

# VIRDI 3000 Installation Guide

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Version eng-1.01



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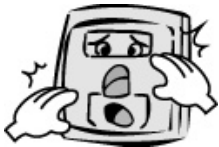
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# 1. Before start






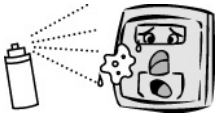

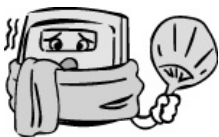
## 1.1. Safety precautions

### ● Warning

<p>Handling with wet hands or allowing liquid to flow into it is not advised. -&gt; It may cause an electric shock or damage.</p>		<p>Do not place a fire source near the unit. -&gt; It may cause a fire.</p>	
<p>Do not disassemble, repair, or modify the unit. -&gt; It may cause an electric shock, fire or damage.</p>		<p>Keep out of reach of children. -&gt; It may cause an accident or damage.</p>	

- If the above warnings are ignored, it may result in death or serious injury.

### ● Cautions

<p>Keep away from direct sunlight -&gt; It may cause deformation or color change.</p>		<p>Avoid high humidity or dust -&gt;The unit may be damaged.</p>	
<p>Avoid using water, benzene, thinner, or alcohol for cleaning -&gt; It may cause an electric shock or fire.</p>		<p>Do not place a magnet close to the unit. -&gt; The unit may break down or malfunction.</p>	
<p>Do not contaminate the fingerprint input area. -&gt; Fingerprints may not be well recognized.</p>		<p>Avoid using insecticides or flammable sprays near the unit. -&gt; It may result in deformation or color change.</p>	
<p>Avoid impacts or using sharp objects on the unit. -&gt; The unit may be damaged and broken.</p>		<p>Avoid severe temperature changes -&gt; The unit may be broken.</p>	

- If the above cautions are ignored, it may result in property loss or human injury.

※ Under no circumstances will Union Community be responsible for accidents or damages caused by inappropriate use of the product caused by not referring to the user manual.

1.2. Terminal description

**LED lamp : Terminal operation state**

- PWR : ON when VIRDI 3000 is under normal operation
- DOOR: Yellow ON when electronic door open/close unit is open after authentication  
Red ON when the terminal case is open

**Mic :**  
Connect to interphone



**LCD display window :**  
Display character message for all the operations

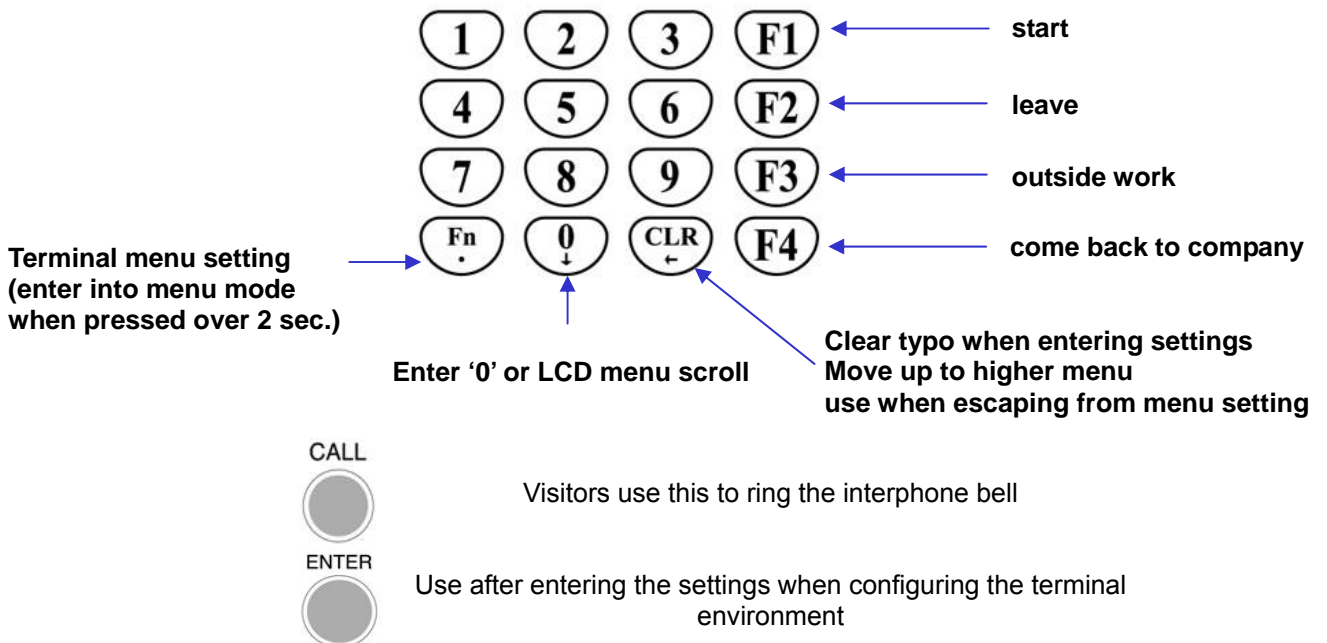
**Fingerprint input window :**  
Window for fingerprint input

**Speaker :**  
Explanation of operation state and communication with interphone

**Card input position :** Option

**Keypad :** Enter numbers for environment setting or authentication ID input

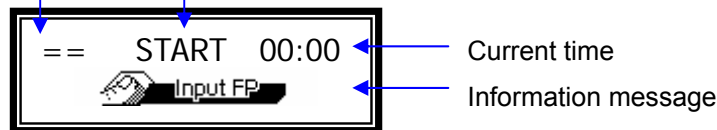
1.3. Button description




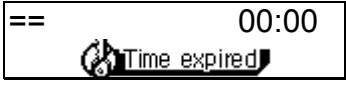



1.4. Screen (during operation) description

- == connected to network server
- ← disconnected to network server

in/out display during in/out control ( F1, F2, F3, F4 )  
 start/leave display during start/leave control ( START, LEAVE, OUT, BACK, NORMAL )  
 menu display during meal control ( MENU-1, MENU-2, MENU-3, MENU-4 )



	- Initial screen
	- Waiting for a user's ID to be input
	- Fingerprint input
	- Password input
	- Authentication successful
	- Authentication failed
	- Entered a non-registered user ID
	- Connection method is SN and 1:N identification is accessed even though there is no user allowed for 1:N identification
	- When the terminal is under meal control mode, a user tries authentication during meal time.
	- There is no response from the server during the authentication process. - Network to server is disconnected during the authentication process.
	- There is no user registered on the terminal or no connection to the server, so it is trying to connect.

	- Waiting for card to be input
	- A registered user tried authentication when entry/exit is not allowed.
	- Waiting for a reply from the server for authentication
	- Terminal is locked - No meal time even though the unit is set to meal control mode
	- Terminal program upgrade (Power switch should not be turned off when this message is displayed.)

1.5. Voice information during operation

“Please enter your fingerprint”	Enter fingerprint using the fingerprint input window
“You are authorized”	Authentication successful
“Please try again”	Authentication failed

1.6. Buzzer sound during operation

“ppig”	When a button is pressed or a card is being read When fingerprint input is completed, allowing the user to remove his fingerprint
“ppibig”	Authentication failed or wrong user input
“ppiririck”	Waiting for fingerprint input
“ppiririck”	Authentication successful or settings for the current user are completed

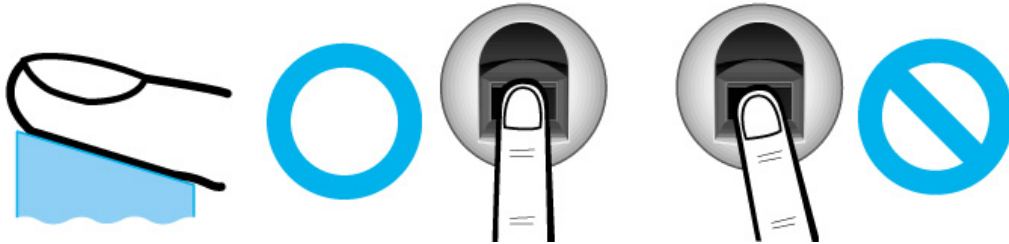
1.7. LED signal during operation

PWR	●	Power On/Off
DOOR	●	Door Open/Close
[2 color]	●	Terminal Case Open/Close

## 1.8. Correct fingerprint registration and input methods

- Correct fingerprint registration methods

Place your index finger on the window just as you do with a finger stamp. Finger tip touching is not an appropriate registration or input method. Make sure the center of your finger touches the window.



- Use your index finger.

The index finger guarantees an accurate and stable fingerprint input.

- Check if your fingerprint is unclear or damaged. It is tricky to recognize fingerprints on dry, wet, unclear, or injured fingers. Use another finger in this case.



- Cautions about fingerprint condition

Depending on the user's fingerprint condition, some fingerprints may not be used or may cause an inconvenience.

