prodatakey

SINGLE DOOR CONTROLLER

PM07SDC – W, E Installation Manual

smart access

Safety, Maintenance & Operational Information

Requirements
This manual is intended for trained and authorized installers of ProdataKey access control products. PDK Single and Eight door controllers require firmware version 2.1 or later. Later versions of this document will be posted to the ProdataKey website, as required. See other user manuals, also available on the ProdataKey website's Document Library. In this manual, ProdataKey and its door controllers are referred to as: the PDK products, single-door, eight-door, product, network door controller, single-door controller (SDC) eight-door controller (EDC), the appliance, and ACP.

Liability
Every care has been taken in the preparation of this document. Please inform ProdataKey Support of any inaccuracies or omissions. ProdataKey cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals 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 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 emission 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 product complies with IEC/EN/UL 60950-1, Safety of Information Technology Equipment. If you're connecting cables are routed outdoors, the product shall be grounded either through a shielded network cable (STP) or other 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 26bit Wiegand data input from approved readers.

ProdataKey reader part numbers PP-08-RDR-M, PP-08-RDR-G and PP-08-RDR-KP have been verified by ETL. See the Readers data sheet available at www.prodatakey.com > Support > Documentation Library.

Support
Should you require any technical assistance, please contact the ProdataKey support staff. Your questions and queries will be addressed as immediately as possible. You can research questions and queries from the ProdataKey website:

- Download user documentation and software updates from the partner portal
- Find answers to resolved problems in the FAQ and forum
- Report problems to ProdataKey support staff by logging in to the partner portal on the ProdataKey website
- Chat with ProdataKey support staff (North America only)
- Visit ProdataKey Support at www.prodatakey.com/support/

Learn More!
Visit ProdataKey learning center www.prodata.com/support/ for useful trainings, webinars, tutorials and documents.

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Safety Information

This guide 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.

Safety and Message Level Types

CAUTION		Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE		Indicates a situation which, if not avoided, could result in damage to property.
IMPORTANT		Indicates significant information which is essential for the product to function correctly.
NOTE		Indicates useful information which helps in getting the most out of the product.

Safety & Operations Notifications

NOTICE

- ***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 this product in a dry and 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 mounting the product could cause damage.***
    - ***To use the single door controller outside or in harsh environments use ProdataKey Gate Controller. Call sales for proper model based on your application.***
- ***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 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 and enclosures and prevent tampering.*
- *Protect the power cord, Ethernet cable, and ELK transformer wires from being walked on or pinched, particularly where they exit the can.*

Wiring Dimensions

Use 26 gauge minimum, 18 gauge maximum, stranded, for general wiring. Wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70. Follow these recommended wiring sizes:

Wiring for . . .	Recommended Dimensions
Power Input	18 gauge 2 conductor
Reader	22 gauge 6 conductor
Strike/Maglock	18 gauge 2 conductor
REX	18 gauge 4 conductor

Battery

USE 12VDC 1.2Ah - 1.3Ah LEAD-ACID BATTERY, WITH A RECOMMENDED BATTERY SIZE NOT TO EXCEED 4" (L) x 1.7" (W) x 2" (H).

Using a battery that meets following specifications will provide at least 30 minutes of backup power in the event of an AC loss:

Recommended Battery Type: *1- 12VDC 1.2Ah - 1.3Ah Lead-Acid Battery.*

Recommended Battery Size: *4" (length) x 1.7" (width) x 2" (height)*

Max Battery Pocket Dimensions: *5" (length) x 2" (width) x 2.75" (height)*

Note: The maximum battery weight on the Single Door Controller is 1 lb. 6 oz.

ADDITIONAL BATTERY ENCLOSURE

The addition of an extra enclosure installed next to this enclosure is an option as long as the additional battery is connected with conduit and proper battery terminal end connectors.

BATTERY MAINTENANCE, REPLACEMENT & DISPOSAL

Check the battery regularly and replace only with an identical battery or battery recommended by ProdataKey. Risk of explosion if the battery is incorrectly replaced. Dispose of used batteries according to local regulations or the battery manufacturer's instructions.

