Negative or GND connection from power supply for door locking devices

RELAY1, RELAY2, RELAY3, RELAY4

VL-	Connection to VL- power input, to be used as negative connection on door locking device
NOx	Normally Open relay contact for fail secure door release devices
Cx	Common relay contact, can be voltage free or connected to VL+ via jumpers
NCx	Normally Closed relay contact for fail safe door locking devices

EXPANSION

Use of this connection is currently not implemented but has been provided for future support of expansion devices.

OSDP

Use of this connection is currently not implemented but has been provided for future support of OSDP peripherals.

Reset Button

To reboot the DN4 press and hold for between 3 and 10 seconds then release.

To perform network reset press and hold for between 10 and 15 seconds then release.

To perform password reset press and hold for between 15 and 20 seconds then release.

To perform a factory reset press and hold for between 20 and 30 seconds then release.

Holding the button pressed for more than 30 seconds will cancel the reboot/reset.

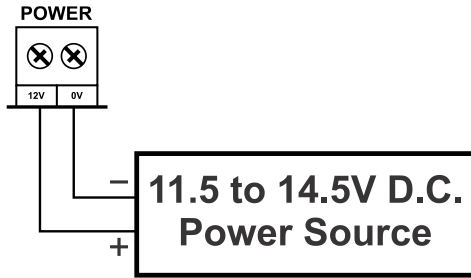
Indicators

5V	Indicates the onboard 5V regulator is providing power to internal circuitry. If it is unlit check the power to the DN4
3V3	Indicates onboard 3V3 power is present for the ARM processor. If it is unlit but the 5V LED is on power cycle the DN4
LED1	Indicates the DN4 controller is accessing memory

LED2	LED3	LED4	
off	off	off	Normal operating mode, no reboot or reset pending
ON	off	off	The DN4 will reboot when the reset button is released
off	ON	off	The DN4 will perform network reset when the reset button is released
off	off	ON	The DN4 will perform password reset when the reset button is released
ON	ON	ON	The DN4 will perform a factory reset when the reset button is released

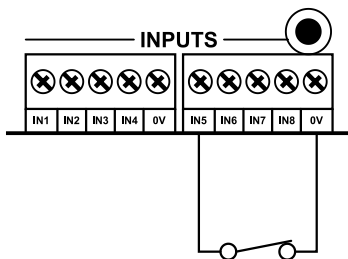
Power Wiring

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

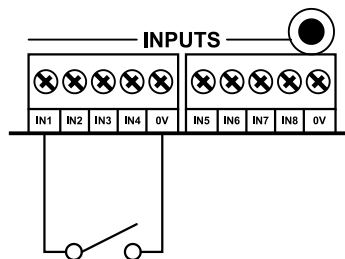


Input Wiring

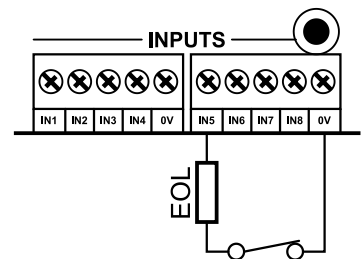
All inputs can be used for a variety of functions, including exit buttons, door monitoring, automations, and more. Each is selectable as NO, NC or EOL resistor supervised to match the device and wiring being used. The default value for the EOLs is 4.7K however standard values from 1K to 10K can be used provided that when using 2 EOLs the value for EOL1 is equal to or greater than EOL2.



