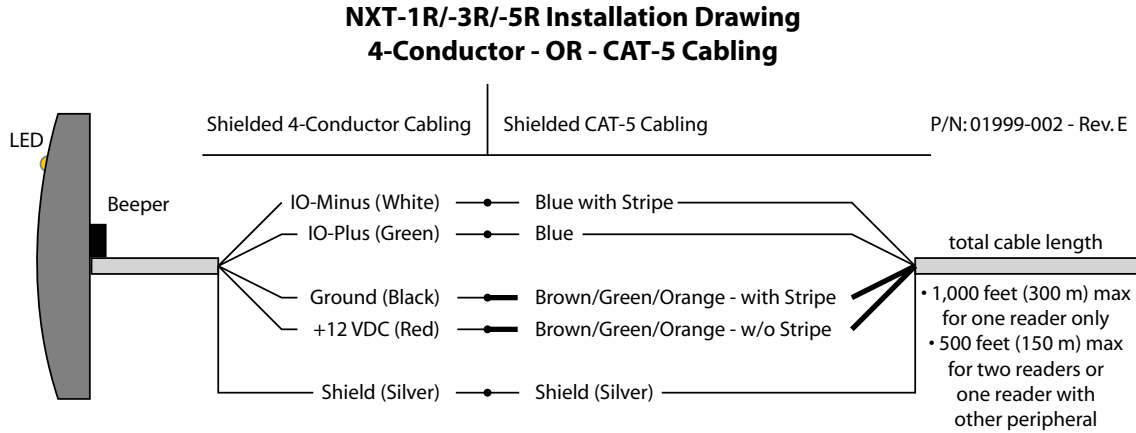


NXT-1R/-3R/-5R Reader

Installation Guide

1.0 Wiring and Layout Diagrams

1.1 NXT-1R/-3R/-5R Readers



- 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-1R 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-3R 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-5R 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

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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 effect.*

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 Entrance/Exit Reader Feature

Keri NXT controllers with Mercury firmware now provide an Entrance/Exit door control feature. Keri readers with this capability have Firmware v3.01.01 or greater. This Entrance/Exit feature allows two readers to be wired to one bus on the NXT controller, but assigns one reader to access requests entering through one specific door (an Entrance Reader) and the other reader to requests exiting through **that same door** (an Exit Reader). To use this feature you must pair an Entrance Reader with an Exit Reader; pairing two Entrance Readers or two Exit Readers together on one bus is an illegal configuration resulting in **neither** reader being recognized by the system.

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 firmware, a reader configured as an Exit-reader is not recognized by the Doors.NET software.

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The standard Keri reader configuration is as an Entrance Reader. Readers can be ordered configured by the factory as Exit Readers. Other than this feature, all specifications and wiring information for the two reader types are identical. Readers with Exit-door capability have an “E” suffix on the part number.

Table 2: NXT Reader Model Numbers

Keri Default Entrance Reader	Factory Configured Exit Reader
NXT-1R	NXT-1RE
NXT-3R	NXT-3RE
NXT-5R	NXT-5RE

Please refer to the [NXT-1RE/-3RE/-5RE Installation Guide](#) for exit reader installation information (p/n 01250-001).

4.0 Flash Upgradable NXT Readers

Beginning with firmware revision 4.00.00, NXT Readers can have their firmware flash upgraded, allowing new features or functionality to be added to NXT readers. NXT Readers with any earlier firmware revision **cannot** be flash upgraded.

There are two ways to identify if you have a flash upgradable NXT Reader:

- the serial number on the Reader’s label has an “F” suffix
- the Doors.NET software reports the Reader’s firmware revision as 4.00.00 or greater

5.0 125 KHz HID Credential Reading Capability

Flashable NXT Readers can now be assigned the ability to read standard, 125 KHz format, HID credentials. This currently requires a stand alone version of reader firmware be loaded onto the NXT Reader. This is currently firmware revision 4.00.01. This firmware image is copied to the host computer during the software installation/upgrade process. The firmware can be installed on flash upgradable NXT Readers via the Firmware Upgrade option in the software. The firmware image name is [IRC HID 04.00.01](#).

NOTE: The Reader is capable of reading either NXT or HID credentials, but not both credential types at the same time. A future revision of the Doors.NET software and NXT Reader firmware will allow for reader configuration from within the software.

NXT-1R/-3R/-5R Reader Installation Guide

6.0 Contact Keri Systems

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