Warning

There is risk of a battery explosion if the battery is incorrectly replaced. Check the battery regularly and replace only with an identical battery or a battery recommended by ProdataKey. Dispose of used batteries according to local regulations or the battery manufacturer's instructions.

Power Supply

The following products and parts are required for the proper operation of the Single Door Controller, but are not included in the Controller box and are thus the responsibility of the installer/dealer:

AC INPUT

AC IN: CONNECT A LISTED CLASS 2 SURGE PROTECTED 16.5 VAC 40VA TRANSFORMER TO THE AC INPUT TERMINALS ON ACCESS CONTROL APPLIANCE POWER SUPPLY. THIS CONNECTION IS NOT POLARITY SENSITIVE. DO NOT CONNECT ANY OTHER DEVICES TO THE TRANSFORMER.

 ***ProdataKey highly recommends using an ELK TRG-1640 transformer.***

BACKUP BATTERY

MUST USE BACKUP BATTERY TO PREVENT SYSTEM FAILURE IN THE EVENT OF AN AC LOSS. USE 12VDC 1.2AH -1.3AH RECHARGEABLE LEAD-ACID BATTERY.

Installation Guide

This Installation Guide provides instructions for installing ProdataKey Single Door Controller (PM-07-SDC-W, E). For additional information on this product, refer to www.prodatakey.com > Support > Documentation Library.

Package Contents

Single Door Controller (1)
Antenna (1)
Battery Leads (3)
Jumpers (3)
Diode (1)
Labels (2)
Zip Ties (2)
Enclosure screws (2)
QuickStart Guide (1)

Single Door Controller includes door controller, power supply, and wireless or Ethernet communication module pre-mounted in the enclosure.

The ProdataKey Access Control Panel (ACP) is required to operate the Single Door Controller.

Recommended Tools

- *Drill*
- *Screwdriver*
- *Slotted screwdriver • Anchor screws (2)*
- *Screws (2)*
- *Wire stripping tool*

Additional Listed System Components

Access Control Appliance (ACP)	*Provides unlimited card holders, years of event storage, battery backup, and auto data backup.* *PN: PM-01-ACP*
Eight Door Controller (EDC)	*Run controls for multiple doors and/or build a larger network; also used for legacy system change out* *PN: PM07EDC-wimac™ WIRELESS / Ethernet: PM07EDC-ETHERNET*
Proximity Reader	*Must be UL294 listed.*
Proximity Credentials	*Must be UL294 listed.*
Electronic Locking Hardware	*Must be UL1034 listed.*

For information about other products and services, see www.prodatakey.com/Products

Mounting Instructions

Before you begin the installation, read all instructions. Make sure you have read and understood the Installation and Setup Safety and Operational Notes published in the System Notes on page 5.

Note: Ideal door controller mounting meets these conditions:

1: The door controller can is mounted at or near the door.

2: Door controllers are mounted at the same elevation as much as possible throughout a building, above the door frame or higher.

3: Strategic placement of door controllers will optimize wireless communication between door controllers.

4: Door controllers are installed in an environmentally-controlled, and secure area. ***Ensure that controller antennas are free from obstructions, metal objects or power cables that my cause wireless interference.***

Cautionary Notes

1: DO NOT mount the product while power is applied to the power supply. Always apply power at the end of the installation.

2: Disconnect power before connecting or working with the ProdataKey product. Never make connections while power is applied to the product.

These instructions for mounting the door controller allows you to easily fasten the can to the wall securely and properly.

1. Make sure you have the package contents, tools and other materials necessary for the installation on an appropriate surface (drywall, wood, stone, etc.) See page 7.

2. Pre-drill holes into the wall and place the anchors in the pre-drilled holes.

3. Place the can in position to the holes fitted with screw anchors.

4. Secure the door controller box to the wall with screws so the box is snug against the wall.

5. Attach the antenna to the RPSMA connector on top of the enclosure. See Antenna Mounting best practices on page 10.

6. Install the Reader and attach wires meeting your reader configurations. See Reader wiring diagram on page 16.

Note: Strip the wires as required, using a strip tool.

