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# Standard Mullion & Single-Gang Readers

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Mullion Reader - PN: RDRM

Single-Gang Reader - PN: RDRG

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### **Intelligent Technology. Cost-Effective Design.**

Enjoy the flexibility of using traditional readers that fit any application. The mullion style reader is just the right width, making it ideal for door frame applications. Or, use the wider single-gang reader making it perfect for wall mounting applications.

## **Features**

- 125 kHz RFID Proximity
- 26- to 37-bit Wiegand-based format
- Output converts to Wiegand formats
- Voltage: 12VDC at the reader. A regulated power supply is recommended for best operation.
- Electronics potted and sealed with tamper-resistant epoxy for indoor installation
- FCC, RoHS, and UL Standard 294 compliant
- IP65\* moisture and dust protection (IP rated as "dust tight" and protected against water projected from a nozzle.)
- 5 kHz audio buzzer

## **Specifications**

This manual walks an installer through the steps needed to connect the **Mullion / Single-Gang Readers** to an access control panel. These readers support 125 kHz prox cards.

Review the information in this manual to ensure the reader is installed quickly and properly.

|                           |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Card Type</b>          | HID compatible                                                                                                               |
| <b>Transmit Frequency</b> | 125 kHz                                                                                                                      |
| <b>Read Range</b>         | Up to 1.8 inches (45 mm.)                                                                                                    |
| <b>Wiegand Output</b>     | Wiegand 26-37 bit                                                                                                            |
| <b>Power</b>              | +12 Volts DC from included power supply                                                                                      |
| <b>Current</b>            | <= 30mA                                                                                                                      |
| <b>Operating Humidity</b> | 0% to 95% relative humidity non-condensing                                                                                   |
| <b>Operating Temp.</b>    | -4° to ~140° F (-20° to ~ +60° C)                                                                                            |
| <b>Dimensions (WxHxD)</b> | Mullion: 1.875 x 4.0 x .875 inches / 4.75 x 10.16 x 2.2 cm<br>Single-gang: 3.25 x 4.75 x .875 inches / 8.25 x 12.06 x 2.2 cm |
| <b>Weight</b>             | Mullion: 4 oz. / 113.4 g.<br>Single-gang: 6.08 oz. / 172.4 g.                                                                |
| <b>Audio</b>              | 5 kHz buzzer                                                                                                                 |
| <b>IP Rating*</b>         | IP65 moisture and dust protection                                                                                            |
| <b>Certificates</b>       | CE, RoHS, FCC                                                                                                                |
| <b>Cable Distance</b>     | Wiegand ISO (500 ft.) (24 AWG)                                                                                               |

\* The IP Code classifies and rates the degree of protection provided by mechanical casings and electrical enclosures against intrusion, dust, accidental contact, and water. The first number is for solids protection such as dust; it ranges from 0 to 6. The second number (5 in this case) is for the part's protection against liquids; it ranges from 0 to 8.

## Wiegand Format

The standard 26-bit Wiegand format is an open format; it is a widely-used industry standard. Almost all access control systems accept the standard 26-bit format which consists of 2 parity bits, 8-bit facility code, and 16-bit card number fields. The Wiegand interface is commonly used to connect a card swipe mechanism to the rest of an access control system. The physical size limitations of the card dictated that a maximum of 37 Wiegand wire filaments could be placed in a standard card before misreads would affect reliability; therefore, most Wiegand formats used in physical access control are less than 37 bits in length.

## Wiegand Reader Wiring Output

Follow all wiring and safety precautions to connect the mullion / single-gang reader to your access control panel (either **single io** or **eight io**). Mount the controller at the door with 22/6 wire. This reader supports formats using 26- to 37-bit 125 kHz credentials and outputs the card data through a standard Wiegand interface.