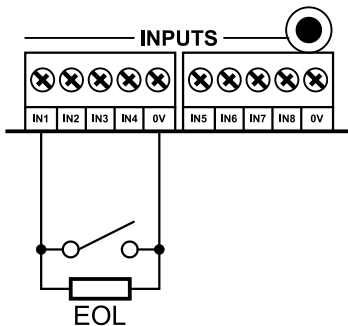
Unsupervised NC



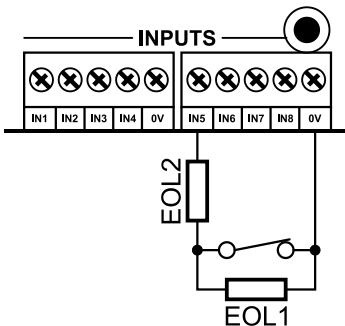
Unsupervised NO



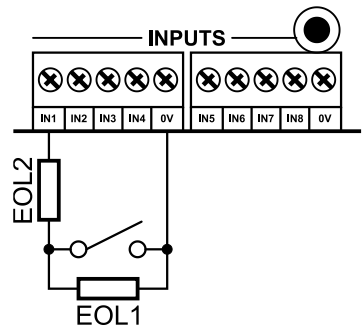
NC with 1 EOL resistor



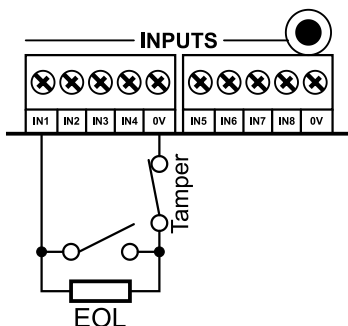
NO with 1 EOL resistor



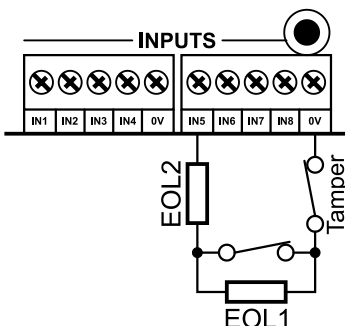
NC with 2 EOL resistors



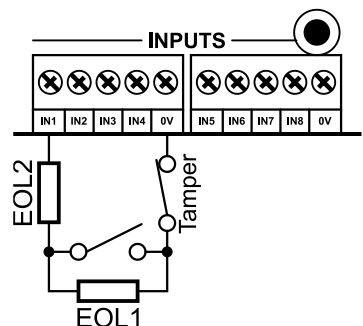
NO with 2 EOL resistors



NO with 1 EOL resistor
and NC tamper



NC with 2 EOL resistors
and NC tamper

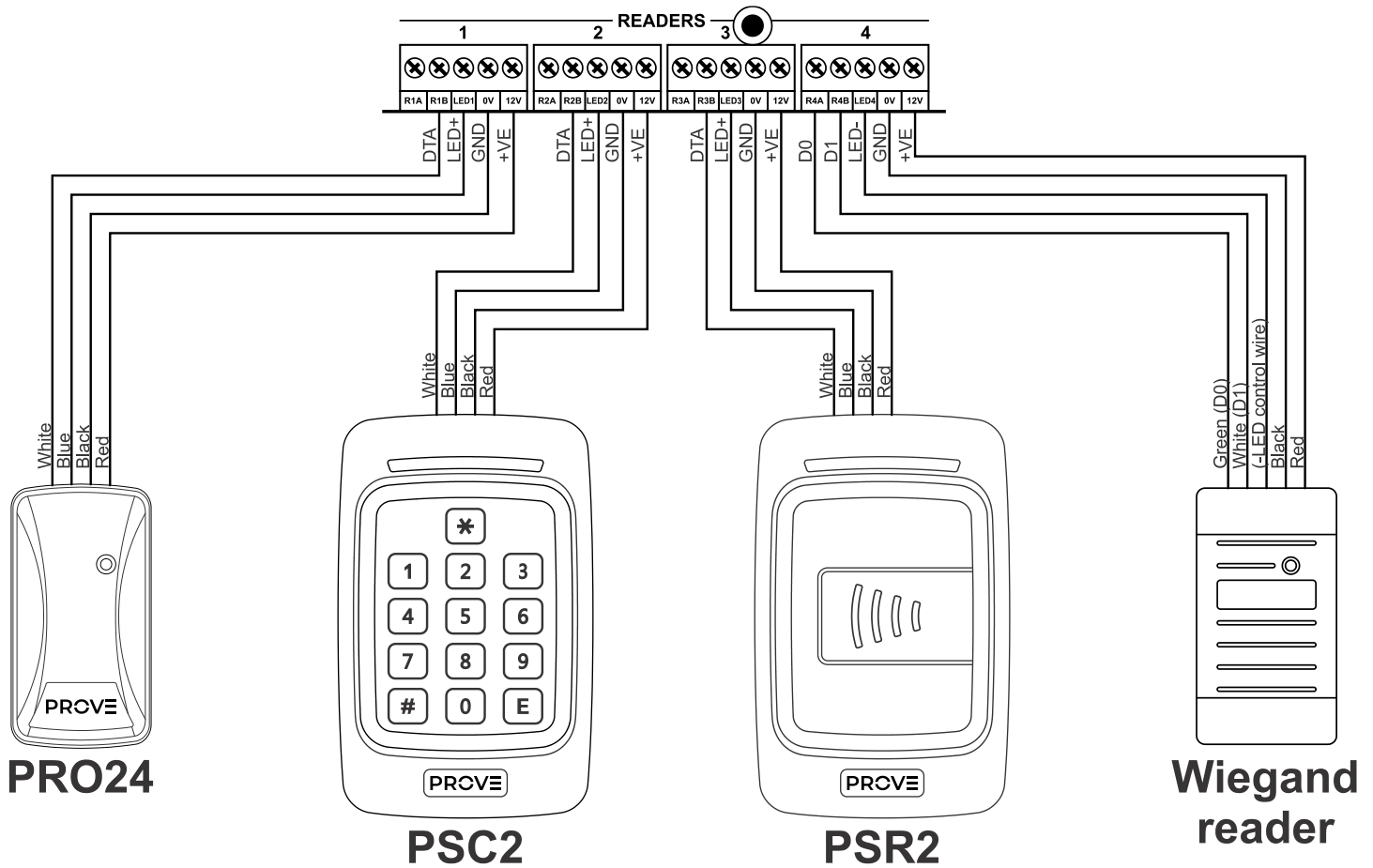


NO with 2 EOL resistors
and NC tamper

NOTE: ensure $EOL1 \geq EOL2$

Reader Wiring

All reader inputs can accept either Wiegand or Prove peripherals.



Reader Cabling Distances

Device	Cable type	Max length
Wiegand	7/020 shielded cable. 4 core for reader only. 6 core for reader + LED control. Ground the shield at DN4 end only.	100m
Prove PSK2 keypad	7/020 unshielded cable. 2 core (figure 8) for data only, no LED control. 4 core for PSK2 with LED control.	1000m
Prove PSE keypad without backlighting	2 core (figure 8) 7/020 unshielded cable.	1000m
Prove PSE keypad with backlighting	4 core 7/020 unshielded cable. NOTE decreased distance is due to extra current drawn by backlighting. 4 core 14/020 unshielded cable.	500m 1000m
Prove PRO24, PSC2 or PSR2 proximity reader	4 core 7/020 unshielded cable. 4 core 14/020 unshielded cable. NOTE decreased distance is due to extra current drawn by powering the reader.	350m 800m
Prove VR43 or VR62 keypad.	4 core 7/020 unshielded cable. 4 core 14/020 unshielded cable. NOTE decreased distance is due to extra current drawn by powering the keypad.	350m 800m

NOTE all distances are based on a supply voltage of 12.0V D.C. at the DN4.

