ACCESS CONTROL

INSTALLATION MANUAL

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Contents

IMPORTANT NOTE:

INSTALLATION OF FREUND INTEGRA ACCESS CONTROL SOLUTION MUST BE DONE BY AN AUTHORISED ELECTRICAL INSTALLER!

1. Getting Started

In this installation guide, we will explain how to install and configure Freund IP-INTEGRA Access Control Units and Freund Access Control Readers.

This Installation Guide explains how to install and configure FREUND IP-INTEGRA Access Control Units and FREUND ACC-Readers.

Please read this User Manual carefully before using the product. Follow all instructions and recommendations included herein.

Any use of the product that is in contradiction with the instructions provided herein may result in malfunction, damage, or destruction of the product.

The manufacturer shall not be liable and responsible for any damage incurred as a result of a use of the product other than that included herein, namely undue application and disobedience of the recommendations and warnings in contradiction herewith.

Any use or connection of the product other than those included herein shall be considered undue and the manufacturer shall not be liable for any consequences arisen as a result of such misconduct.

Moreover, the manufacturer shall not be liable for any damage or destruction of the product incurred as a result of misplacement, incompetent installation and/or undue operation and use of the product in contradiction herewith.

The manufacturer assumes no responsibility for any malfunction, damage or destruction of the product caused by incompetent replacement of parts or due to the use of reproduction parts or components.

The manufacturer shall not be liable and responsible for any loss or damage incurred as a result of a natural disaster or any other unfavorable natural condition.

The manufacturer shall not be held liable for any damage of the product arising during the shipping thereof.

The manufacturer shall not make any warrant regarding data loss or damage.

The manufacturer shall not be liable and responsible for any direct or indirect damage incurred as a result of a use of the product in contradiction herewith or a failure of the product due to a use in contradiction herewith.

All applicable legal regulations concerning the product installation and use as well as provisions of technical standards on electric installations must be obeyed.

The manufacturer shall not be liable and responsible for damage or destruction of the product or damage incurred by the consumer in case the product is used and handled contrary to the said regulations and provisions.

2. Additional resources

For more information, refer to our web site www.ip-integra.com where you can find product Datasheets and User Manuals.

3. Prior to installation

Prior to installing IP-INTEGRA ACC hardware, it is assumed that you have performed a customer site survey and have determined the following:

- Number of entries needed to configure (e.g. doors, gates, and/or elevator floors)
- Whether you're using existing or new wiring for IP/TCP and Reader connections
- Where to place Access Control units and LAN/PoE+ switches.
- What kind of electronic entry mechanisms, Request to Exit (REX) mechanisms, and door contact sensors will be used and their power requirements
- Whether you are providing backup batteries for the controllers