7. Connect the wires between the door controller and locks, doors, and other devices. For more information about the connectors and their specifications and diagrams, see the wiring diagram included in this installation guide: Maglock page 17, Door Strike (FSafe) page 18, and Door Strike (FSecure) page 19.

Note 1: For UL certified installations, all cable runs to the single door controller must be less than 30 meters (98.5 feet).

Note 2: Make sure all the wires are connected correctly prior to power up. Incorrect wiring could cause damage to the product.

8. Add the 12VDC/1.2aH battery, attaching the wires from the battery to the power supply board, BAT terminal.

9. Connect a listed Class 2 surge protected 16.5 VAC 40VA transformer to the AC input terminals on the included power supply. This connection is NOT polarity sensitive. DO NOT connect any other devices to the transformer.

For devices that have been configured in the product's hardware configuration pages, use the hardware pin chart as a guide on how to connect the pins. For more information about hardware configuration and the hardware pin chart, pages 11-12.

• For information about how to connect other wires, such as power wires to third party locks, readers and other devices, see their respective manufacturers' instructions.

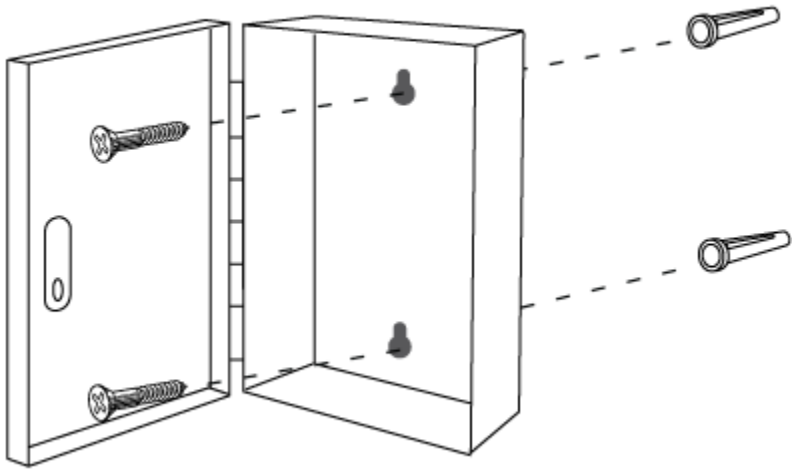

Figure 1: Wall Mount

Antenna Mounting: Best Practices

The wireless reach of the antenna spreads out in a horizontal, donut-like pattern. Because the enclosure can be mounted horizontally or vertically, there are some best practices about the antenna to consider:

- *Consider the strength and reach of the wireless signal. The antenna's signal strength has one mile line of sight, or an average of 450 feet indoors, depending on building construction type.*
- *Consider the antenna direction.*
    - *When mounting the controller horizontally, turn the antenna upward 90° for best signal.*
    - *When mounting the controller vertically, be sure the antenna is pointing straight upward for best signal.*
- *To optimize the signal strength, try to install all the controllers at the top of the door or higher, or in a drop ceiling.*
- *Be mindful of the building's construction in which you are installing the product. Having the antenna surrounded by metal or near high voltage can impair signal strength.*
- *It is not ideal to install multiple door controllers next to each other. When antennas on the door controllers are in close proximity can impair signal strength.*