VL+ to Relay Common Jumpers

VL+ TO RELAY COMMON JUMPERS

C1		VL+
C2		VL+
C3		VL+
C4		VL+

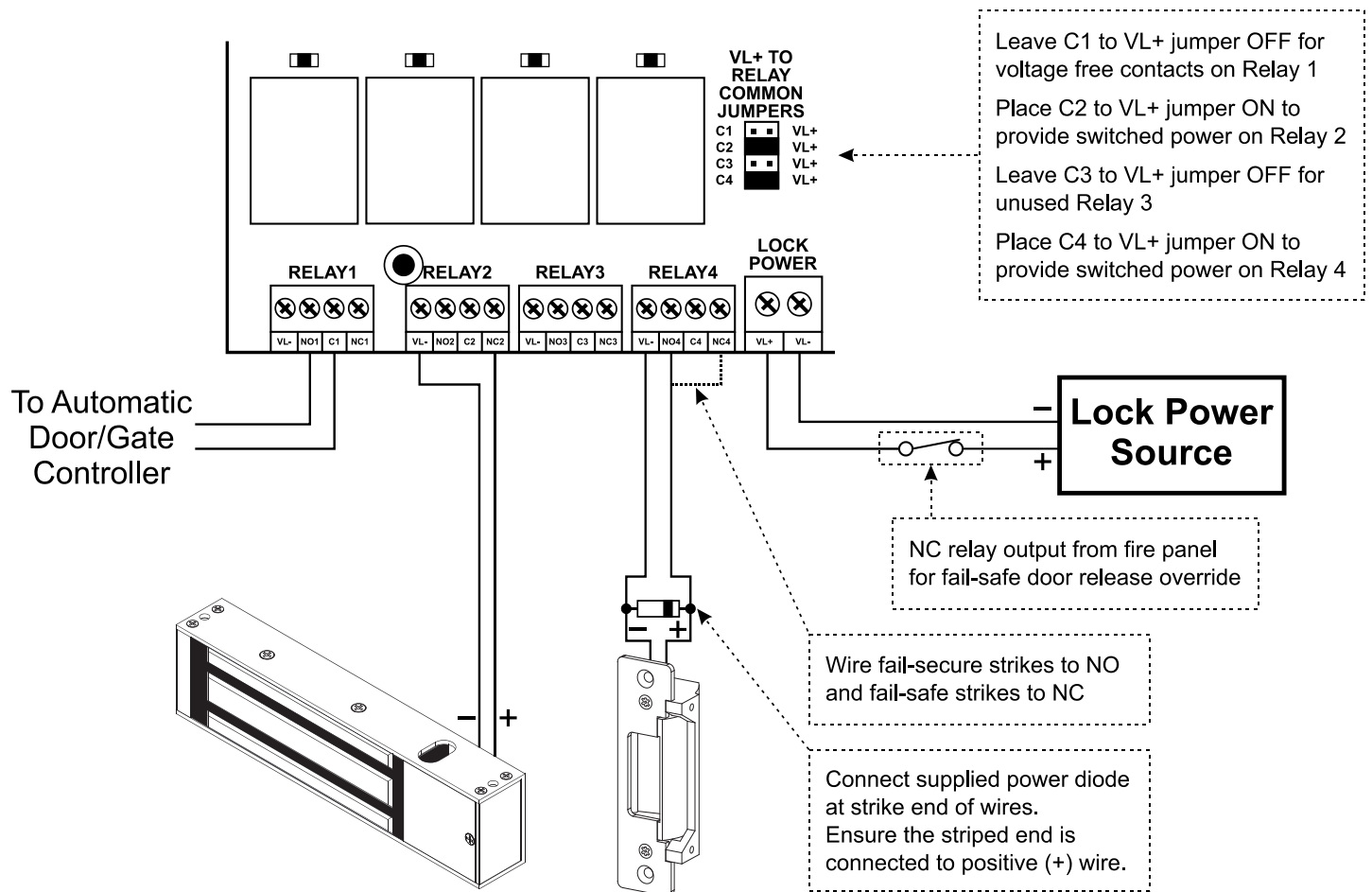
Place a jumper over the C1-C4 and adjacent VL+ pin to connect the VL+ power input to the common contact of the associated relay.

This allows for easier wiring of powered door locking devices.

WARNING do not use a jumper to connect adjacent Cx pins as this can lead to undesired interaction between doors.