- If the fingerprint is damaged or very unclear, then it cannot be recognized. Please use a password instead in this case.
  - When a finger is dry, breathe on the finger for smooth operation.
  - For kids, it may be tricky or impossible to use the unit because their fingerprints are too small or very unclear. It is recommended to register their fingerprints every six months.
  - For the elderly, it may not be possible to register their fingerprints if there are too many fine lines on the fingerprints.
  - If fingerprints are very unclear, it may be convenient if you register 2~3 fingerprints.
  - It is recommended that you register more than 2 fingerprints.
-



## 2. Introduction

### 2.1. Features

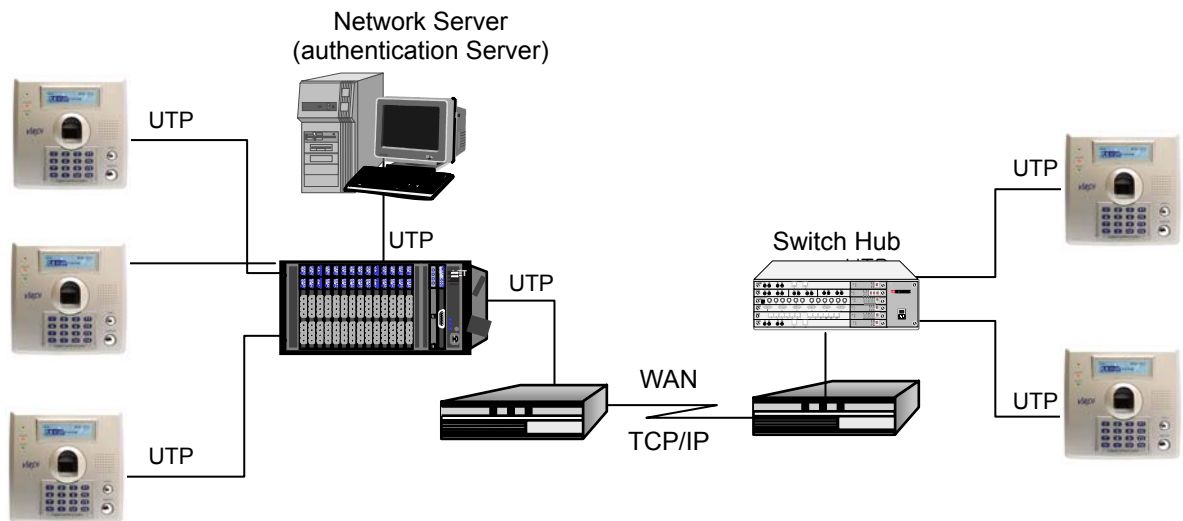
- Access control system using LAN
    - Communication between the unit and authentication server is done through a UTP cable and TCP/IP protocol, so an existing LAN can be used as it is. It guarantees network-based administration and monitoring as well as easy expansion, high reliability, and higher speed.
  - Convenient Auto Sensing function
    - Simple authentication process without any key input; simple fingerprint touching is sufficient.
  - Simple authentication using fingerprints
    - Due to Biometrics fingerprint recognition technology, it is not necessary to carry a password, card, or key, etc., or to worry about robbery. This improves the level of security.
  - High capacity of terminal and server
    - There is no limit on fingerprint registration for the server, and the unit itself can store up to 8,000 fingerprints.
  - Various information messages
    - It ensures easy fingerprint recognition because voice and LCD window information are provided during the authentication process. In addition, the backlight installed in the LCD window helps with easy key operation in the dark.
  - Door phone
    - Easy visitor identification and convenient response.
  - Various and flexible Access controls
    - No risk of rent, forgery, or loss of keys or cards
    - Perfect control by assigning different security clearances to each user or group
    - Provides flexibility by allowing limited time for entry/exit
    - Low maintenance and development costs compared to other units
    - No need to issue a visitor card to a visitor
  - Various applications including entry/exit, start/leave, meal counting, etc.
    - Various operation modes depending on the terminal menu settings
-

- Various registration and authentication methods
  - There are a total of 11 registration and authentication methods (4 methods if the card reader is not installed), so you are required to select one method before registering users and an administrator.

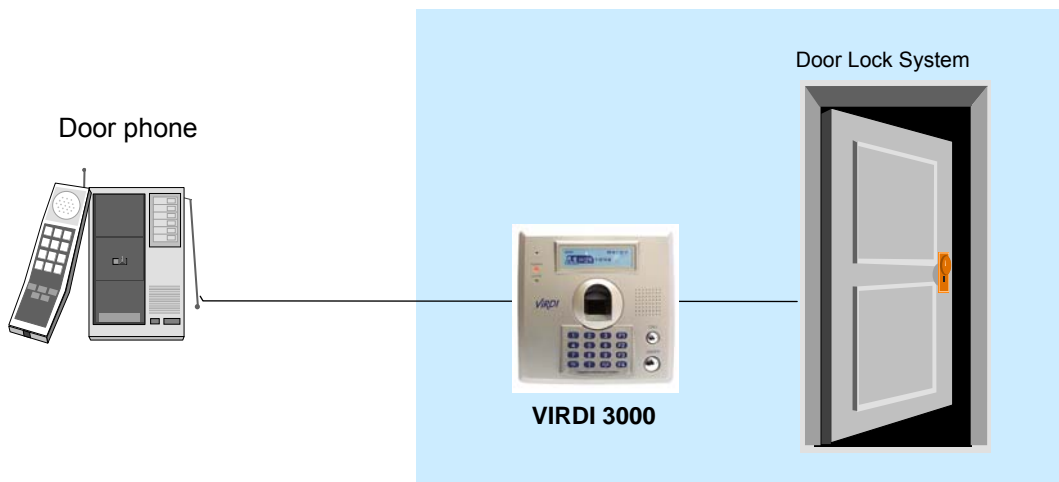
FP	Fingerprint registration Fingerprint authentication
ID&PW	Password registration Password authentication
FP PW	Fingerprint and password registration Fingerprint or password authentication
FP&PW	Fingerprint and password registration Password authentication after fingerprint authentication
RF	Card registration Card authentication
RF FP	Card and fingerprint registration Card or fingerprint authentication
RF&FP	Card and fingerprint registration Fingerprint authentication after card authentication
RF PW	Card and password registration Card or password authentication
RF&PW	Card and password registration Password authentication after card authentication
ID&FP RF&FP	Card and fingerprint registration Fingerprint authentication after ID input or fingerprint authentication after card authentication
ID&PW RF&PW	Card and password registration Password authentication after ID input or password authentication after card authentication

## 2.2. Configuration

### 2.2.1. Network configuration



### 2.2.2. Single configuration









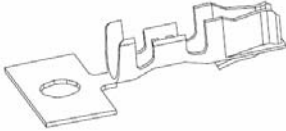

## 2.3. Specifications

Item	SPEC	REMARK
CPU	32-Bit RISC CPU (266MHz)	
MEMORY	8M SDRAM	
	4M FLASH (Default)	3,520 fingerprints
	8M FLASH (Option)	8,160 fingerprints
Fingerprint sensor	Optical	
Authentication speed	<1 sec.	
Scan Area / Resolution	12.9 * 15.2mm / 500 DPI	
FRR / FAR	0.1% / 0.001%	
Communication Port	TCP/IP, RS-232, Wiegand	
	RS-485 (Option)	
Temperature / Humidity	-10~50 / Lower than 90% RH	
LCD	122 X 32 Graphic LCD	
SIZE	137 X 137 X 50mm	
AC / DC Adapter	INPUT: Universal AC 100~250V	
	OUTPUT: DC 12V (Option: DC 24V)	
	UL, CSA, CE Approved	
Options	RF Card Reader	EM Card, 125kHz
	Smart Card Reader	A-type, 13.56MHz
	Door phone	

### 3. Installation Guide

#### 3.1. Product Composition Items

Type	Shape	Number	Usage
Product		1 Set	Entrance Restriction
Adapter		1 EA	Power Conversion (12V~24V)
POWER Cable		1 EA	POWER Supply (110V~220V) **Shape change for 110V
Secure Plate		1 EA	Securing Product
Securing Screw		4 EA	Securing Plate
		2 EA	Securing Plate (Backup)
		4 EA	Securing Product

