Installation

Proximity Card Readers

6005R/5395R/5355R

RUTHERFORD CONTROLS
A DORMA Group Company

Introduction

This guide is a basic reference to ensure all connections are properly made. Installation and wiring of systems must be in accordance with the National Electrical Code, ANSI/NFPA 70.

A proximity card reader is a key component of an electronic access control system based on RFID technology. In operation it is capable of reading data stored on a proximity credential without physical contact and then passes the data obtained to the access control system. Access control systems typically manage and record the movement of individuals through secure entry points into a building or area.

Mounting Provisions

Each reader may be installed either indoors or outdoors.
Installing on or near metal may cause a reduced read range.

	6005R	5395R	5355R
Mullion Mount	•		
Single Gang Wall Mount*		•	•

*Plastic or metal

Specifications:

Reader Wiring

Conductor	Function
Red	DC (5-16 VDC)
Black	Ground
Green	Data 0
White	Data 1
Brown	Red LED*
Orange	Green LED**
Yellow	Card Present
Blue	Beeper
Violet	fleaPower™
Drain	Shield Ground

*Single Line LED:

This is the standard operating mode and does not make use of the orange conductor.

The LED is red when the reader is idle and flashes when a card is presented. The LED turns green when the brown conductor is pulled low by the access control panel.

**Dual Line LED: This mode makes use of both the brown and orange conductors.

The brown conductor controls the red LED and the orange conductor controls the green LED.

LED states are determined by the access control system option and capability.

Cable Requirements

24 AWG minimum, multi-conductor stranded with an overall foil shield, for example Belden 9535 or similar. Per the SIA's Wiegand specification, maximum cable length is 500 feet (152 m).

Output Formats

Wiegand (industry standard 26-bit Wiegand and custom Wiegand formats). 5355R is also 8-bit Burst

Grounding

Shield (drain) continuity must run from the reader to the access panel.
Shield (drain) and reader ground must be tied together at the access panel and connect to an earth ground at one point only.

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Power
Reader may be powered by the access panel Linear Power Supply or switch mode (provided the switching frequency is not 125kHz).

Voltage
5 to 16VDC. 12VDC at the reader is recommended for best operation.

Model	6005R	5395R	5355R
Current Draw	30-75mA	35-75mA	70-110mA

fleaPower™ Control Line
To reduce the average current required by the reader, connect the purple conductor to ground. This will turn the LED off when inactive.

Connection
Connection must be done in accordance with NFPA 70. Do not connect to a receptacle controlled by a switch.

Listings & Certifications
Intertek

FCC compliance Statement: This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.
Product can be used without license conditions or restrictions in all European Union countries, including Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom, as well as other non-EU countries, including Iceland, Norway, and Switzerland.

This device complies with Industry Canada licence-exempt RSS standard(s).

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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IMPORTANT! Changes or modifications not expressly approved by Rutherford Controls Int'l Inc. (A DORMA Group Company) could void the user's authority to operate the equipment.

NOTE: 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.

CAN ICES-3 (A)/NMB-3(A)

Troubleshooting
1. When the reader is first powered on it will beep 4-times and the Red LED will be on.
2. Presenting a supported access credential will result in the reader beeping and the LED flashing once.

NOTE: The access panel controls LED functionality, such as switching the LED to Green.

If the reader does not recognize the card or fob (no beep, no LED flash) or exhibits short read range, please see the table below for possible causes and solutions.

Possible Cause	Corrective Action
Incorrect cabling	Verify gauge, connections and cabling length
Not enough power	12VDC recommended, 5VDC at reader is minimum
Incorrect card used	Verify if card technology is supported
Reader/access panel not properly grounded	Earth ground needed-verify shield and reader ground are tied at access panel and connect to ground at one point
Supply generating interference	Verify switching frequency of power supply

Should any of the corrective actions mentioned above not improve performance, disconnect the reader from the access panel and power it with a separate power supply or 9VDC battery and re-test card functionality. By powering the readers separately, most variables that may lead to reduced performance can be eliminated. Should the problem persist, please contact RCI directly.

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