Door Lock Wiring

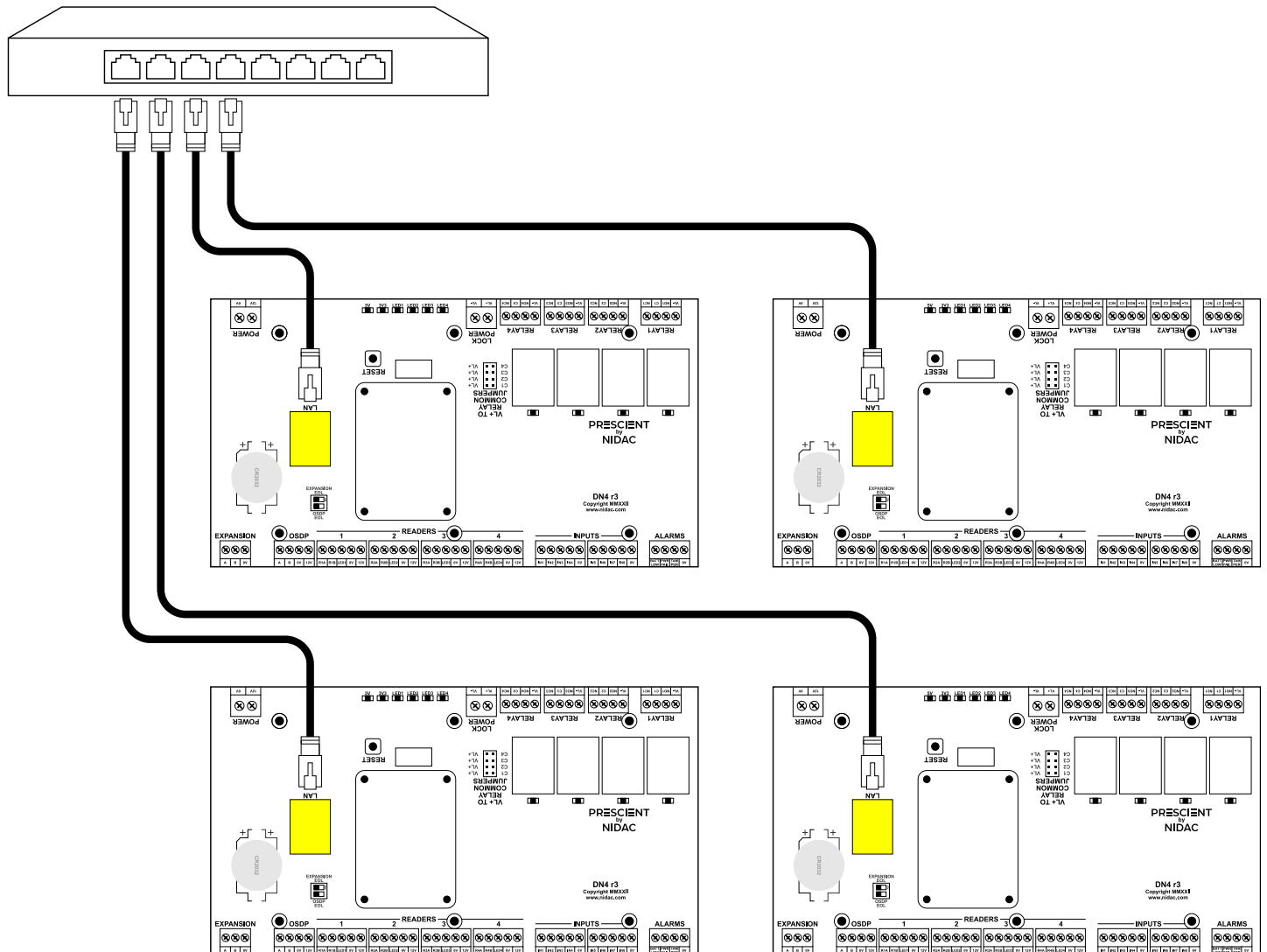
NIDAC recommends using a separate power supply or separate fused power output for the lock power.



Network Requirements

The DN4 requires a connection to a network with the following features

- 100/1000Mbps wired ethernet connection for each DN4
- Internet access to public NTP servers
- Multiple DN4s for a site are required to be on the same IPv4 subnet
- IPv4 DHCP server is highly recommended to reduce network traffic





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