## Additional Listed System Components

|                                    |                                                                                                                                                                                                                                                                       |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cloud Node</b>                  | <ul style="list-style-type: none"> <li>Provides unlimited cardholders, years of event storage, battery backup, and auto data backup.</li> <li>Cloud Node Part Number: CN</li> <li>Cloud Node Server Edition Part Number: SVR</li> </ul>                               |
| <b>Single io</b>                   | <ul style="list-style-type: none"> <li>Run controls for doors and/or build a larger network. Also used for legacy system change-out.</li> <li>Wireless Part Number: 1DW</li> <li>Ethernet Part Number: 1DE</li> <li>Power Over Ethernet Part Number: 1DPOE</li> </ul> |
| <b>Eight io</b>                    | <ul style="list-style-type: none"> <li>Run controls for multiple doors and/or build a larger network. Also used for legacy system change-out.</li> <li>Pro Wireless Part Number: 8DW</li> <li>Ethernet Part Number: 8DE</li> </ul>                                    |
| <b>Proximity Reader</b>            | Must be UL 294 listed                                                                                                                                                                                                                                                 |
| <b>Proximity Credentials</b>       | Must be UL 294 listed                                                                                                                                                                                                                                                 |
| <b>Electronic Locking Hardware</b> | Must be UL 294 listed                                                                                                                                                                                                                                                 |

**NOTE:** For information about other products and services, see <https://www.prodatakey.com> > Products

## Reader Install - Information Overview

## KB Reader Install



# Installation

This Installation Guide provides instructions for installing the ProdataKey Mullion / Single-Gang Reader.

**IMPORTANT:** A ProdataKey Cloud Node is required to operate the mullion / single-gang readers.

## Package Contents

- Mullion Style Reader (1) or Single-Gang Reader (1)
- Mounting screws (4)
- Diode (1)

## Recommended Tools

- Drill and the appropriate size drill bits
- Security-tip screw bit (to match security screw head at the base of the reader)
- Wall anchors (4) if mounting to drywall
- Electrical tape
- Pencil (to mark hole positions on the mounting surface)
- Low-voltage white B wire splice connectors
- Wire stripper/crimper

## Mullion / Single-Gang Wiring

Before you begin the installation, read the instructions thoroughly. Make sure you have read and understand the [Safety Information](#).

**WARNING:** Disconnect power before working with the ProdataKey product. DO NOT mount the product while power is applied. Always apply power at the *end* of the installation after verifying wiring connections are correct; incorrect wiring could cause damage to the product.

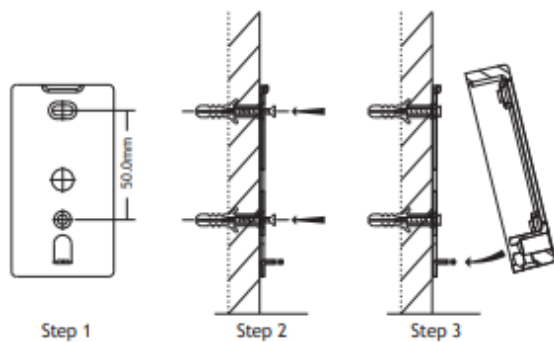
| Reader Wire Conductor                          | Single io Function | Eight io Function |
|------------------------------------------------|--------------------|-------------------|
| <b>Red</b> - Power to + (positive) connector   | DC Power +12VDC    | DC Power +12VDC   |
| <b>Black</b> - Power to - (negative) connector | Ground (-)         | Ground (-)        |
| <b>Green</b> - To D0 (data zero) connector     | Data 0 (zero)      | Data 0 (zero)     |
| <b>White</b> - To D1 (data 1) connector        | Data 1 (one)       | Data 1 (one)      |
| <b>Brown</b> - To L connector - Green LED      | Green LED          | Green LED         |
| <b>Yellow</b> - Bell connector                 | Buzzer (O)         | Buzzer (-)        |

**NOTE:** For UL certified wire installations, all wire running from a door controller to a lock, strike, or reader device must be less than 98.5 feet (30 meters).

If you have any wiring questions or concerns, feel free to contact our [Support](#) team.

**Step 1** - Remove the backplate screw from the bottom of the mullion / single-gang reader using a security screw bit to remove the reader's backplate.

**Step 2** - Use the backplate's mounting and cable holes to mark the hole positions on the wall. Drill two holes to support the mounting screws (and wall anchors, if mounting on drywall).



Drill a larger hole into the wall between the two small holes large enough to pass the reader and controller wires through the hole. Once the wires are paired, crimped, and wrapped in electrical tape, they need room to be pushed back and concealed inside the wall prior to mounting the reader.

Feed the wires from the door controller through the wall hole in preparation for pairing with the six mullion / single-gang reader wires.