SDC Components

Legend for Door Controller Board

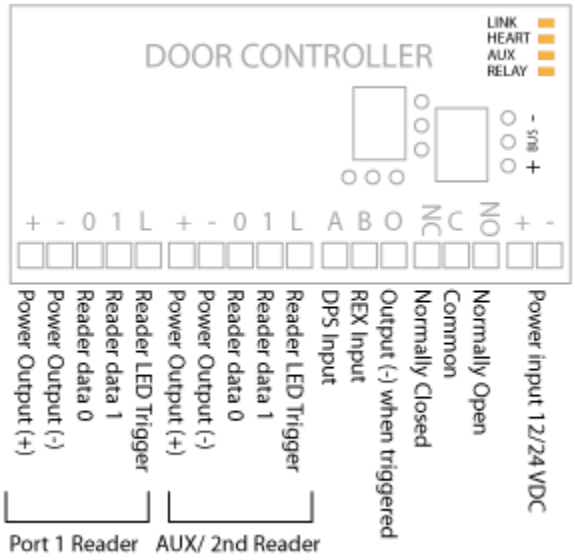

Figure 2: Door Controller Board Legend

PORT 1 READER	***AUX/2ND READER***	*k. DPS Input*	***POWER CONNECTORS***
a. Power Output (+)	*f. Power Output (+)*	*l. REX Input*	*q. Power Input 12/24VDC(+)*
b. Power Output (-)	*g. Power Output (-)*	*m. Output (-) when triggered*	*r. Power Input 12/24VDC (-)*
c. Reader Data 0	*h. Reader Data 0*	*n. Normally Closed*	
d. Reader Data 1	*i. Reader Data 1*	*o. Common*	
e. Reader LED Trigger	*j. Reader LED Trigger*	*p. Normally Open*	

Connectors

The following section describes the connector's technical specifications.

Port 1 Reader & AUX/2nd Reader Connector

5-pin terminal block supporting Wiegand protocols for communication with reader.

5 Pin Connector A		***PIN***	***NOTES***
Power Output	+	*1*	*Positive 12VDC out*
Power Output	-	*2*	*Negative 12VDC Out*
Reader Data	*Data 0*	*3*	*Wiegand Reader Input Data 0*

Reader Data	*Data 1*	*4*	*Wiegand Reader Input Data 1*
Reader LED Trigger	*L*	*5*	*Reader LED Output Trigger*

5 Pin Connector B		*PIN*	*NOTES*
Power Output	*+*	*1*	*Positive 12VDC out*
Power Output	*-*	*2*	*Negative 12VDC Out*
Reader Data	*Data 0*	*3*	*Wiegand Reader Input Data 0*
Reader Data	*Data 1*	*4*	*Wiegand Reader Input Data 1*
Reader LED Trigger	*L*	*5*	*Reader LED Output Trigger*
3 Pin Connector C			
DPS Input	*A*	*1*	*Door Position Switch or assignable*
REX Input	*B*	*2*	*Request to Exit or assignable)•Output 0 (N/O or N/C and + or - Selectable*
Output	*O*	*3*	*Trigger out with jumper configuration for wet positive or negative output.*
3 Pin Connector D			
Normally Closed	*NC*	*1*	*Normally closed connection for main form C relay with optional jumper configuration for wet positive or negative output.*
Common	*C*	*2*	*Common connection for main form C relay*
Normally Open	*NO*	*3*	*Normally open connection for main form C relay with optional jumper configuration for wet positive or negative output.*
2 Pin Connector E			
Controller Power Input	*+*	*1*	*12VDC Positive*
Controller Power Input	*-*	*2*	*12VDC Negative*

Door Controller LED Indicators

LED	*STATE*	*DESCRIPTION*
LINK	*Solid*	*No connection*
	Flashing	*Connection is active.*
HEART	*Flashing*	*Referred to the heart beat. Flashing indicates normal operation. If state becomes solid, possible serious hardware function. Call support.*
RELAY	*Solid On*	*Relay actuated, active. (Normally open, O connection).*
	Solid Off	*Relay is at rest, not active. (Normally closed, C connection}. No blinking state.*
AUX	*Solid On*	*Relay actuated, active.*
	Solid Off	*Relay is at rest, not active. No blinking state.*