4. Components

Basic units

FE-MF-WR

13.56 MHz RFID card reader

FE-MF-TWR

13.56 MHz RFID card reader with keypad

FE-ACC-INT2D

IP/TCP (POE+) based 2-door IP-Integra access control module

FE-ACC-INT4D

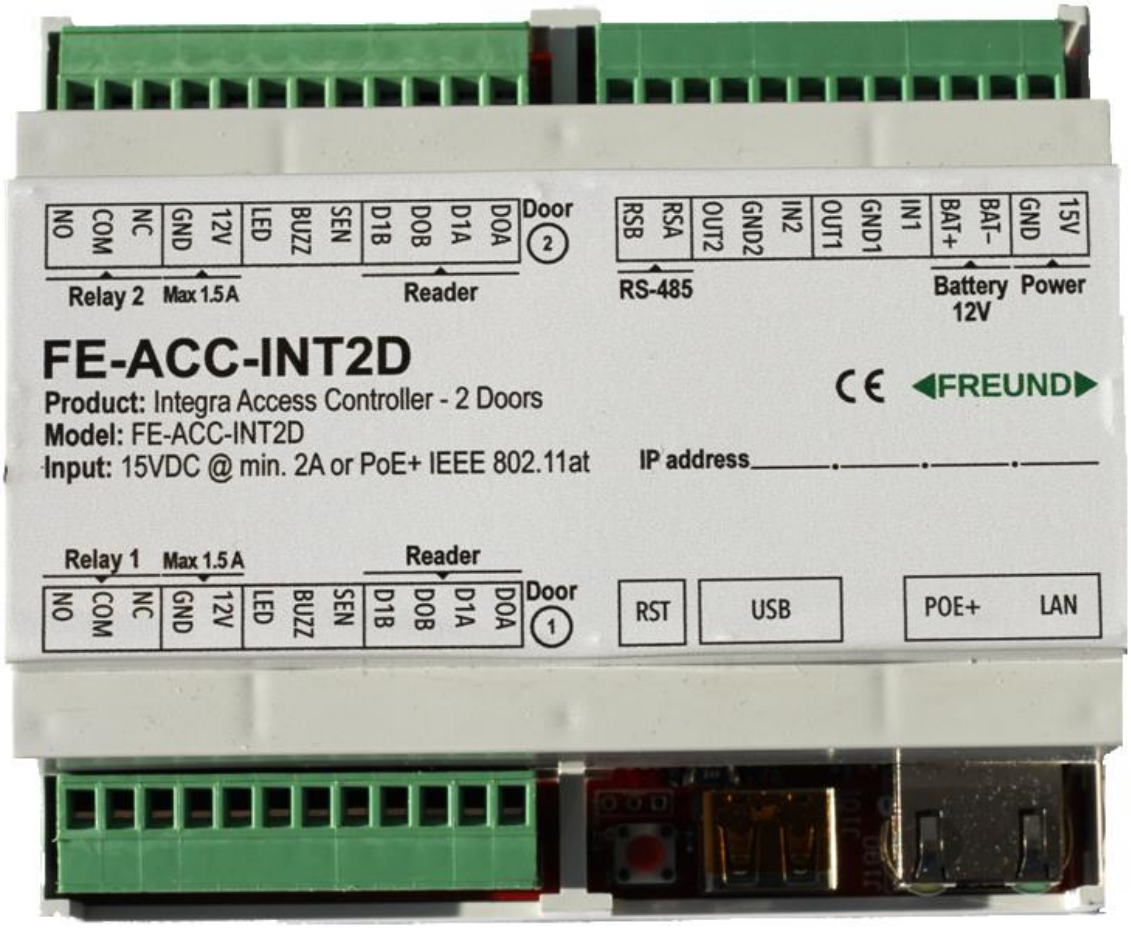
IP/TCP (POE+) based 4-door IP-Integra access control module

License

Cluster license USB

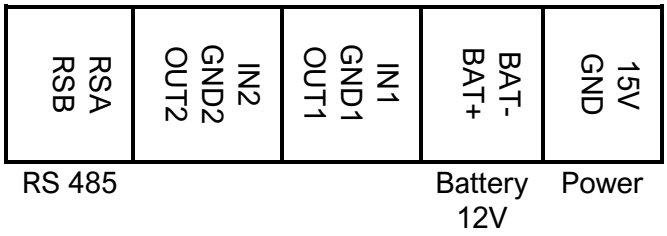
5. Pin assignment for the FE-ACC-INT2D and FE-ACC-INT4D

There are two types of control units FE-ACC-INT2D and FE-ACC-INT4D. INT2D can have two doors connected to it while INT4D can have four doors connected.

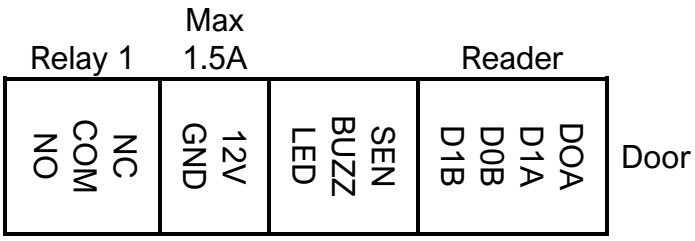


There are three types of pins which are described below.