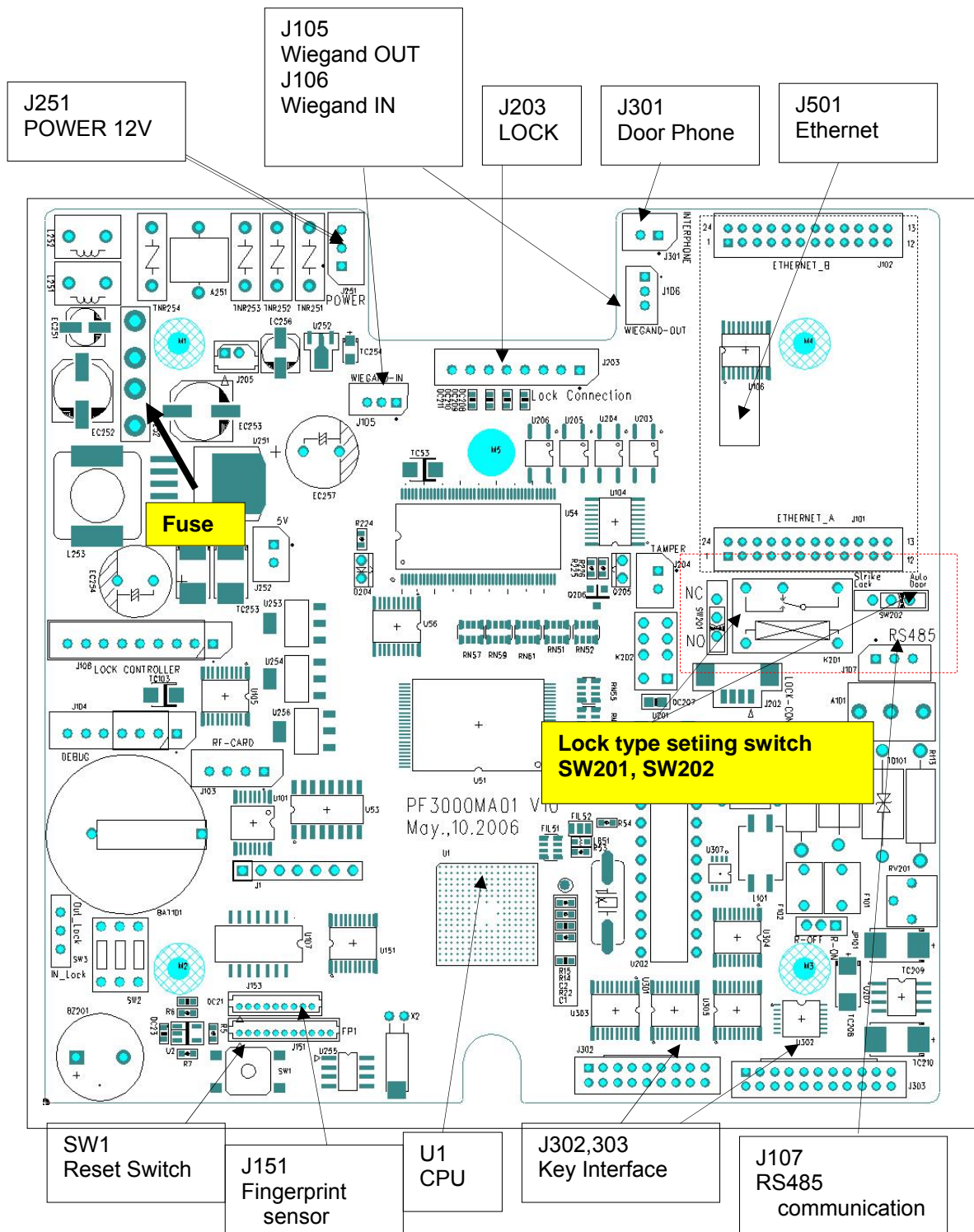
HOUSING & Terminal		1 EA	8-PIN Lock Cable
		1 EA	2-PIN Door Phone Cable
		10 EA	Terminal
Driver (OPTION)		1 EA	Driving Product Securing Screws

## 3.2. Installation Environment Conditions

### 3.2.1. Environment Conditions

- Only regulated 110V~220V power must be used. Especially if you are using emergency power, receive the Manager's consent.
  - This product was designed for indoor installation. Please avoid direct light rays, snow, rain, etc.
  - All cables should be buried, so please review properly before installation.
  - Avoid moist areas with a lot of dust when installing.
  - Arbitrarily repairing or disassembling the product can result in electrocution or fires. Only expert technicians should do such jobs.
  - Extending the DC (12V~24V) line causes a voltage drop, preventing proper power supply to the product. Please show caution when installing.
-

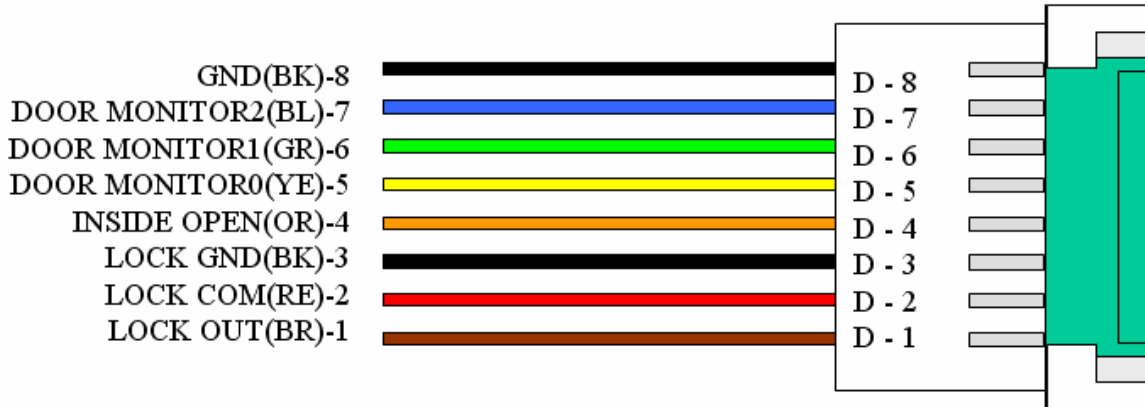
3.3. Main Board Composition



<Figure 3.3.1> main board composition



3.4. PIN Specifications of Each Product Part

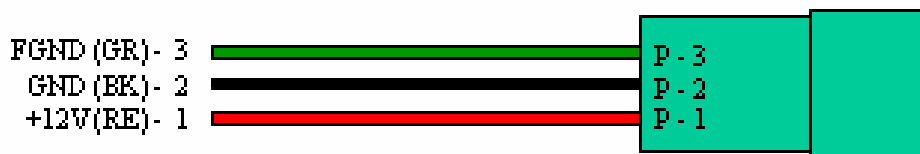


<Figure 3.4.1> 8-PIN door lock housing

	FUNCTION	REMARK
1	DOOR-OUT(+Vin)	LOCK control voltage
2	LOCK COM	Powerless connection control (if JP201 removed)
3	GND	GROUND
4	INSIDE-OPEN	Inner door OPEN switch
5	DOOR MONITOR 0	Door status MONITORING
6	DOOR MONITOR 1	Door status MONITORING
7	DOOR MONITOR 2	Door status MONITORING
8	GND	GROUND



<Figure 3.4.2> 2-PIN door phone sound housing



<Figure 3.4.3> 3-PIN power supply housing

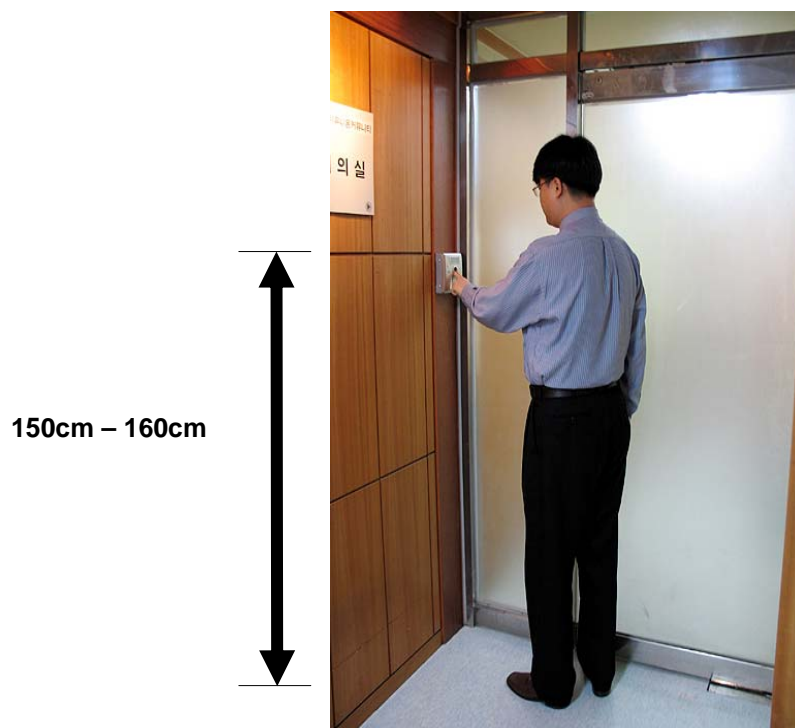
### 3.5. Installation

#### 3.5.1. Installation Process (All)

- 1) Select the product installation location and the Electric Lock type according to the fireproof door type.
- 2) Confirm the locations of the LAN line and main power(110V–220V) and connect the lines.
- 3) When connecting the door phone, connect the lines so that the product and door phone are less than 30m apart.
- 4) Assemble the 8-PIN Housing using the terminals according to the electric lock type.
- 5) Assemble the 2-PIN Housing of the door phone line using the terminals.
- 6) Secure the secure plate to the wall using the 4 securing screws.
- 7) Connect the terminals and secure the product to the plate.
- 8) Supply power, check that the product is functioning, and install the software on the PC.