Power Supply Setup

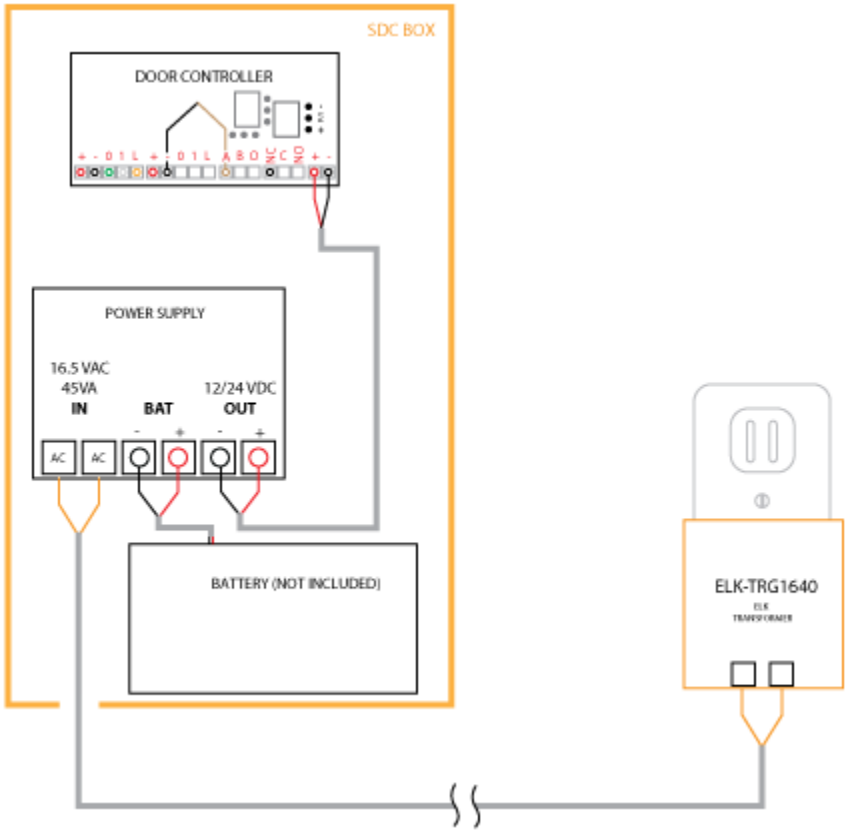

Figure 3: SDC Power Supply Diagram

NOTE: For UL certified installations all cable runs to Single Door Controller must be less than 30 meters (98.5').

Connection Instructions:

Connect a listed class 2 surge protected 16.5 VAC 40va transformer to the AC input terminals on access control appliance power supply. This connection is not polarity sensitive. DO NOT connect any other devices to the transformer.

PRODATAKEY HIGHLY RECOMMENDS USING AN ELK TRG-1640 TRANSFORMER.

NOTE: When batteries are not used, a loss of AC will result in a loss of output voltage.

LED DIAGNOSTICS		
Red (DC)	**Green (AC)**	**Power Supply Status**
●	●	Normal operating condition.
●	OFF	Loss of AC, Stand-by battery supplying power.
OFF	●	No DC output. Short circuit or thermal overload condition.
OFF	OFF	No DC output. Loss of AC. Discharged or no battery present.