**IMPORTANT:** Before pairing the wires, ensure the power source (including the backup battery) is NOT energized until all wires are properly connected.

**NOTE:** A backup battery is HIGHLY recommended to prevent system failure in the event of an AC power loss.



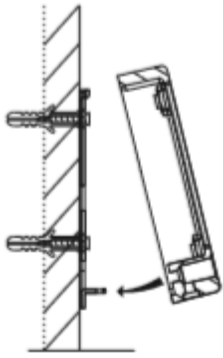
Strip the ends of the wires and pair the Mullion / Single-Gang Reader wires with the appropriate controller wires by inserting the exposed ends of each wire pair (one of each door controller and Mullion / Single-Gang Reader) into each end of a B connector wire splice; crimp the wires tightly. Repeat this for each set of paired wires, ensuring that both wires are securely crimped inside a B connector.

**NOTE:** The Brown and Yellow wires are optional connections.

| Mullion / Single-Gang Reader Wire                    | Function (Single io) | Function (Eight io) |
|------------------------------------------------------|----------------------|---------------------|
| <b>Red</b> - Power to + (positive) connector         | DC Power +12VDC      | DC Power +12VDC     |
| <b>Black</b> - Power to - (negative) connector       | Ground (-)           | Ground (-)          |
| <b>Green</b> - To 0 connector                        | Data 0 (zero)        | Data 0 (zero)       |
| <b>White</b> - To 1 connector                        | Data 1 (one)         | Data 1 (one)        |
| <b>Brown</b> - To L connector - Green LED (Optional) | Green LED            | Green LED           |
| <b>Yellow</b> - Bell connector (Optional)            | Buzzer (O)           | Buzzer (-)          |

**NOTE:** There may be some degree of pulling and pushing on the wires during the reader install process (especially while concealing the paired wires inside the wall). It is recommended that each B connector be crimped **three times** to ensure the wire pairs are held securely in the wire splice and will not disconnect. After wires are paired and crimped, wrap the wire bundle securely with electrical tape around the B connector splices so they remain together and for ease when pulling/pushing the bundle through the wall. Conceal the wire bundle inside the wall in preparation for and prior to mounting the Mullion / Single-Gang Reader.

After all wires are connected and concealed inside the wall, align the plate's holes to the holes in the wall surface and mount the plate with the two provided screws so it is securely fastened to the wall.



**Step 3** With the reader's backplate securely mounted to the wall surface, mount the main reader unit by angling the reader's slot (at the top) into the corresponding tab of the mounted plate.

Secure the reader to the plate by replacing and tightening the previously removed security screw into the bottom mounting tab hole.

**IMPORTANT:** A ProdataKey Cloud Node is required to operate the mullion / single-gang readers.

## Operation

1. When swiping credentials, the LED turns green and the piezo buzzer sounds. Afterward, the LED returns to red.
2. When the LED wire (brown) is pulled to ground, the LED turns green.
3. When the Piezo buzzer wire (yellow) is pulled to ground, the piezo sounds. The piezo has a timeout of 30 seconds.
4. The green wire is for Wiegand data 0, and white wire is for data 1.

**NOTE:** For UL certified wire installations, all wire running from a door controller to a lock, strike, or reader device must be less than 98.5 feet (30 meters).

**NOTE:** If the reader doesn't beep/react when presenting a card format, it's not compatible with the reader.

## Technical Support

Should you require any technical assistance, please contact our knowledgeable ProdataKey Support staff. Your support queries covering hardware, software installation, trouble tickets, troubleshooting, return merchandise authorization (RMA), or any other questions will be addressed as immediately as possible.

- **Phone:** 801.317.8802 option #2 or direct at: 801.206.4086

- **Email:** [support@prodatakey.com](mailto:support@prodatakey.com)
- **Direct Dealer Support Line:** [801.206.4086](tel:801.206.4086)

**ProdataKey, LLC** - 67 West 13490 South, Draper, Utah 84020 United States

## Certifications

**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.
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.

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Mullion and Single-Gang Readers Installation Manual

ProdataKey Readers

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# Safety, Maintenance, & Operational Information

## Requirements

This information is intended for trained and authorized installers of ProdataKey access control products. Versions of this article will be updated to the ProdataKey knowledge base as necessary.

In this manual, ProdataKey and its door controllers are referred to as the PDK products, single io, eight io, product, network door controller, device, device controller, and Cloud Node.