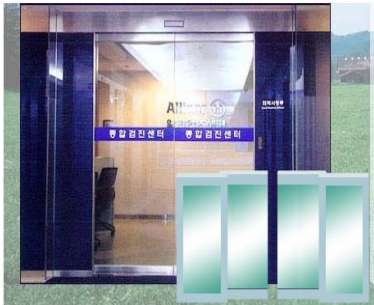
#### 3.5.2. Installation Process Order (Detailed)

- 1) Select the product installation location and the Electric Lock type according to the fireproof door type.
  - ☞ 150cm~160cm from the floor is appropriate for the product.




<Figure 3.5.1> product installation position

The electric lock is classified into 4 categories according to the fireproof door type.


Category	Shape	Capacity	Notes
Dead Bolt		Input voltage: DC12V Consumed current: less than 1A	Power control
Electro-magnetic Lock		Input voltage: DC12V Consumed current: less than 1A	Power control
Electric Strike		Input voltage: DC12V Consumed current: less than 1A	Power control
Auto Door		Connection point signal produced	Connection control

<Figure 3.5.2> electric lock types

2) Confirm the locations of the LAN line and main power (110V–220V) and connect the lines.

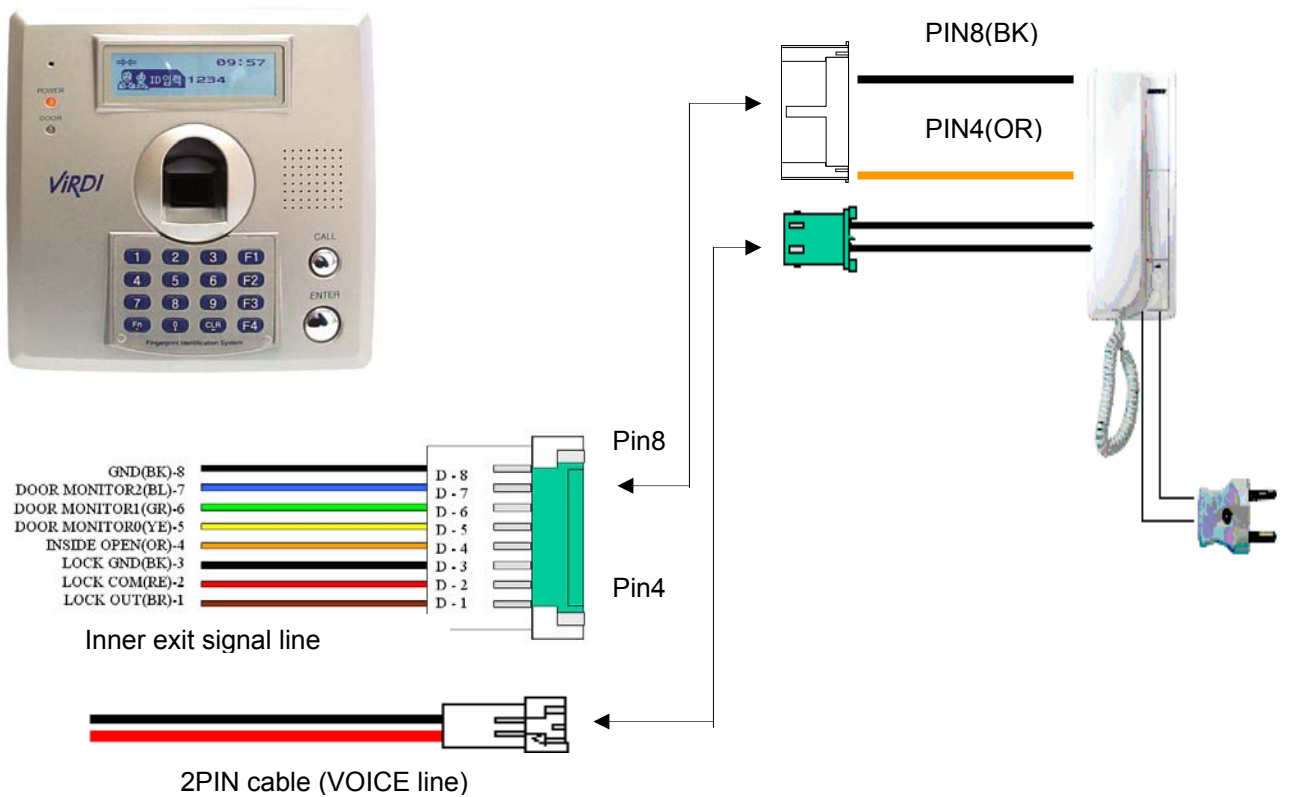


Ensure that the UTP cable allows TCP/IP communication between the hub and the product using LAN tools, the RJ-45 connector, and a boot. Once you are done, use the LAN test equipment to check if the connection is working properly.



The main power and adapter must be installed inside a wall or in the inner ceiling.

3) When connecting the door phone, connect the lines so that the product and door phone are less than 30m apart. Connect to PIN2 for voice communication, and connect to PIN8 for the inner exit line.

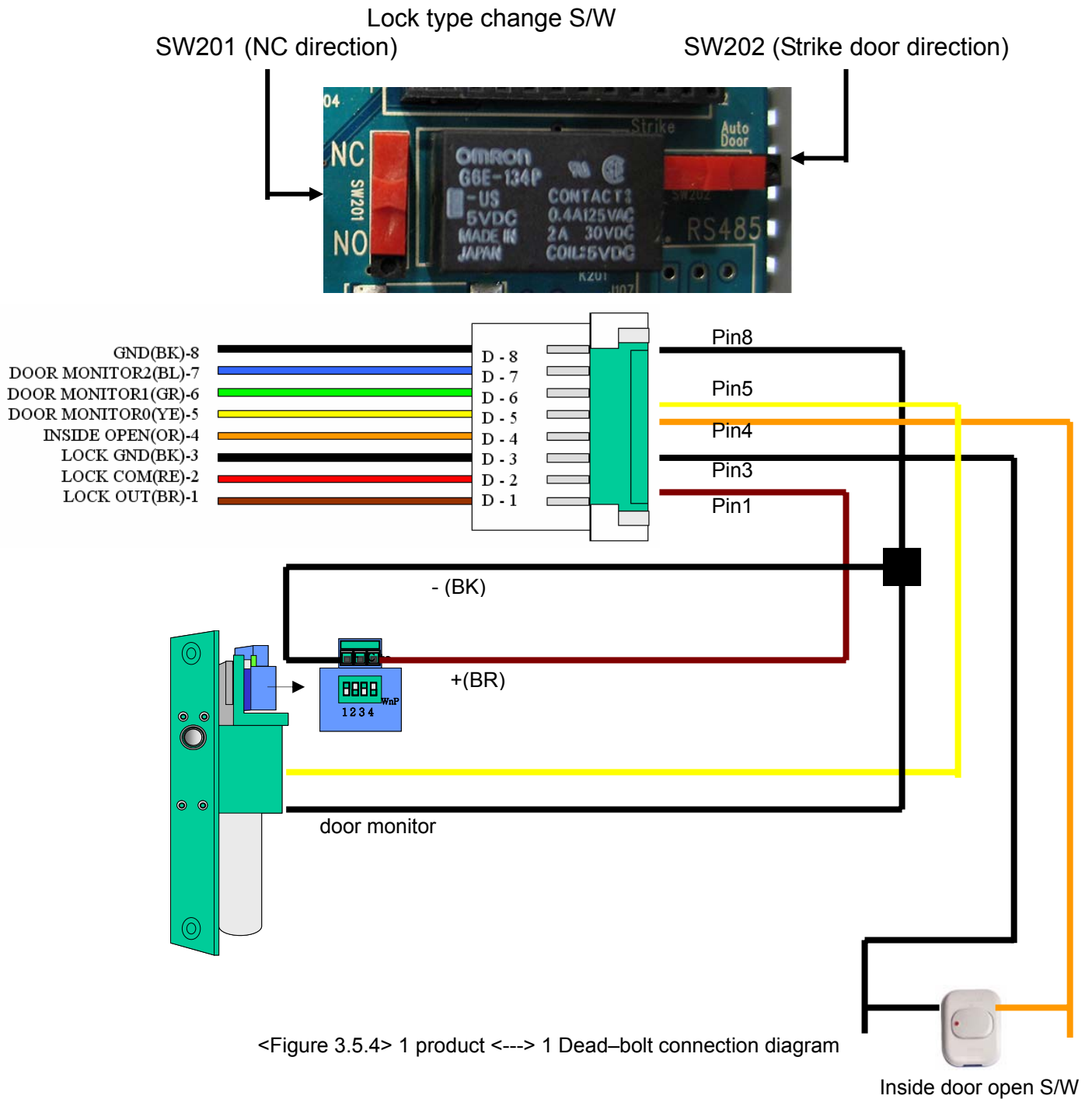


<Figure 3.5.3> door phone connection diagram

4) Assemble the 8-PIN Housing using the terminals according to the electric lock type.