Reader Setups

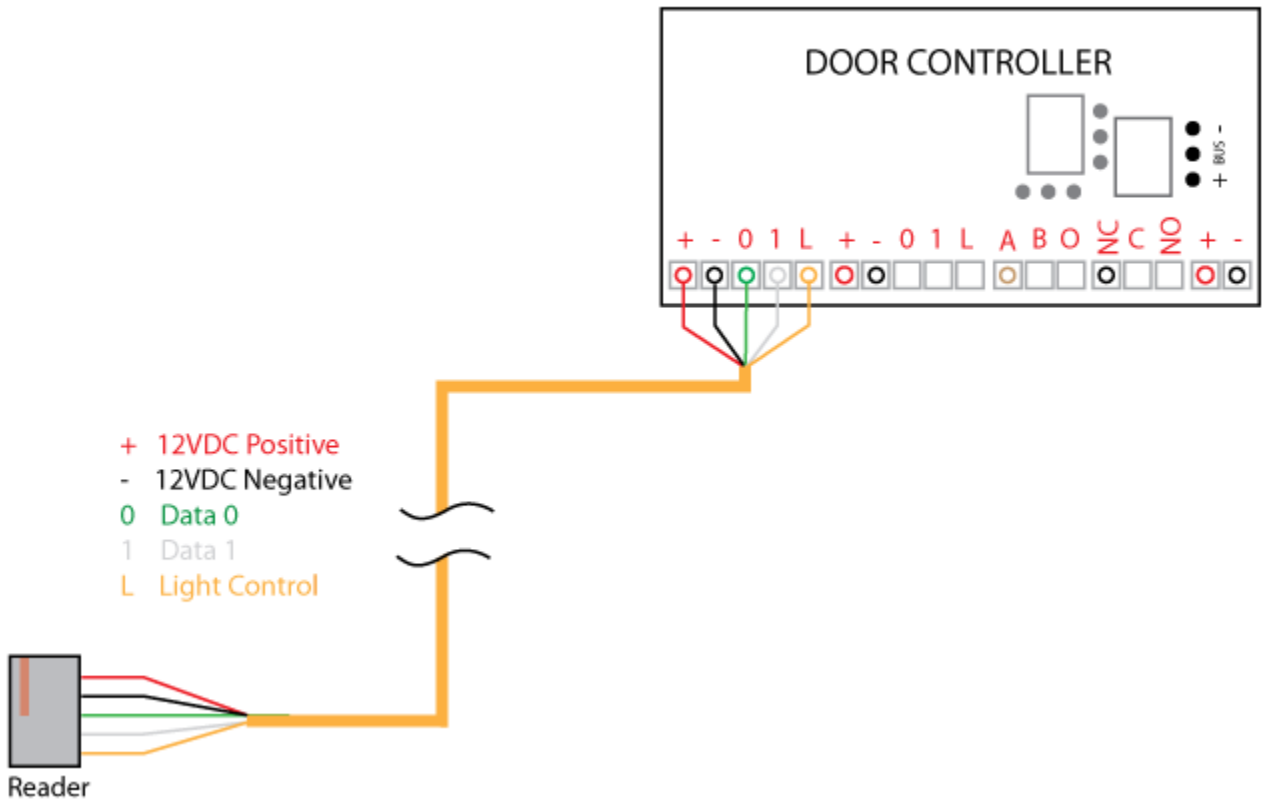

Figure 4: SDC Reader Wiring Diagram

Note: For UL certified installations all cable runs to Single Door Controller must be less than 30 meters (98.5').

