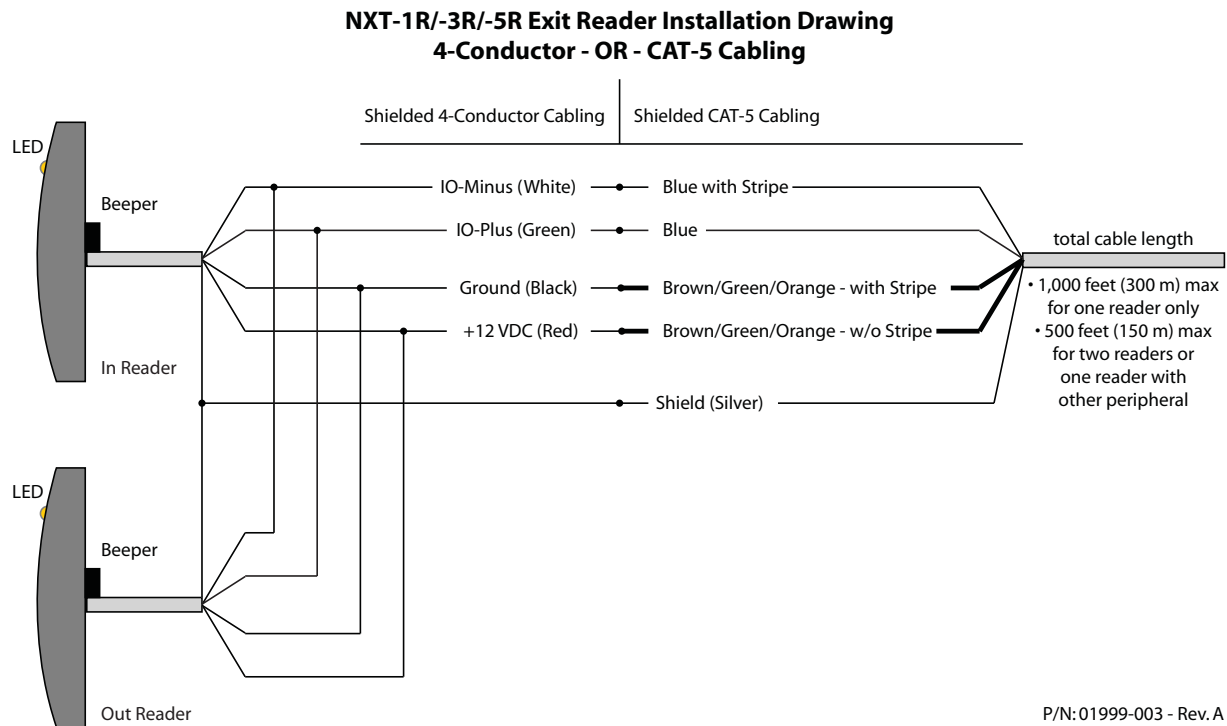# NXT-1RE/-3RE/-5RE Exit Reader
Installation Guide

Keri NXT controllers with Mercury firmware now provide an Entrance/Exit door control feature. This Entrance/Exit feature allows two readers to be wired to one bus on the NXT controller to control entrance and exit through that one door. Access requests entering through the door use a standard NXT-R Reader (designated as an Entrance Reader). Access requests exiting through that same door use an NXT-RE Reader (designated as an Exit Reader). Otherwise, all specifications and wiring information for the two reader types are identical.

NOTE: The Entrance/Exit Door reader feature is currently only available on NXT controllers using the optional, Mercury Inside firmware. For NXT controllers using standard NXT firmware, a reader configured as an Out-door is not recognized by the Doors.NET software.

1.0   Wiring and Layout Diagrams

1.1   NXT-1RE/-3RE/-5RE Exit Readers

An NXT Exit Reader is wired to a bus the same way a standard NXT Entrance Reader is wired, but both readers are wired to the same bus. This can be done using two separate reader cables wired into the terminal block at the bus on the controller, or by splicing the two readers together near the door and running one cable to the controller.

NXT-1R/-3R/-5R Exit Reader Installation Drawing
4-Conductor - OR - CAT-5 Cabling

Shielded 4-Conductor Cabling	Shielded CAT-5 Cabling
IO-Minus (White)	Blue with Stripe
IO-Plus (Green)	Blue
Ground (Black)	Brown/Green/Orange - with Stripe
+12 VDC (Red)	Brown/Green/Orange - w/o Stripe
Shield (Silver)	

total cable length
• 1,000 feet (300 m) max for one reader only
• 500 feet (150 m) max for two readers or one reader with other peripheral

P/N: 01999-003 - Rev. A

On power up, an Exit Reader's LED will flash red, then green, then stay at amber.