**4-1) Dead-bolt type door lock (fail safe)**

① 1 product <---> 1 Dead-bolt connection diagram

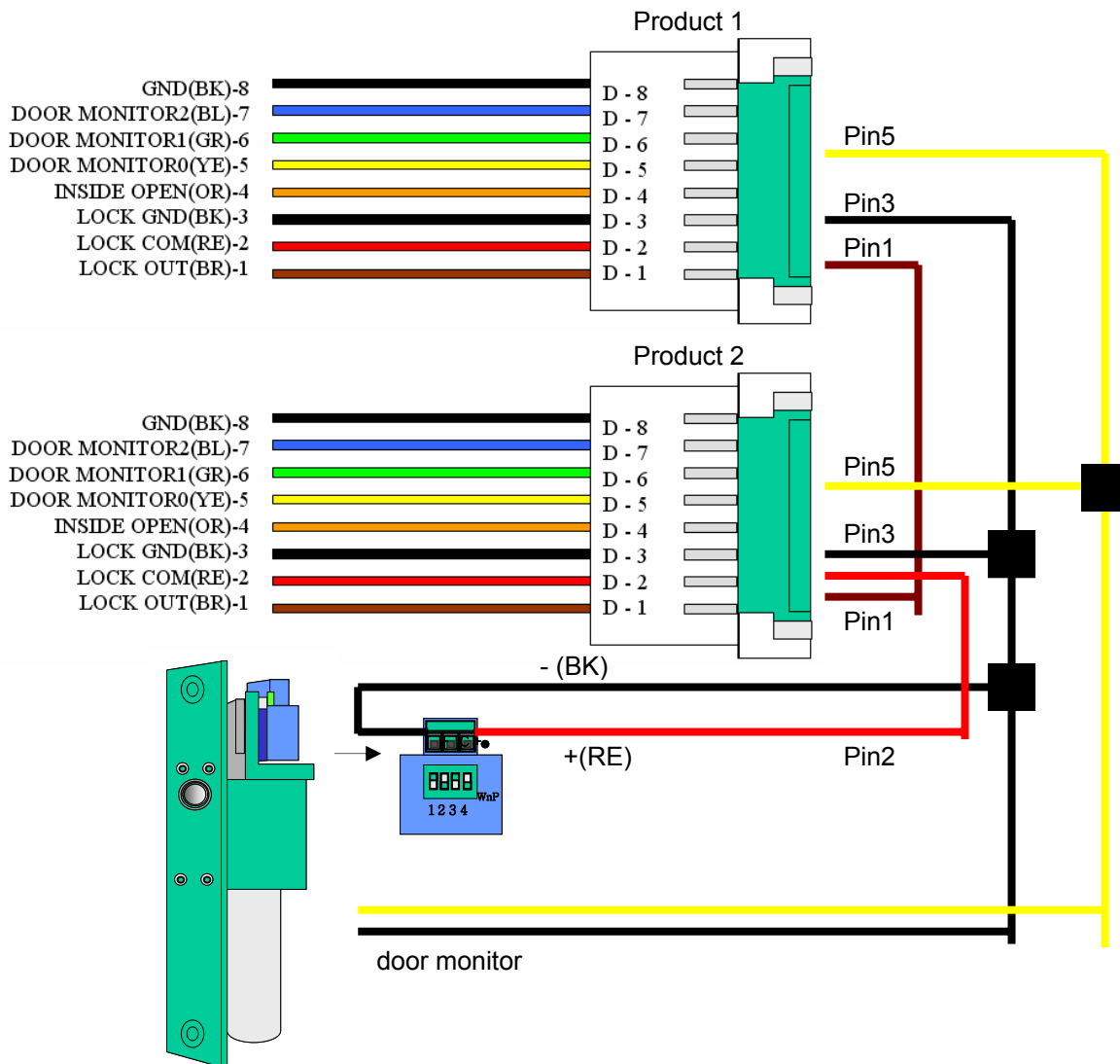


② 2 products <---> 1 Dead-bolt connection diagram

Lock type change S/W

Product 1: SW201 (NC direction)  
SW202 (Strike lock direction)

Product 2: SW201 (NC direction)  
SW202 (Auto door direction)



<Figure 3.5.5> 2 products <---> 1 Dead-bolt connection diagram

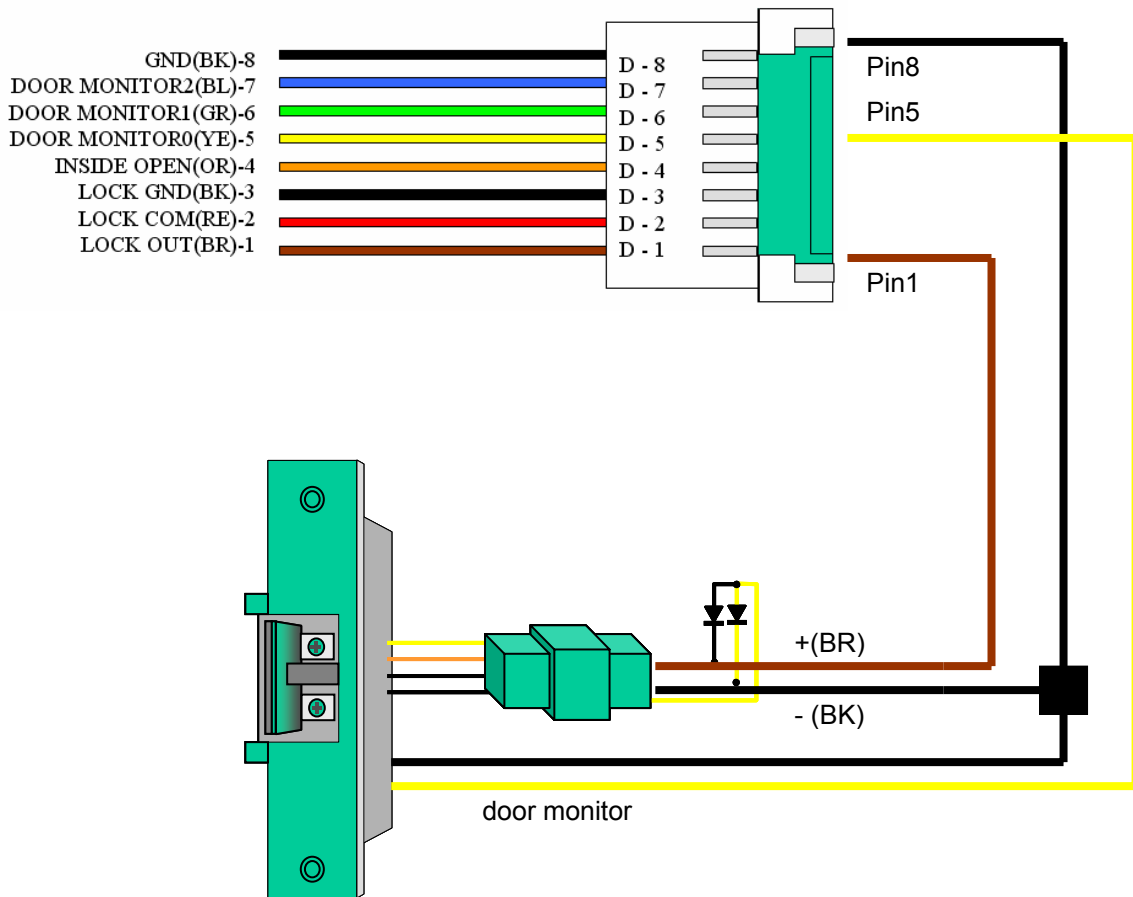
**4-2) Strike type door lock (fail safe)**

① 1 product <---> 1 Strike lock connection diagram

Lock type change S/W

SW201 (NC direction)

SW202 (Strike lock direction)