Name	Function
RST	Reset button for the whole system
USB	Insert USB for cluster license
POE+ LAN	POE – used for power supply and connecting to network, through PoE switch LAN – connecting to network if PoE switch is not available; external power supply needs to be connected



Name	Function
15V	Connect positive side of external power supply
GND	Connect negative side of external power supply
BAT-	Connect battery negative side
BAT+	Connect battery positive side
IN1	N/A
GND1	N/A
OUT1	N/A
IN2	N/A
GND2	N/A
OUT2	N/A
RSA	N/A
RSB	N/A



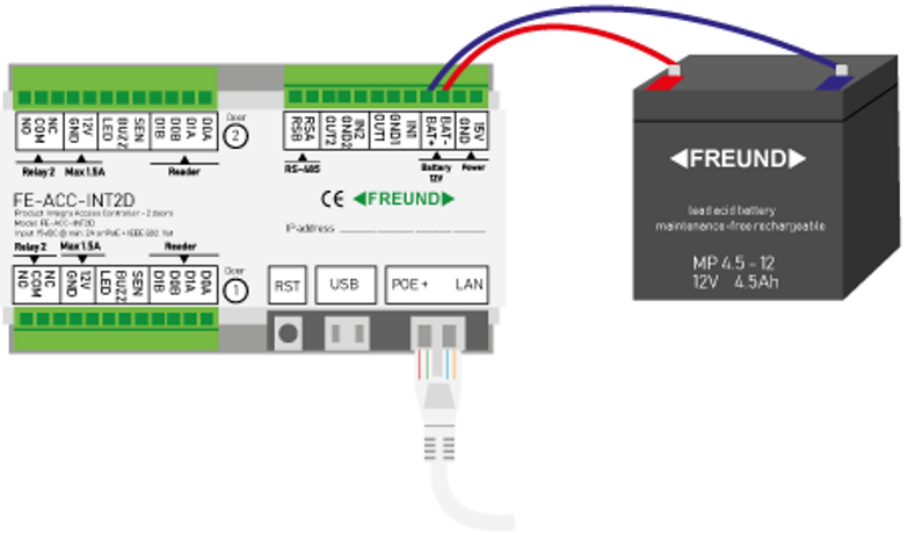
Name	Function
D0A	Data pin 0 for first reader
D1A	Data pin 1 for first reader
D0B	Data pin 0 for second reader/pin for push button
D1B	Data pin 1 for second reader
SEN	Sensor pin
BUZZ	Buzzer pin for reader
LED	LED indicator pin for reader
12V	Power supply for readers
GND	GND for readers
NC	Normally closed pin for relay
COM	COM for relay
NO	Normally open pin for relay

The two readers can be connected to each door from both sides.

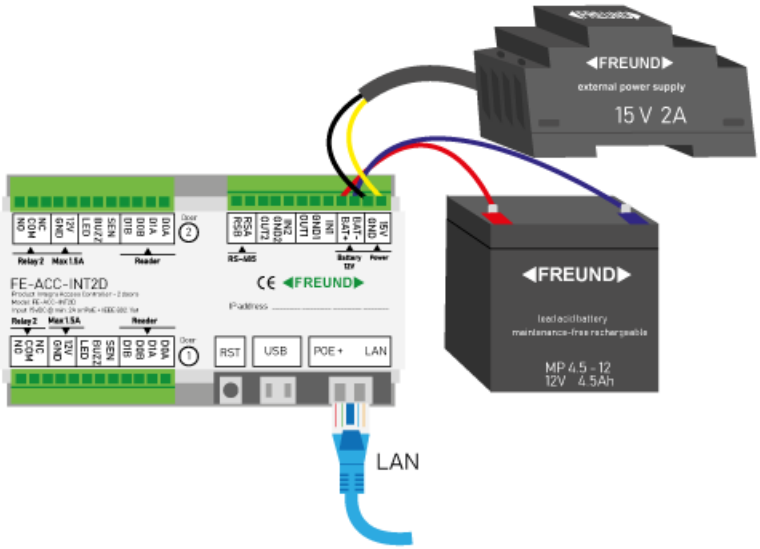
6. Connecting the Access Control module to the power supply and network

There are 2 types of connections shown in the pictures bellow. Battery power supplies the module in case there is a power shortage. Battery is charged through PoE or external power supply.