Maglock Setups

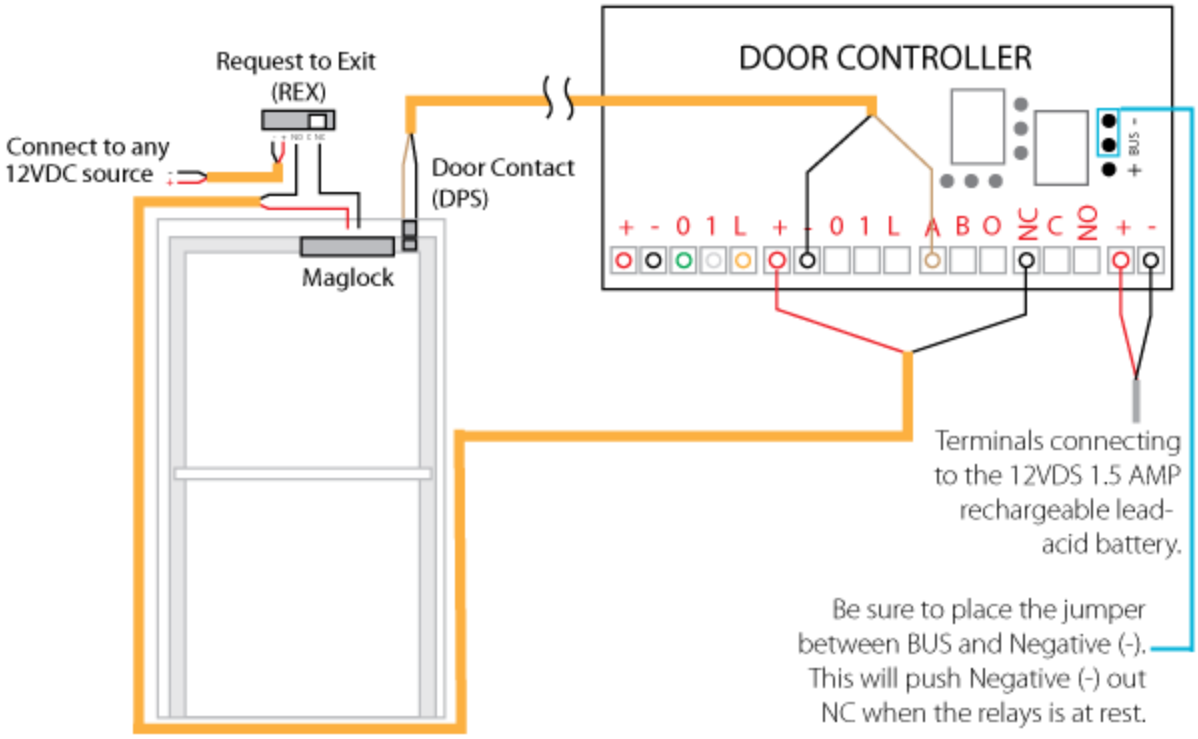

Figure 5: SDC Maglock Wiring Diagram

NOTE: For UL certified installations all cable runs to Single Door Controller must be less than 30 meters (98.5').

Door Strike (FailSAFE)

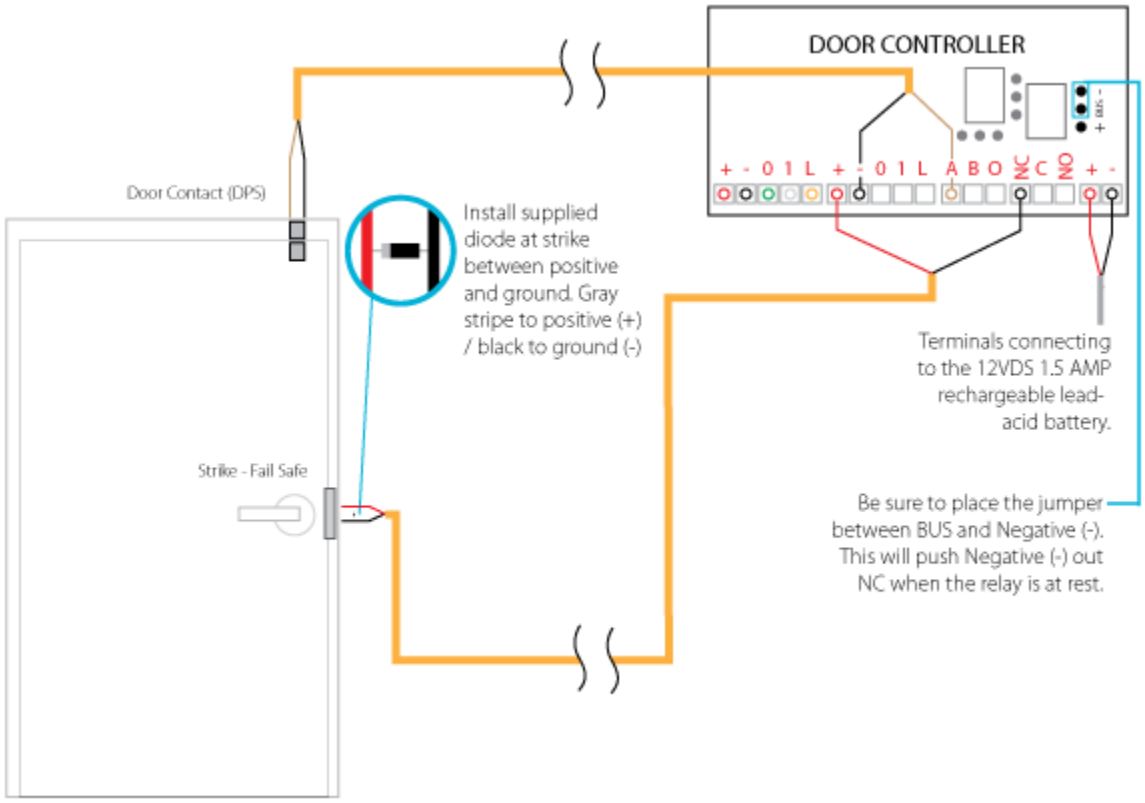

Figure 6: SDC Door Strike (FSafe) Diagram

Note: For UL certified installations all cable runs to Single Door Controller must be less than 30 meters (98.5').