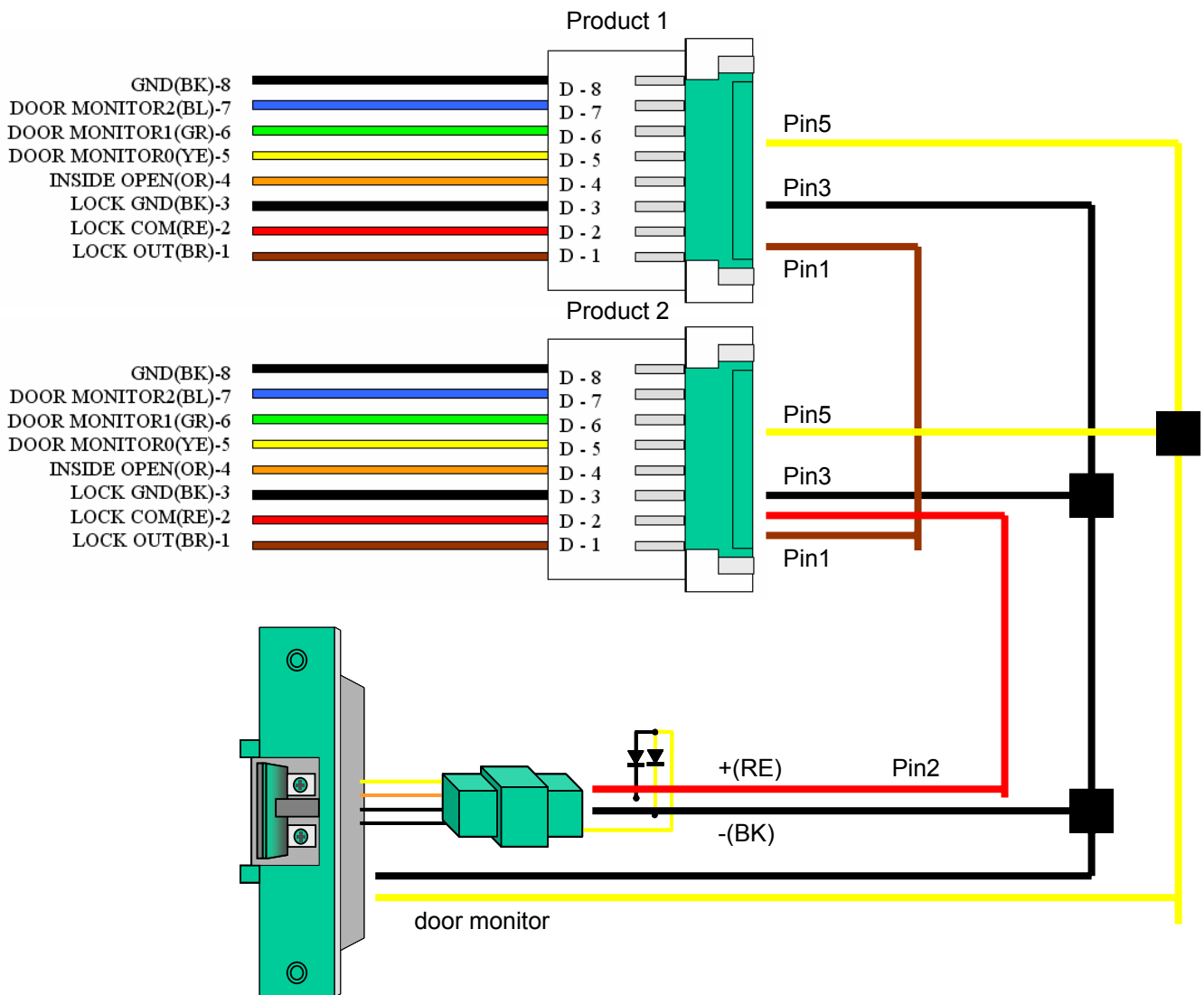
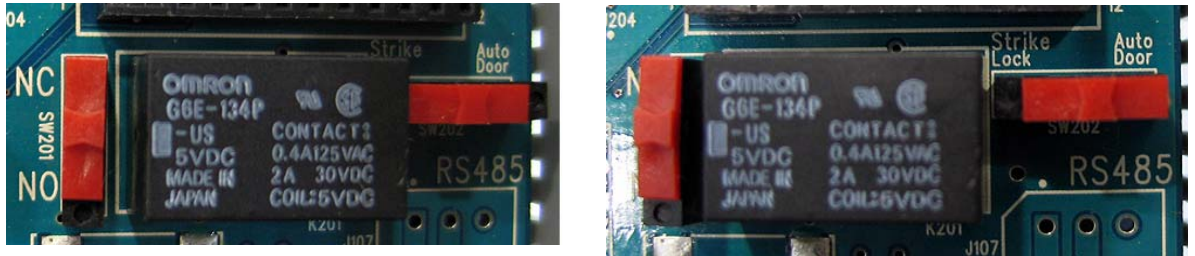
<Figure 3.5.6> 1 product <---> 1 Strike lock connection diagram (fail safe)

※ (Caution) The strike lock does not have an inner exit button.

② 2 products <---> 1 strike lock connection diagram  
 Lock type change S/W

Product 1: SW201 (NC direction)  
 SW202 (Strike lock direction)

Product 2: SW201 (NC direction)  
 SW202 (Auto door direction)



<Figure 3.5.7> 2 products <---> 1 strike lock connection diagram (fail safe)

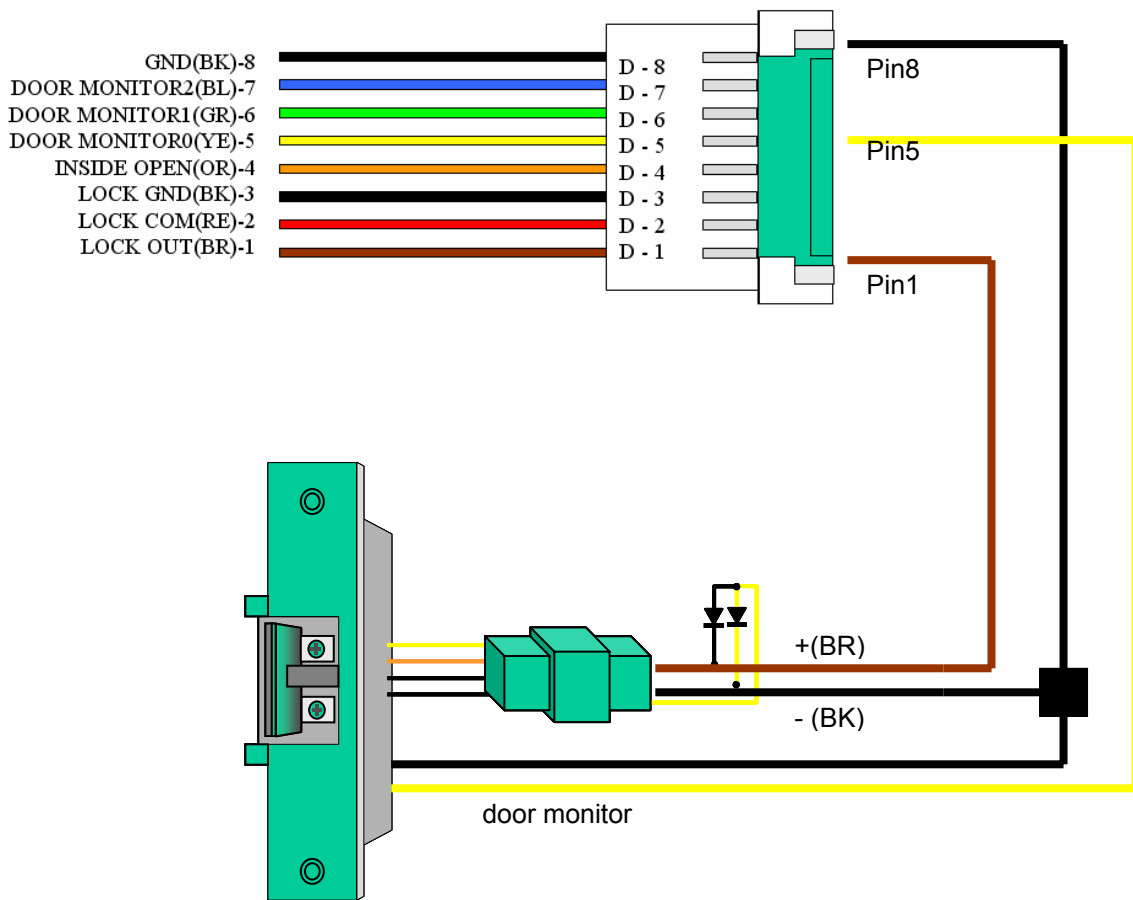


**4-3) Strike type door lock (fail secure)**

① 1 product <---> 1 strike lock connection diagram

SW201 (NO direction)

SW202 (Strike lock direction)