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Changes to this equipment not expressly approved by Keri Systems, Inc. may void FCC certification and the user's authority to operate this equipment.
- Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

2.0   Specifications

2.1   NXT-Reader Dimensions

- NXT-1RE Euro Mount Prox Reader
  - 3.25 inches tall by 3.25 inches wide by 0.5625 inches deep, not including wiring connectors
  - 8.25 cm by 8.25 cm by 1.43 cm
- NXT-3RE Mullion Reader
  - 3.75 inches tall by 1.625 inches wide by 0.50 inches deep
  - 9.52 cm by 4.13 cm by 1.27 cm
- NXT-5RE Wall Switch Reader
  - 4.50 inches tall by 3.00 inches wide by 0.625 inches deep, not including wiring connectors
  - 11.43 cm by 7.62 cm by 1.59 cm

2.2   Power/Current Requirements

- 10 to 14 VDC @ 120 mA (maximum current draw at 12 VDC)

2.3   Operating Conditions

- -40°F to 150°F (-40°C to 65°C) – 0% to 90% Relative Humidity, non-condensing

2.4   Cable Options

RS-485 bus runs can daisy-chain together an NXT-4x4 and NXT-Reader on one line. The total cable run distance should be less than 500 feet from the NXT controller for runs with two Readers or one Reader and one 4x4, and less than 1,000 feet for single Reader runs.

*NOTE: Cable resistance causes a drop in voltage at the end of long cable runs. Ensure the appropriate power and current for your device is available **at the device** at the end of the cable run. Heavier gauge cable reduces this affect.*

NOTE: Keri does not recommend hot-plugging a Reader, RIM, or 4x4 into an NXT controller.
Remove power from the controller prior to connecting these devices.

Table 1: Reader and 4x4 Cable Options

Connection Type	Total Run Length	Minimum AWG	Shielded, Stranded, 2 Twisted-Pair[a]	CAT-5[b]	Shielded, Stranded, 4-Conductor[c]
			Suggest		Suggest
RS-485 bus from NXT-2D/-4D to NXT-4x4 only	up to 500 feet	18 - Power 22 - Data	Belden 8723	shielded	Windy City: 414302-S Tappan: 1880AB4M-CM
RS-485 bus from NXT-2D/-4D to NXT-4x4 and one NXT Reader or to two NXT Readers	up to 500 feet	18 - Power 22 - Data	Belden 8723	shielded	Windy City: 414302-S Tappan: 1880AB4M-CM
RS-485 bus from NXT-2D/-4D to one NXT Reader only	up to 1,000 feet	18 - Power 22 - Data	Belden 8723	shielded	Windy City: 416303-S Tappan: 2280AB4M-CM

a. Keri recommends this cable type for best system performance.
b. Keri's preferred low-cost option. Keri has no suggested vendor for this type of cable.
c. Use care when routing this type of cable as it can make the system more susceptible to EMI.

3.0 Verify your License

Older license keys for NXT controllers with Mercury firmware may not have this option enabled. Verify your Doors.NET license has this feature enabled **before** configuring your In and Out readers in the software.