1. Connecting the battery and PoE+, where PoE+ acts as power supply and LAN. Red wire from the battery indicates plus while blue indicates minus.



2. Connecting the battery, external supply, and LAN. Red wire from the battery indicates plus while blue indicates minus.



Connecting the PoE and external power supply will not make any problems for module. For external power supply, we recommend following characteristics described in table below.

External power supply attributes	
Voltage input	85 ~ 264 VAC, 120 ~370 VDC
Voltage output	15 V
Current output (Max)	2 A
Power	30 W
Efficiency	89%
Frequency range	47 ~ 63 Hz
Ripple and noise (max)	120 mVp-p

7. Battery Details

Please refer to the Access controllers and Readers datasheets in order to calculate the suitable battery size related to the Access Control system requirements for power outage.

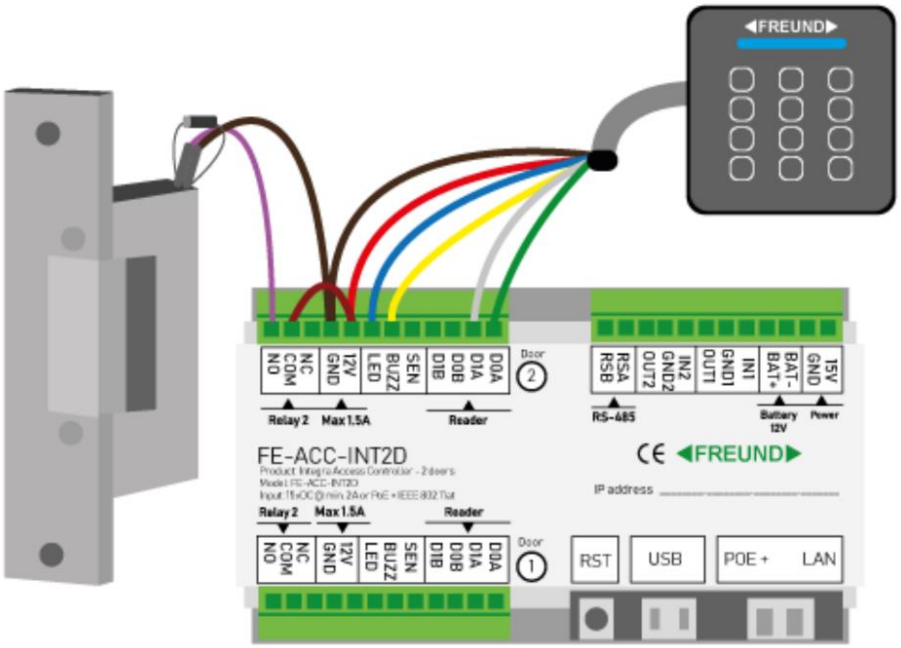
8. Connecting the Reader and the door lock to the Access Control module

Reader wires are described in table below.

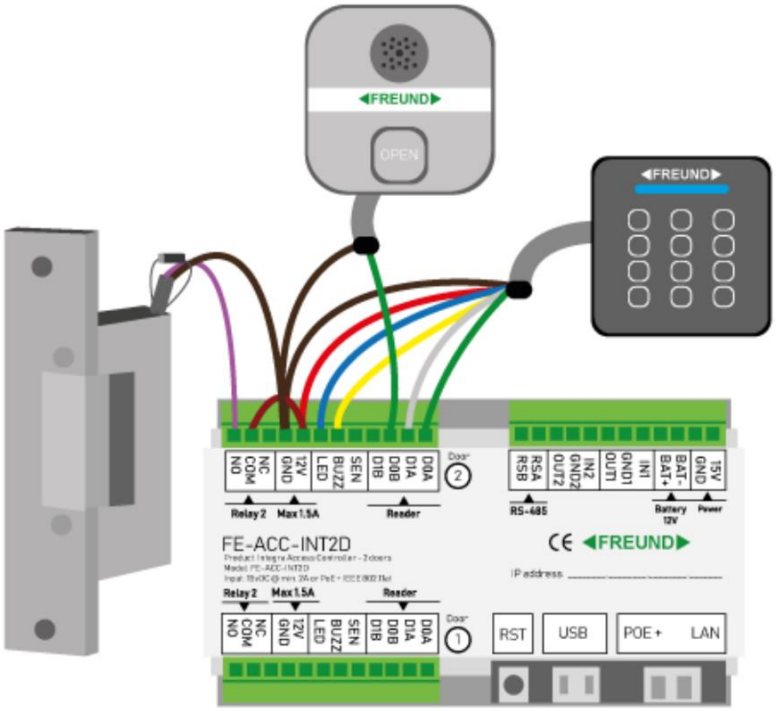
Color	Name	Function
Red	DC 9-24V	Power supply (+)
Black	GND	Power supply (-)
Green	WD0	Data
White	WD1	Data
Blue	LED	LED indicators on reader
Yellow	BUZZER	Buzzer on reader
Brown	RS485	OSDP connection
Orange	RS485	OSDP connection

