

QuikStor Relay Board

3-Bank Board Addendum

QuikStor offers two variations of their relay control boards, a 10-bank board and a 3-bank board. For the majority of facilities a 3-bank board is sufficient to control their sirens, lighting, or elevators. This documentation focuses on the 3-bank board, please see the [Guardian Series Relay Board - Installation Manual](#) for documentation on the 10-bank board.



QuikStor Recommends the Following Wire

- 18/2 for 12VDC power – relay board
- 18/2 for wiring sirens to relay board
- 18/2 (OAS) – relay board data wiring to the UltraConverter



Wiring Requirements

- 12 VDC runs should be no longer than **200ft**
- Splices made on 18/2 should always be done with wire nuts or using a suitable termination/splice block
- Any splices made in underground junction boxes or in an area where water or other foreign materials could short the wires, they must have a wire nut (or similar connector) filled with silicone or like material



Guardian Series Relay Board Installation

Relay Board Introduction:

The Guardian Series Relay Board is the hub of all QuikStor controlled auxiliary devices. There are 3 individually controlled relays on the board that can be used to control sirens, elevator floor restriction, lighting, etc. Each relay is rated at 10amps and either 24VAC or 30VDC.

In a typical self-storage facility the relay board is used to control sirens that sound when a unit door sensor sends an unauthorized open event to the office. However we will touch on each of the above possibilities for the relay board so that you can connect devices as needed for your facility.

There can be a total of 254 devices (in addition to the UltraConverter) at any given facility. Any mixture of relay boards and/or keypads can be used to reach that number.

Relay Board Communication:

The relay board communicates to the UltraConverter (see the **Guardian Series Access Control System – Installation Manual** for more on the UltraConverter) on the same RS-485 data network as the keypad system. You can run a dedicated 18/2 OAS wire from the Surge Board on the relay board to the UltraConverter or daisy-chain the data wiring with a nearby keypad.

Note that the 3-bank relay board is only a wired device and is not available with a wireless data option as is the 10-bank relay board.

IMPORTANT: The relay board, even though likely mounted in an electrical room or office, should still have the Earth Ground wire on the Surge Board connected to a nearby grounding rod or other adequate grounding source to dissipate any surges that may travel in from nearby keypads.

Relay Board Jumpers & Dip Switches:

There is a single bank of dip switches on this board that controls addressing and the start-up state of each relay. There are also jumpers for each individual relay that controls whether it is a “wet relay” or a “dry relay”. Below is a breakdown of each one:

- ADDRESS – this bank of dip switches allow you to ID the relay board so that it can be recognized on the RS-485 data network. Please note that all relay boards must be ID 60 or higher to prevent any conflict with keypad ID numbers. The 3-bank board is hard-coded to ID 70. Changing the dip switches will increase that number per the schema below. The maximum number the ID can be is 250. The ID schema is as follows:

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- Dip Switch 1 = 10
- Dip Switch 2 = 20
- Dip Switch 3 = 40
- Dip Switch 4 = 80
- Dip Switch 5 = 160

For example, if you want the ID to be 80 you would have dip switch 1 in the up (or ON) position. If you want the ID to be 100, you would have dip switches 1 and 2 in the up (or ON) position, and so on. Contact QuikStor Support if you have any questions on addressing your relay board, however by default your relay board will come pre-configured as ID #70 (All dips switches down or in the OFF position)

- RELAY - NO or NC – the last 3 dip switches allows you to dictate if a relay is powered up as normally open (NO) or normally closed (NC). This is a useful feature if you are dealing with elevator restriction or other devices that you would want to default to a fail-safe state in case of power failure. The majority of installations would default to NO though. The switches work like this:
 - Dip Switch 6 – when the dip switch is up (or ON) Relay #1 will start in the NC position. By default this switch will be in the down (or OFF) position.
 - Dip Switch 7 – when the dip switch is up (or ON) Relay #2 will start in the NC position. By default this switch will be in the down (or OFF) position.
 - Dip Switch 8 – when the dip switch is up (or ON) Relay #3 will start in the NC position. By default this switch will be in the down (or OFF) position.

- RELAY – WET or DRY – there is a set of jumpers in front of each relay that allows you to dictate whether a relay will serve as a dry contact (like for elevator controls or externally powered devices) or supply 12VDC power out of the relay terminals when tripped. Please note that no more than THREE sirens may be powered off of a single relay board due to voltage drop potential. If additional sirens are to be used it will be necessary to power those sirens externally. The jumper settings are labeled on the board itself, but here is a quick breakdown of how the jumpers work:
 - Each relay has 4 pins next to it. If you wish to have the relay act as a DRY relay, you will have the jumper on the middle two pins.
 - Each relay has 4 pins next to it. If you wish to have the relay act as a WET relay, you will have two jumpers, effectively jumpering all four pins.

Relay Board Wiring Terminals:

For each relay there is a 3-position terminal block with the following designations:

- Normally Open (NO) – use this terminal when connecting to a gate motor or other device that does not require the relay board to supply a constantly closed loop.
- Normally Closed (NC) – use this terminal when connecting to an elevator controller.
- COM – this is your common terminal.