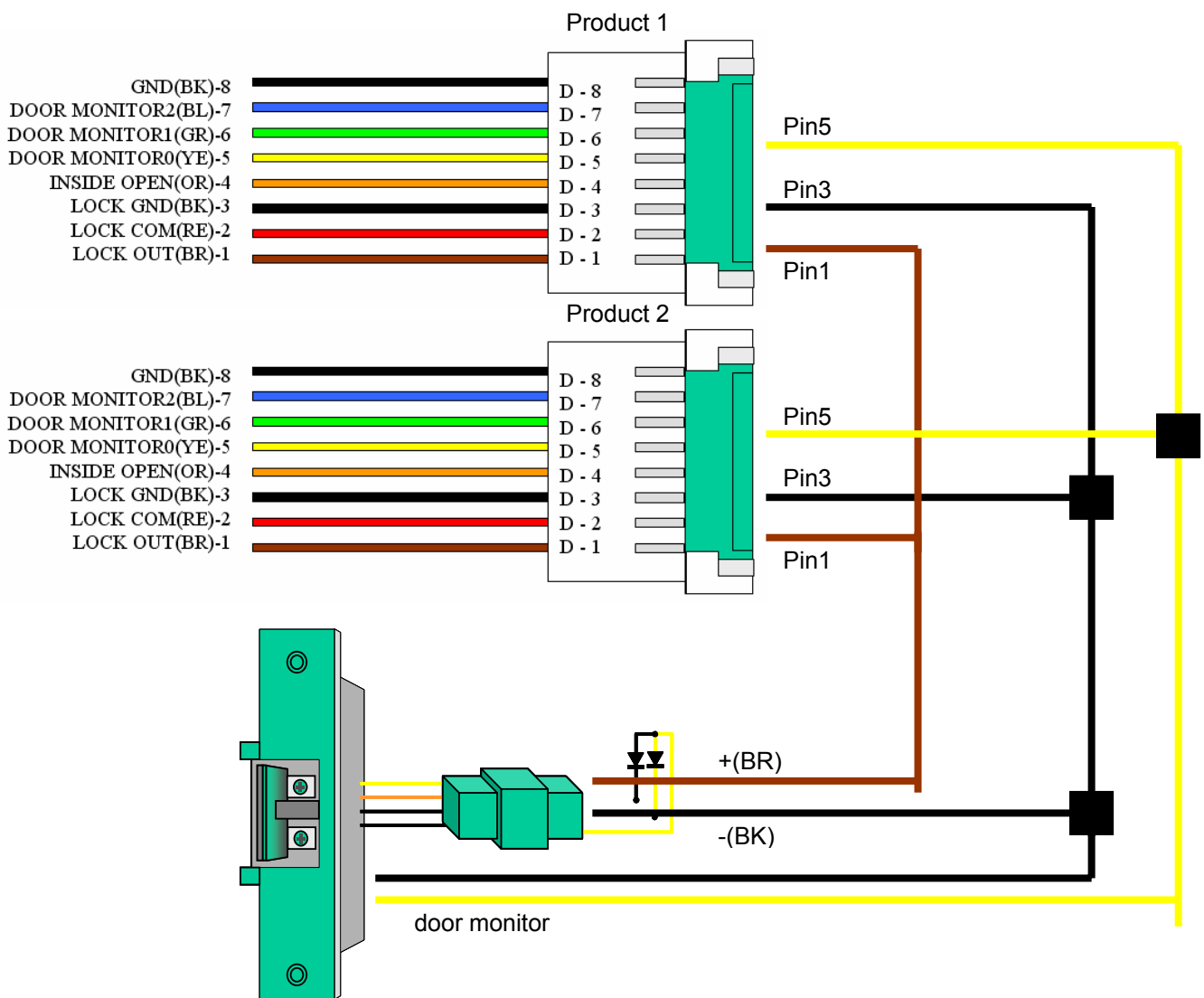
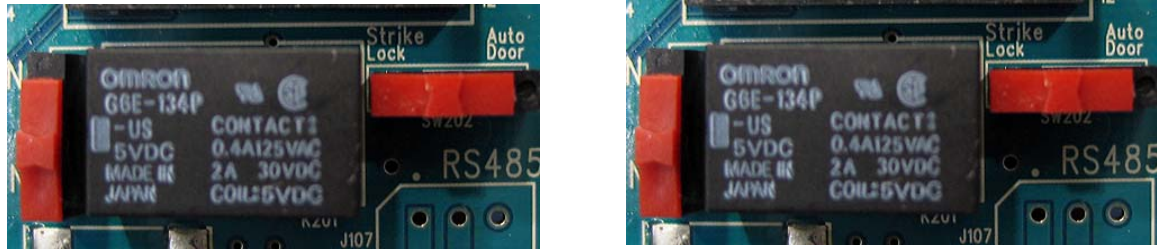
<Figure 3.5.8> 1 product <---> 1 strike lock connection diagram (fail secure)

※ (Caution) The Strike lock does not have an inner exit button.

② 2 products <---> 1 Strike lock connection diagram  
 Lock type change S/W

Product 1: SW201 (NO direction)  
 SW202 (Strike lock direction)

Product 2: SW201 (NO direction)  
 SW202 (Auto door direction)

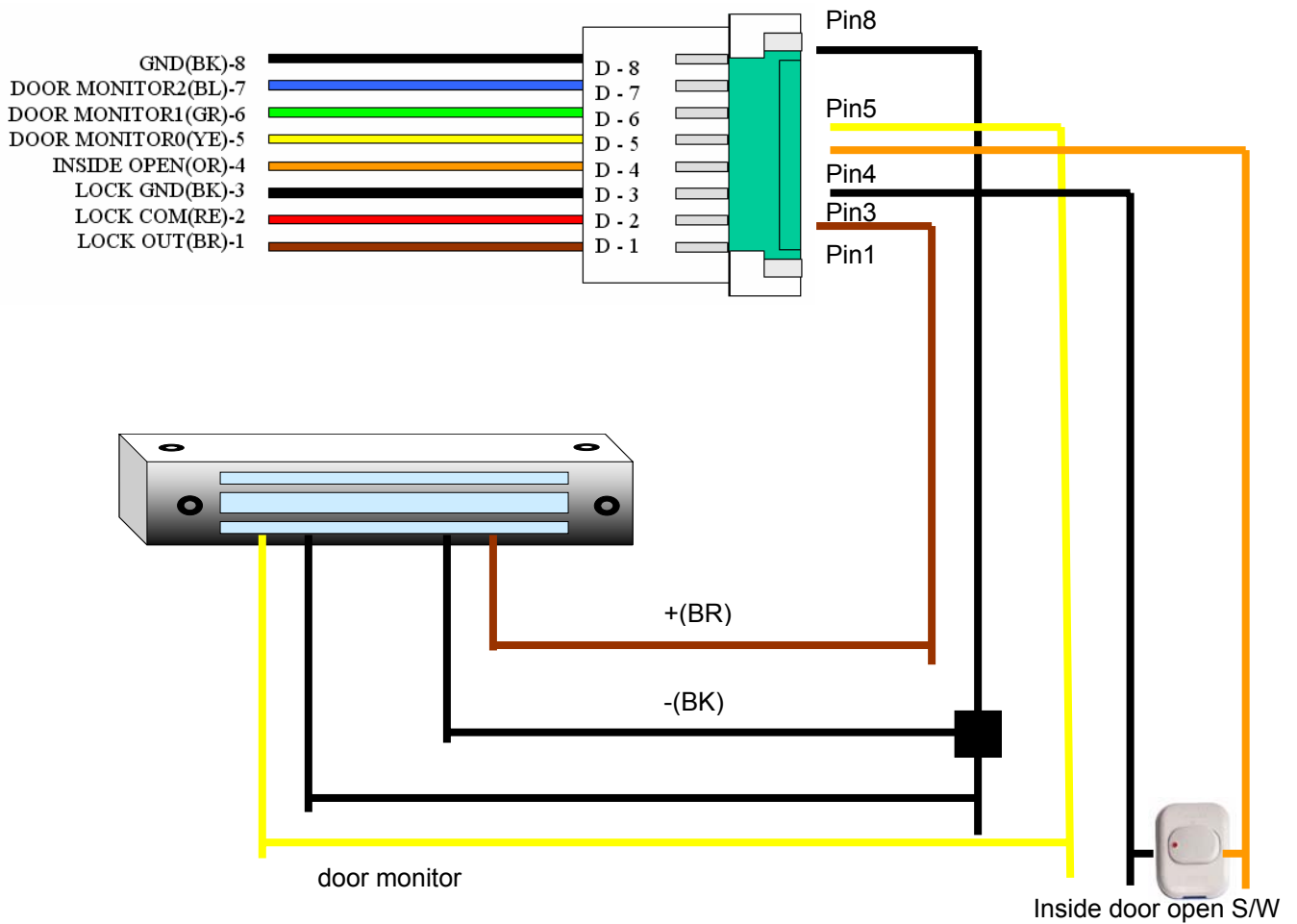


<Figure 3.5.9> 2 products <---> 1 strike lock connection diagram (fail secure)