1. Open the LicenseManager.exe program in the folder where your instance of Doors.NET is installed (typically in the C:\Keri\DoorsNET folder).
2. Click the License tab and scroll through the list of license values until you locate the "Enable NXT Exit Reader" line item. This item should be set to "True."
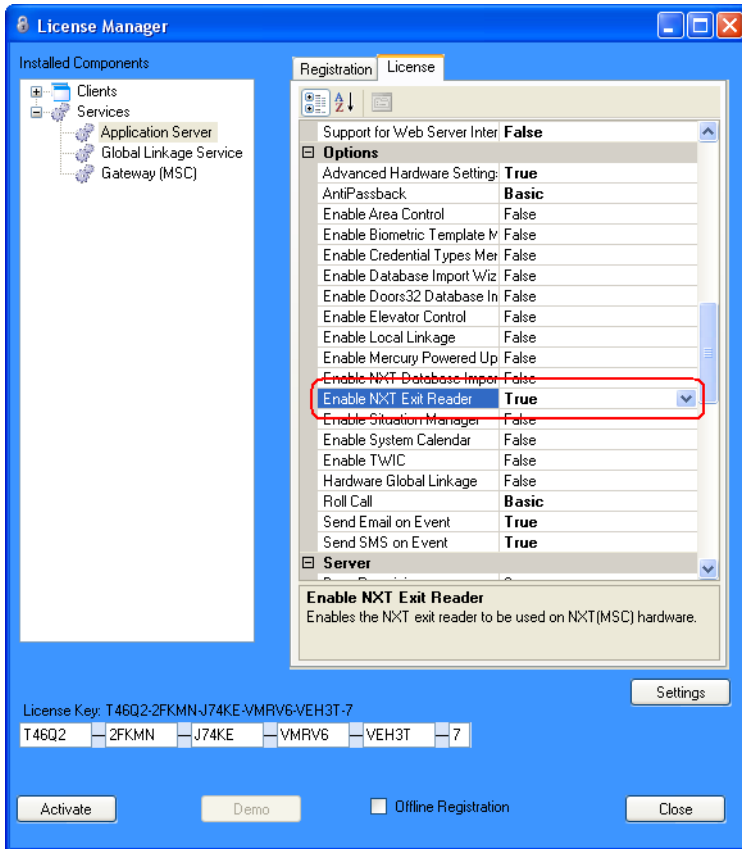
3. If this item is NOT set to True, you must contact Keri Systems' Inside Sales department to have your license updated.

4.0 Exit Reader Configuration in Doors.NET

By default, when you purchase an NXT Exit Reader your license should have the Exit Reader option enabled, allowing you to add the Exit Reader to the hardware tree. It is a very simple procedure to add the Exit Reader.

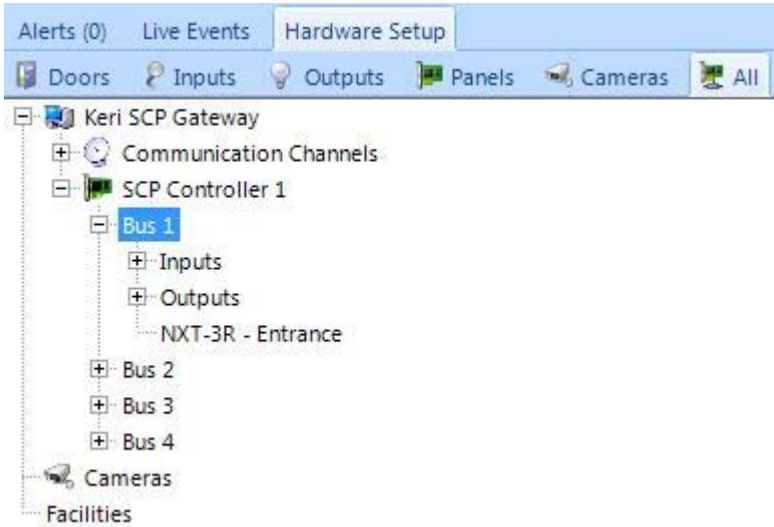*NOTE: Exit Readers are only compatible with NXT controllers using optional Mercury firmware.*

1. Click on the icon from the Setup tab, then click the 'All' tab.

2. Highlight the bus into which both the NXT-R (In) reader and the NXT-RE (Out) reader are wired.

3. The Add NXT Reader icon is now displayed on the ribbon bar. Click this icon and an Exit Reader is added to the same bus. You will receive an alert message prompting you to verify the correct reader type is being used. Click Yes to this prompt.

4. The additional reader will automatically be configured as the out reader for that bus.

Master/Slave (In/Out)	
Reader Function	Slave (Out for In/Out)
Paired Reader	NXT-3R - Entrance

5. Once the reader appears in the hardware tree, highlight it, then within the properties give the NXT exit reader a descriptive name.

General	
Description	NXT-3R - Exit
Enabled	Yes
Door Type	None
Door Class	None
Security Level	None
Manufacturer Model	Keri NXT-3R

6. A valid card read at each of the readers will activate the same strike relay but the reader locations in live events will be different.

7. The entrance and exit readers can also be assigned to completely different access groups, even though they are wired into the same bus.

8. You can also run completely independent transaction reports on these readers or use any one of them as an enrollment reader.

5.0   Contact Keri Systems

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