## Liability

Every care has been taken in the preparation of this document. Please feel free to inform ProdataKey [Support](#) of any inaccuracies or omissions in this documentation. We welcome your feedback and suggestions. ProdataKey cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and documentation without prior notice.

ProdataKey makes no warranty of any kind with regard to the material contained within this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. ProdataKey shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance, or use of this material. This product is only to be used for its intended purpose.

## Intellectual Property Rights

Patents Pending - ProdataKey has intellectual property rights relating to technology embodied in the product described in this document.

## Equipment

This equipment must be installed and used in strict accordance with the instructions given in the user documentation. This equipment contains no user-serviceable components. Wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70. Unauthorized equipment changes or modifications will invalidate all applicable regulatory certifications and approvals.

Use only accessories that comply with the technical specification of the product. These can be provided by ProdataKey or an approved third party. Use only spare parts provided by or recommended by ProdataKey.

After the system is installed and working properly, no further maintenance or testing is required.

Do not attempt to repair the product by yourself. Contact ProdataKey Support or your ProdataKey authorized distributor for service matters.

## **Trademark Acknowledgments**

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## **Regulatory Information**

Electromagnetic Compatibility (EMC)

This equipment has been designed and tested to fulfill applicable standards for:

- Radio frequency emissions when installed according to the instructions and used in its intended environment.
- Immunity to electrical and electromagnetic phenomena when installed according to the instructions and used in its intended environment.

## **Safety**

This manual has been prepared to help you install the product. Read through the installation instructions carefully before installing the product. Keep the guide for future installation and maintenance reference.

This product complies with IEC/EN/UL 60950-1, Safety of Information Technology Equipment. If your connecting cables are routed outdoors, the product shall be grounded either through a shielded network cable (shielded twisted pair) or another appropriate method.

The power supply used with this product shall fulfill the requirements for Safety Extra Low Voltage (SELV) and Limited Power Source (LPS) according to IEC/ EN/UL 60950-1.

## **Disposal and Recycling**

When this product has reached the end of its useful life, dispose of it according to local laws and regulations. For information about your nearest designated collection point, contact your local authority responsible for waste disposal. In accordance with local legislation, penalties may be applicable for incorrect disposal of this waste.

## Supported Readers

Door controllers accept standard 26-bit Wiegand data input from approved readers.

## Support / Sales

### Support:

- **Phone:** 801.317.8802 option #2 or call direct at: 801.206.4086
- **Email:** [support@prodatakey.com](mailto:support@prodatakey.com)
- **Direct Dealer Support Line:** 801.206.4086

### Sales:

- **Phone:** 801.317.8802 option #1
- **Email:** [sales@prodatakey.com](mailto:sales@prodatakey.com)

## Learn More

Visit ProdataKey [learning center](#) for certification training and events, webinars, and tutorials.

## Notice

- The ProdataKey Single io and Eight io door controllers are intended for indoor use only.
- The ProdataKey product shall be installed by a trained professional.
- The ProdataKey product shall be used in compliance with local laws and regulations.
- The ProdataKey product shall be installed within a secured area.
- Mount in a dry and well-ventilated environment.
- To provide the best conditions and proper operation of the product, the controller must be securely mounted in accordance with the installation instructions.
- Do not install the door controller box on unstable brackets, surfaces, or walls.
- Use only applicable tools when installing the ProdataKey product. Using excessive force while mounting the product could cause damage.
- Avoid exposing ProdataKey product to shocks or heavy pressure.
- Do not use chemicals, caustic agents, or aerosol cleaners to clean the product. Use a clean cloth dampened with pure water for cleaning the exterior of the enclosure.
- Use only accessories that comply with the technical specification of the product. These can be provided by ProdataKey or a ProdataKey authorized third-party vendor.
- Use only spare parts provided by or recommended by ProdataKey Support or a product reseller.

- Do not attempt to repair the product by yourself. Contact ProdataKey Support or your ProdataKey authorized distributor for service matters.
- Use a can lock to ensure secure enclosures and prevent tampering.
- Protect the power cord, Ethernet cable, and transformer wires from being walked on or pinched, particularly where the wiring exits the box.
- For UL certified installations, all cable runs to the door controllers must be less than 98.5 feet (30 meters).



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