There are 3 types of connections shown in the pictures below.

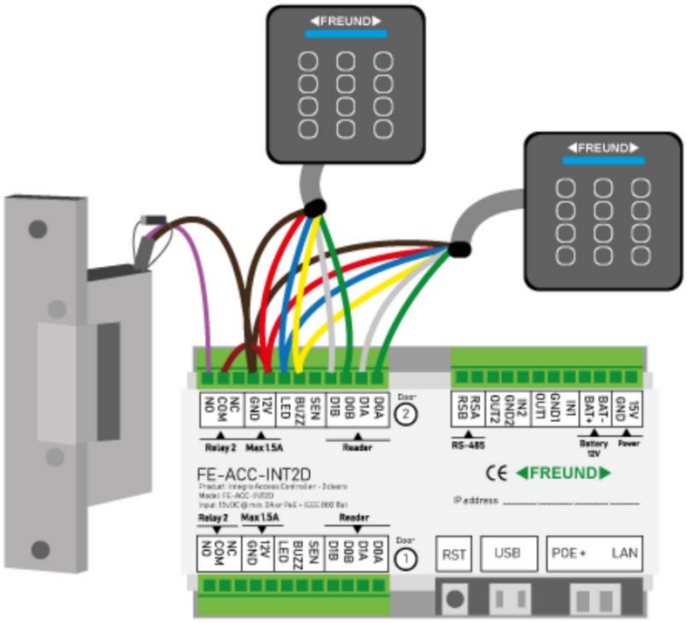
1. Connecting the door lock and the reader on one side of the doors.



2. Connecting two readers from both sides and one door lock.



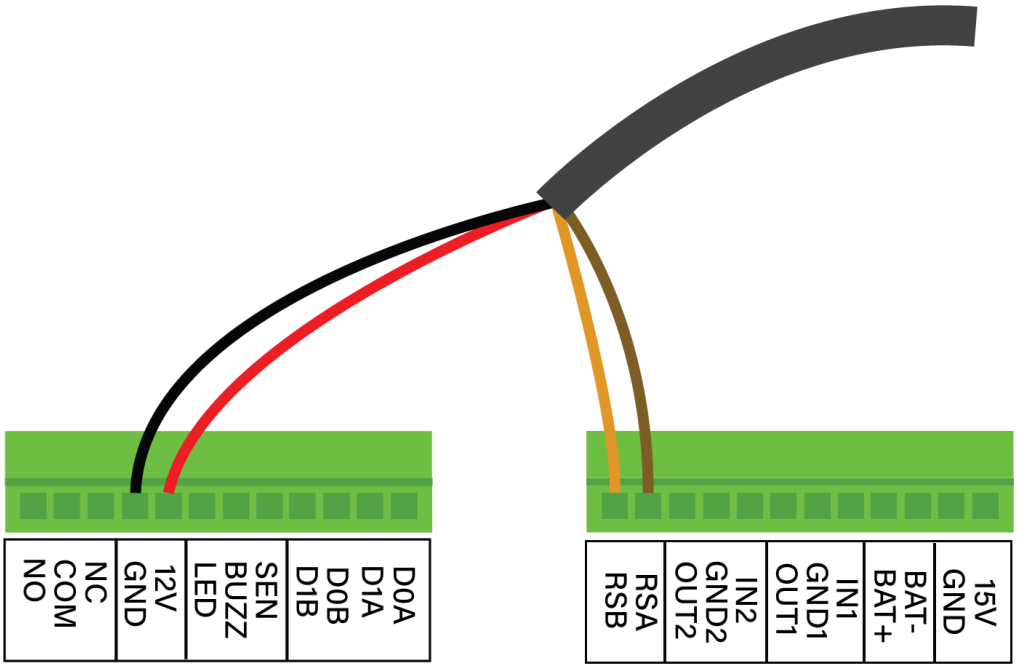
3. Connecting reader from one side and push button from oposite side which is connected to D0B and GND.



