www.supremainc.com



biostation

Innovative Fingerprint Terminal

Installation Guide

EN 101.00.BST V1.31

Contents

Product Contents	3
Connectors for External Interfaces	5
Cable and Connector Pinout	6
Installation Example	7
Product Dimension	8
Installation of Wall-mount Bracket	9
Power Connection	10
USB Cable Connection	11
LAN Connection	12
Wireless LAN Connection	13
RS485 Network Connection	14
USB Memory Connection	15
Intercom Connection	16
Relay Connection – Fail Safe Lock	17
Relay Connection – Fail Secure Lock	18
Relay Connection - Automatic Door	19
TTL Input Port Connection – RTE Switches	20
TTL Output Port Connection	21
Wiegand Input Connection – External reader	22
Wiegand Output Connection – Control Panel	23
Ferrite Core Installation	24
System Specification	25
Electrical Specification	26
FCC Rules	27

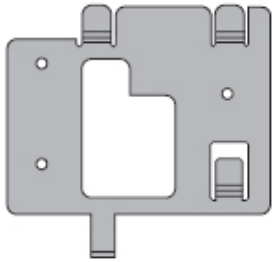
©Copyright 2007 Suprema Inc.

Product Contents

Basic Contents



BioStation fingerprint terminal



Wall mounting metal bracket



Wall mounting
screws and holders - 3 ea



Star-shape screw for fixing
main body



USB cable



Star-shape small wrench



5pin, 3pin, 6pin, 4pin, 7pin cable – 1 ea



Software CD

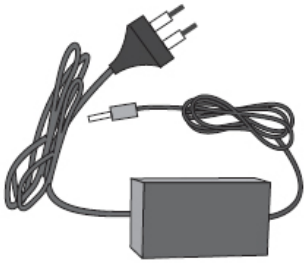


Diodes – 1 ea

©Copyright 2007 Suprema Inc.

Product Contents

- **Optional accessories**



12V power adaptor



Plastic stand type A



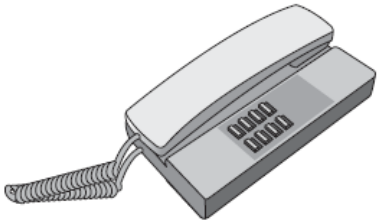
USB fingerprint scanner for enrollment on PC



Wireless LAN Access Point



Secure I/O



Interphone

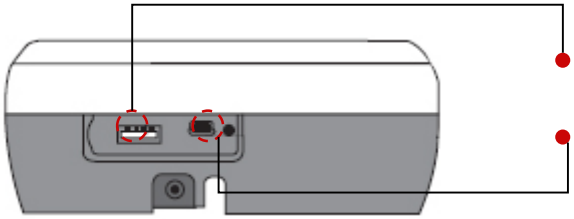


USB Mifare reader/writer

©Copyright 2007 Suprema Inc.

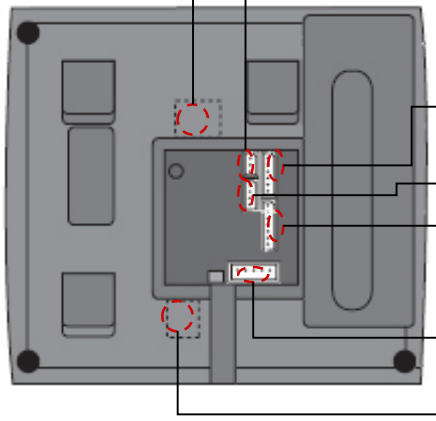
Connectors for External Interfaces

Bottom



- Slot for USB memory device : USB type A
- Slot for PC USB connection : Mini USB

Rear



- Ethernet cable connector : RJ45
- 3pin cable connector - Door
- 6pin cable connector – Input/Output or Wiegand
- 4pin cable connector - RS485
- 7pin cable connector - RS232 or BEACon
- 5pin cable connector – Power and doorphone
- 12V power adaptor

©Copyright 2007 Suprema Inc.

Cable and Connector Pinout

Power & Doorphone



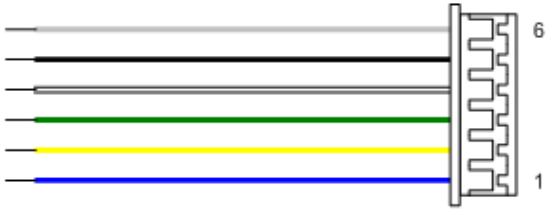
PIN	PIN DESCRIPTION	WIRE
1	PWR +VDC	RED
2	PWR GND	BLACK
3	INPH AUD	ORANGE
4	INPH DTA	BLUE
5	SH GND	GRAY