### 4-4) EM lock type door lock

1 product <---> 1 EM lock connection diagram

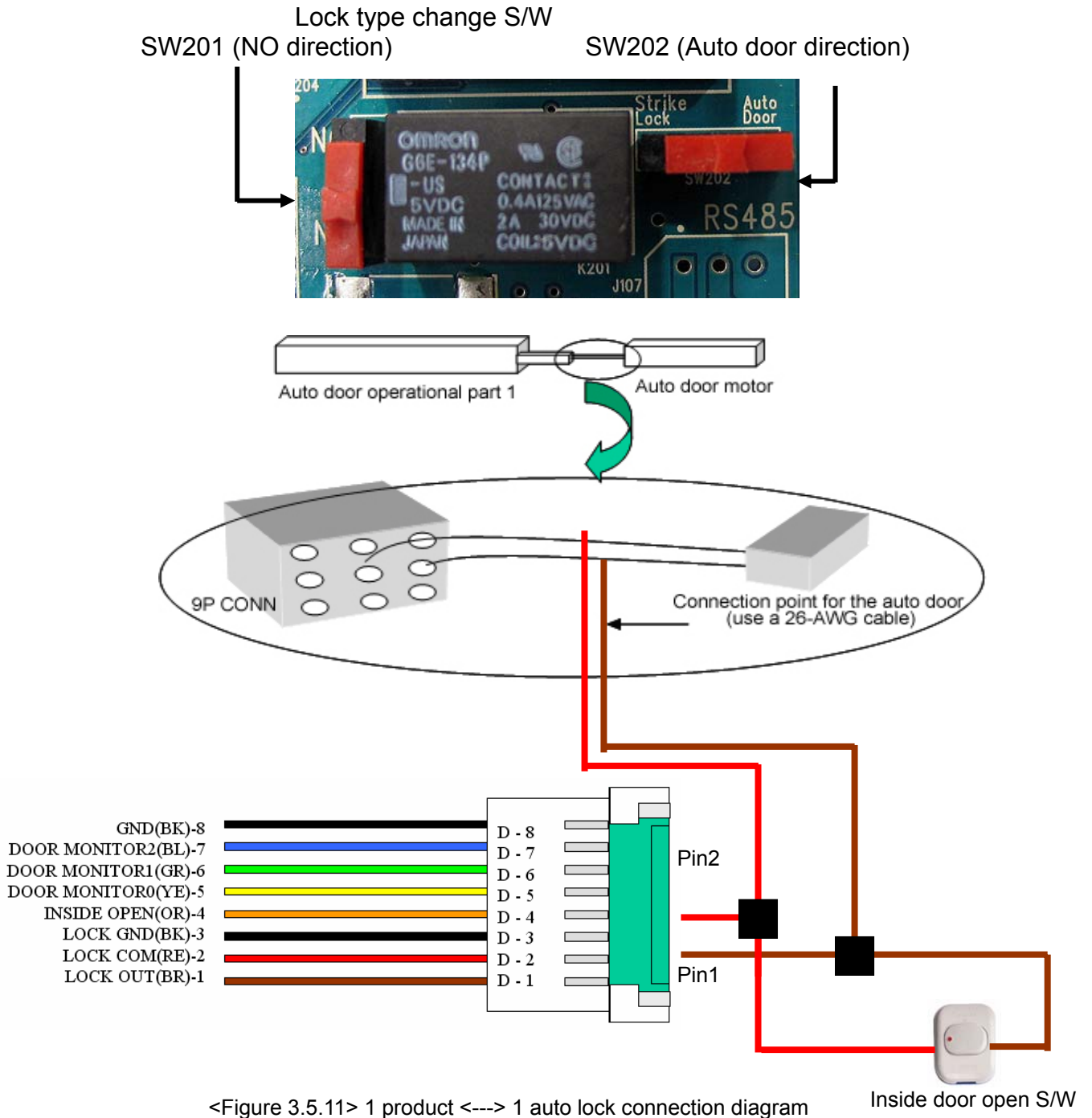
Lock type change S/W  
 SW201 (NC direction)                      SW202 (Strike lock direction)



<Figure 3.5.10> 1 product <---> 1 EM lock connection diagram

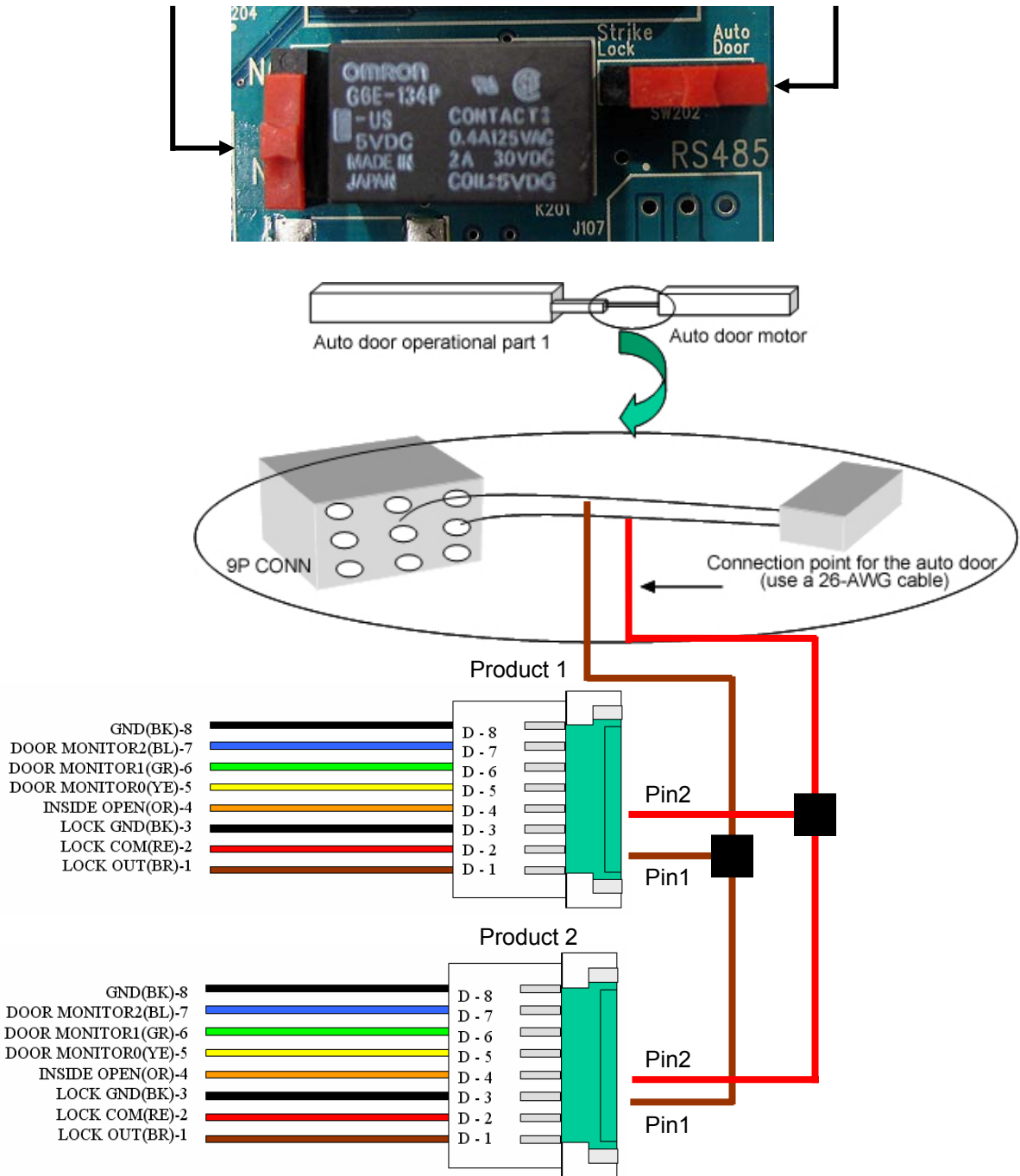
### 4-5) Auto door type lock

① 1 product <---> 1 auto lock connection diagram



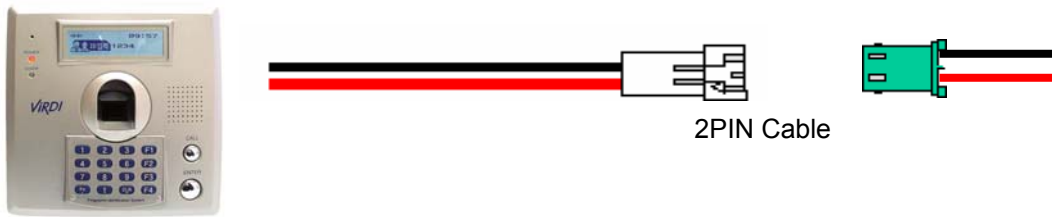
② 2 products <---> 1 auto lock connection diagram

Lock type change S/W  
 Products 1, 2 SW201 (NO direction)      SW202 (Auto door direction)



<Figure 3.5.12> 2 products <---> 1 auto lock connection diagram

5) Assemble the 2-PIN housing for the door phone line using the terminal.



<Figure 3.5.13> assembly diagram of door phone line 2-PIN housing

6) Secure the secure plate to the wall using 4 securing screws.



<Figure 3.5.14> how to attach the wall side of the secure plate

7) Connect the terminals and secure the product to the plate.



<Figure 3.5.15> how to attach the product to the plate

## 4. FAQ

### 4.1. If the product does not work even after connecting power

- ☞ First, check that the product and adapter are correctly connected. Check that 12V power is supplied to the power cable (3-PIN). If the connection is correct, the fuse might be blown, so try changing the fuse.

### 4.2. If you cannot connect to the server after setting the IP

- ☞ Check the status of the hub and network cables. Check that the products' IPs are not clashing. If all settings are correct, check that the server is connected to the network.

### 4.3. If no sound comes from the product upon access

- ☞ There is a function to control sound in the product's menu, so please check this function. If you are connected to a network you can also check from the server.

### 4.4. If you are properly registered but cannot gain access

- ☞ Personal fingerprint entrance rights can be limited, so please check at the server. There are some instances where fingerprint registration is not done properly, causing access problems, so please try registering your fingerprint again.
-