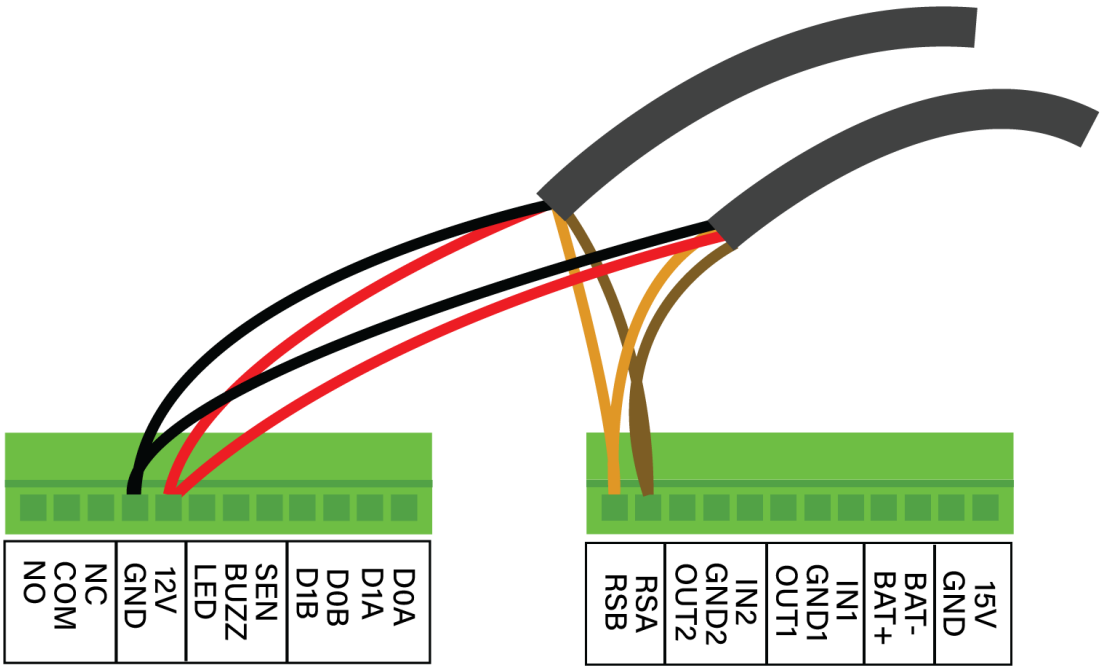
For every type of connection, the diode needs to be connected between NO and GND pin, and cathode in NO pin.

Using the OSDP protocol

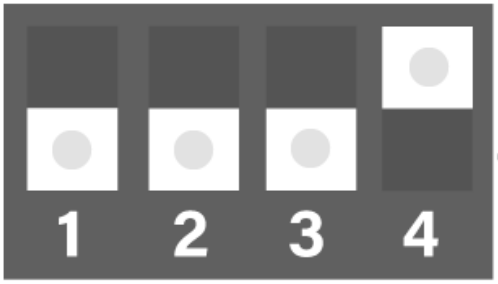
To use the OSDP protocol, we need to connect the reader to ACC module as shown in the pictures below.