Relay



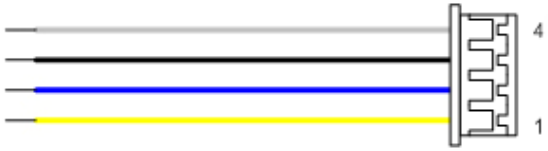
PIN	PIN DESCRIPTION	WIRE
1	RLY NO	WHITE
2	RLY COM	BLUE
3	RLY NC	ORANGE

TTL I/O or Wiegand



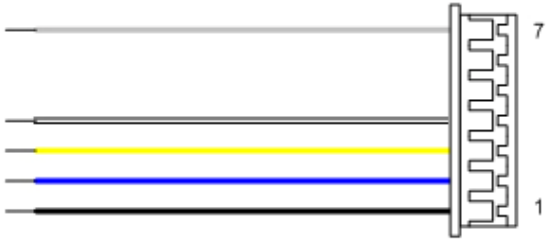
PIN	PIN DESCRIPTION	WIRE
1	TTL / WG IN0	BLUE
2	TTL / WG IN1	YELLOW
3	TTL / WG OUT0	GREEN
4	TTL / WG OUT1	WHITE
5	TTL / WG GND	BLACK
6	SH GND	GRAY

RS485



PIN	PIN DESCRIPTION	WIRE
1	485 TRXN	YELLOW
2	485 TRXP	BLUE
3	485 GND	BLACK
4	SH GND	GRAY

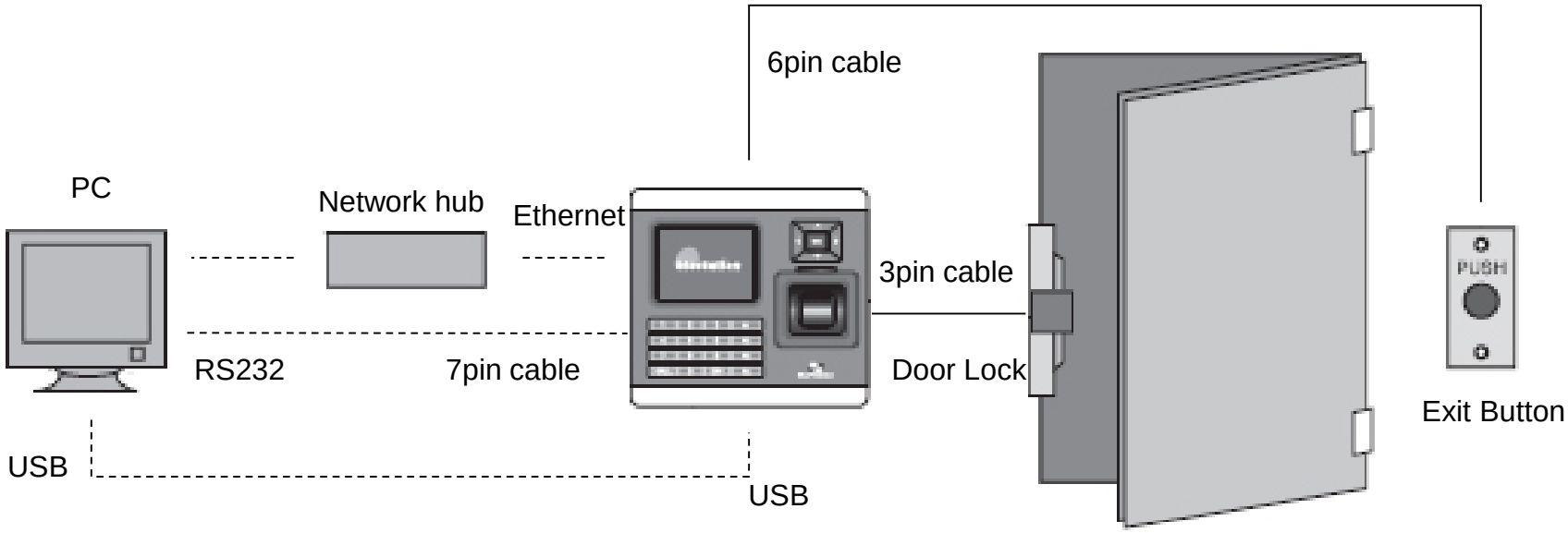
RS232



PIN	PIN DESCRIPTION	WIRE
1	232 GND	BLACK
2	232 TX	BLUE
3	232 RX	YELLOW
4	TTL OUT1	WHITE
7	SH GND	GRAY

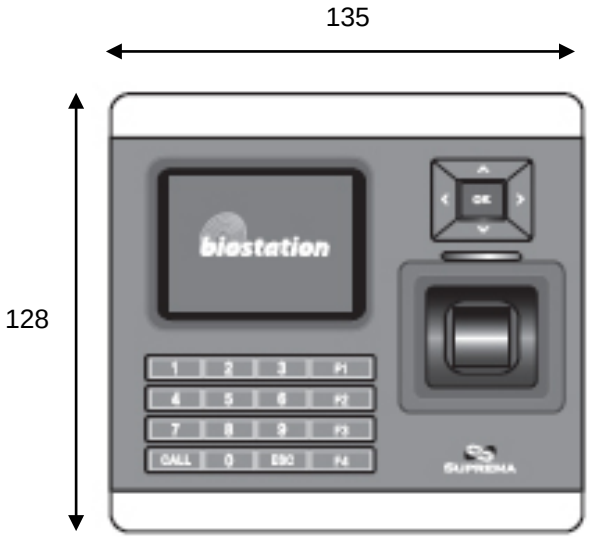
©Copyright 2007 Suprema Inc.