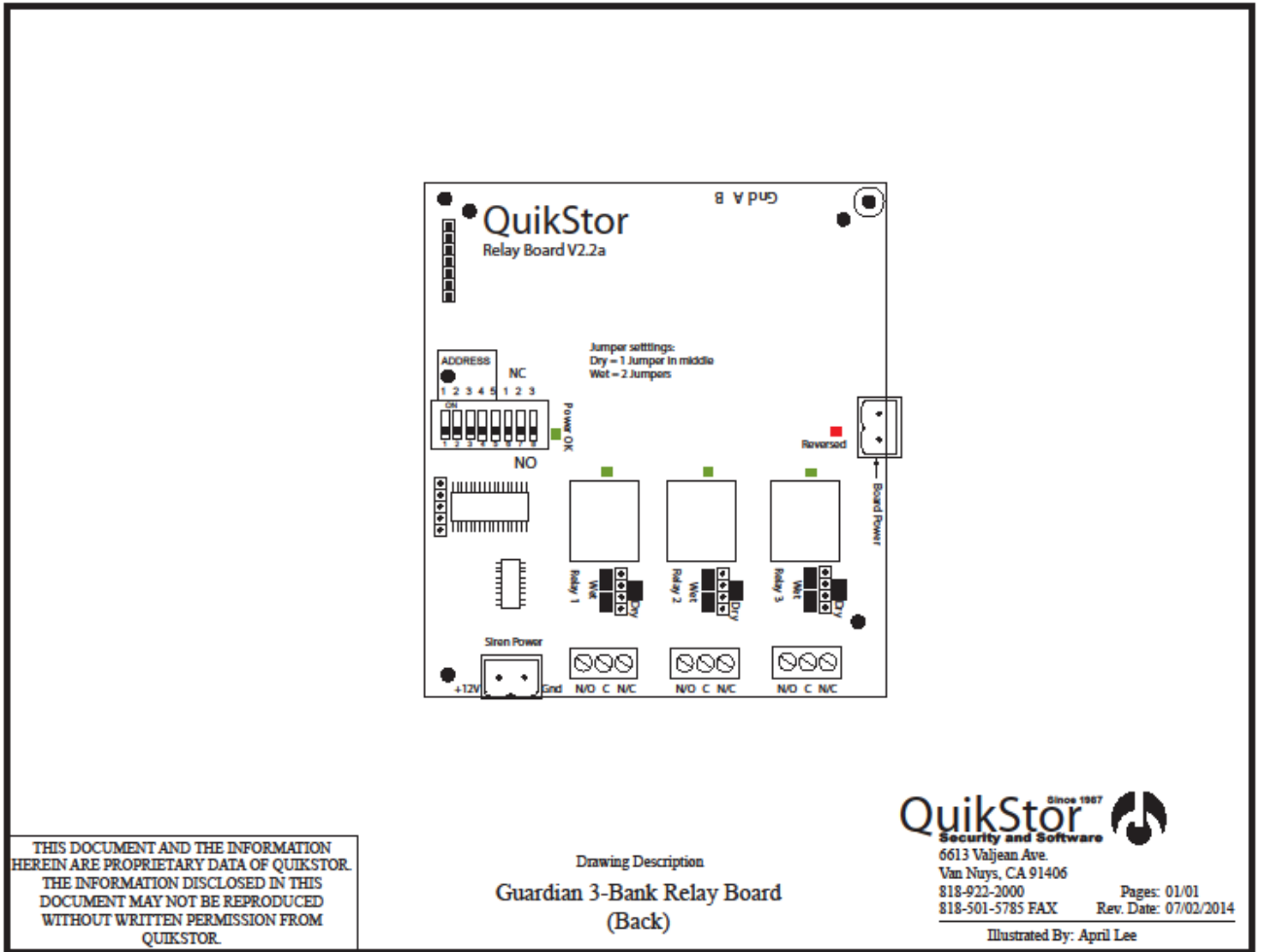
Note that the above descriptions are based on typical configurations. Your facility or device may use different variations of these terminals to properly power or control your devices.

In addition to the actual relay terminals there are also two power blocks. The Board Power is labeled on the board itself and is located next to the Surge Board. The other power block is located next to the relay terminal blocks and provide 12VDC power to sirens when a relay, or relays, are set to WET using the jumper setting described above.

Relay Board LEDs:

- Each relay has one green LED associated with it and will come on when the relay is triggered or in a closed state.
- PWR OK – this a green LED located near the bank of dip switches to indicate if 12VDC power is being supplied to the relay board.
- PWR REVERSED – this is a red LED located near the BOARD POWER terminal block to indicate that you have crossed the polarity of the 12VDC power wiring. If you see this light immediately power down your relay board and correct the wiring.

(See Diagram Below for Relay Board Wiring)



Please reference the Guardian Series Relay Board - Installation Manual for additional configuration in the software, troubleshooting steps, or your Relay Board warranty forms.