In case we are using multiple readers, the way to connect them is as following:

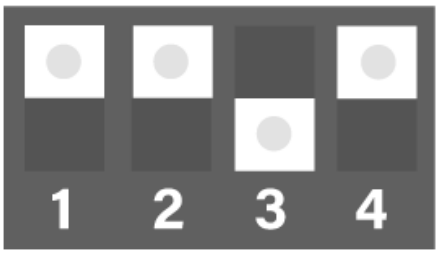


On the back side of the reader, the DIP switches need to be set up correctly to use the OSDP.

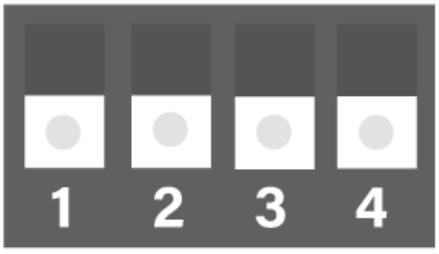


DIP 4	Reader Mode
ON	OSDP
OFF	Wiegand 36

DIP 1	DIP 2	DIP 3	OSDP Address	Door in system
OFF	OFF	OFF	0	Door 1 – Reader A
ON	OFF	OFF	1	Door 1 – Reader B
OFF	ON	OFF	2	Door 2 – Reader A
ON	ON	OFF	3	Door 2 – Reader B
OFF	OFF	ON	4	Door 3 – Reader A
ON	OFF	ON	5	Door 3 – Reader B
OFF	ON	ON	6	Door 4 – Reader A
ON	ON	ON	7	Door 4 – Reader B



Example :
DIP Switch OSDP setting for Door 2 - Reader B Address 3



Example :
DIP Switch Wiegand setting
DIP Switches 1-3 do not have a function

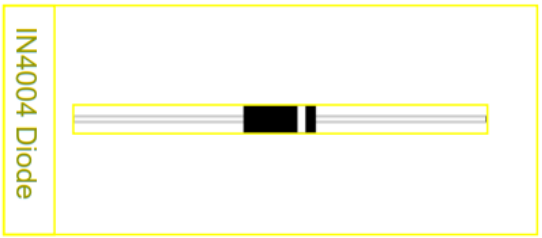
9. Additional notes about DC powered Electric Locks

Some electric locks do not come with Factory installed protection for “kickback voltage” that can occur when a lock is powered down.

If the lock you are using has no internal protection, we have included an IN4004 Diode for DC powered locks. The Diode is shown in picture below.

When properly installed this diode will keep “kickback voltage” localized at the lock.

FOR THESE COMPONENTS TO BE EFFECTIVE IN PROTECTING YOUR EQUIPMENT AGAINST ELECTRICAL KICKBACK PLEASE FOLLOW THESE INSTRUCTIONS.



For electric locking devices powered with DC voltage

The diode must be installed across the DC powered lock. DC voltage is polarized the diode must be installed in the direction shown in the illustrations. The side with the silver band must be connected to the positive leg of power.

IMPORTANT: THE DIODE MUST BE INSTALLED AS CLOSE TO THE LOCK AS POSSIBLE. THE BEST SCENARIO IS DIRECTLY ACROSS SCREW TERMINALS ON THE LOCK (IF AVAILABLE) AS SHOWN IN FIGURE 2.

IF THE ELECTRIC LOCK HAS POWER LEADS INSTEAD OF SCREW TERMINALS, SPLICE IT IN PARALLEL AS SHOWN IN THE EXAMPLE BELOW (FIGURE 3).

Figure 1
connection to maglock

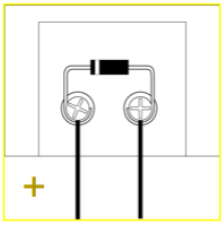


Figure 2
connection to lock terminals

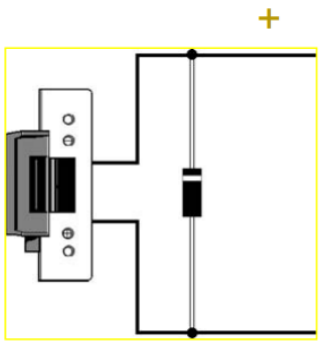


Figure 3
connection to DC Strike