Diode Setup Instructions

A diode is a standard device integral to the safe and proper function of the door controller. Specifically, the diode is a semiconductor device with two terminals. It acts as a grounding tool, allowing the flow of current in one direction only. When a door strike is called/requested/sent, the coil sends a spike down the line with as much as 50,000 volts. This is also called "kickback voltage." If there was not diode semiconductor, this kickback voltage would damage the control equipment.

When properly installed, the diode keeps "kickback voltage" localized at the lock.

Installing the Diode

To be effective in protecting your equipment against electrical kickback, follow these instructions:

The diode must be installed across the DC powered lock, at the strike, between positive and ground. Gray stripe to positive (+) / black to ground (-). DC voltage is polarized. The diode must be installed in the direction shown in the illustrations.

Door Strike (FailSECURE)

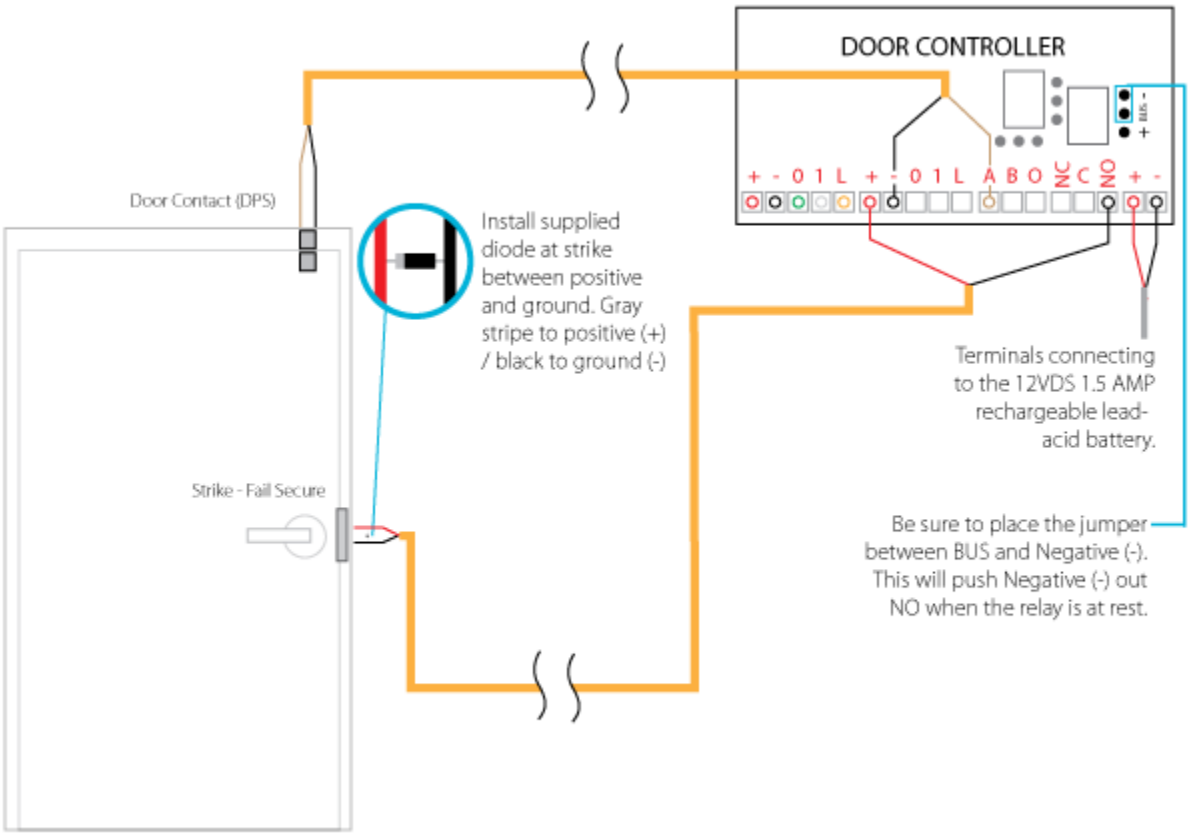

Figure 7: SDC Door Strike (FSecure) Diagram

NOTE: For UL certified installations all cable runs to Single Door Controller must be less than 30 meters (98.5').

Technical Support & Sales

Hardware / Software Install - Trouble tickets - Troubleshooting, Return Material Authorization

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