Installation Example

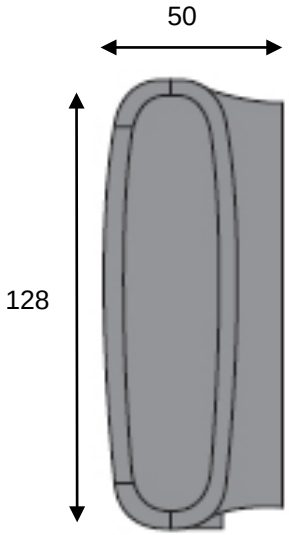


©Copyright 2007 Suprema Inc.

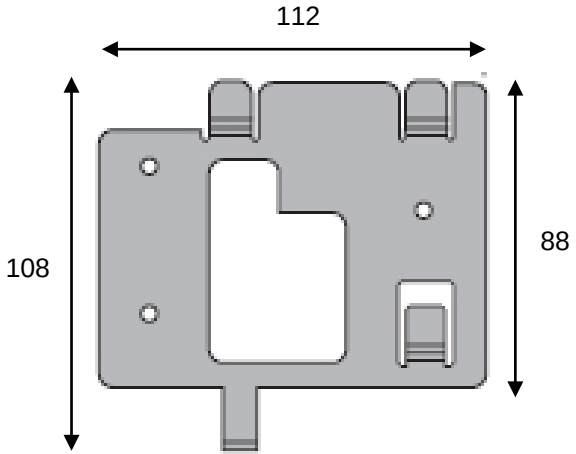
Product Dimension



Front



Side



Bracket

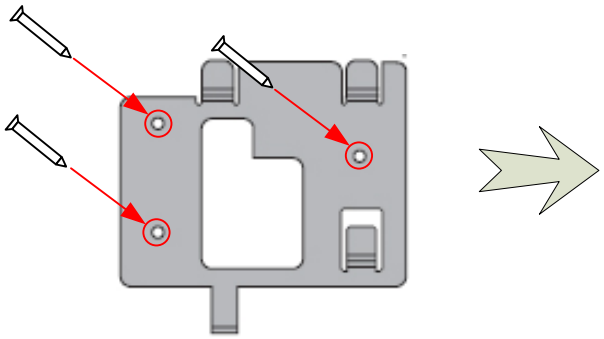
(unit : mm)

©Copyright 2007 Suprema Inc.

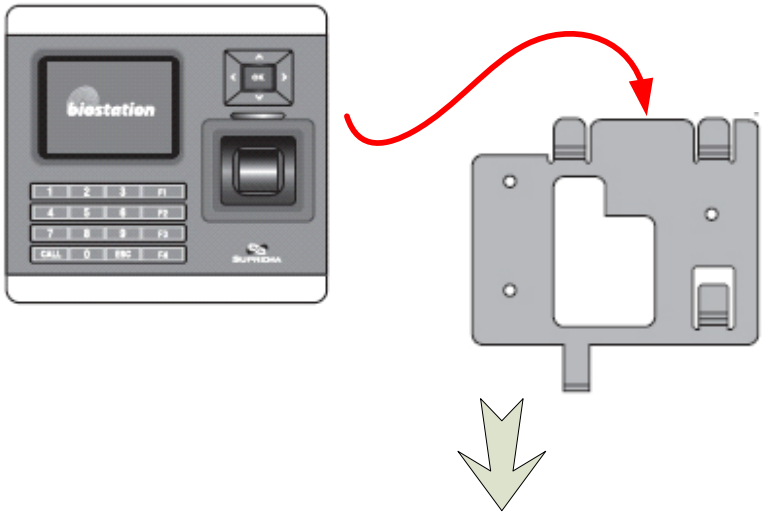
Installation of Wall-mount Bracket

- **Fix wall mount bracket on a wall using wall mounting screws**

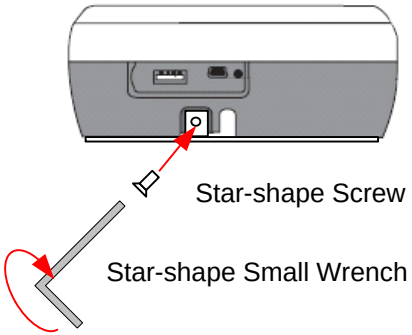
Wall Mounting Screws



- **Hook BioStation on the wall mount bracket.**



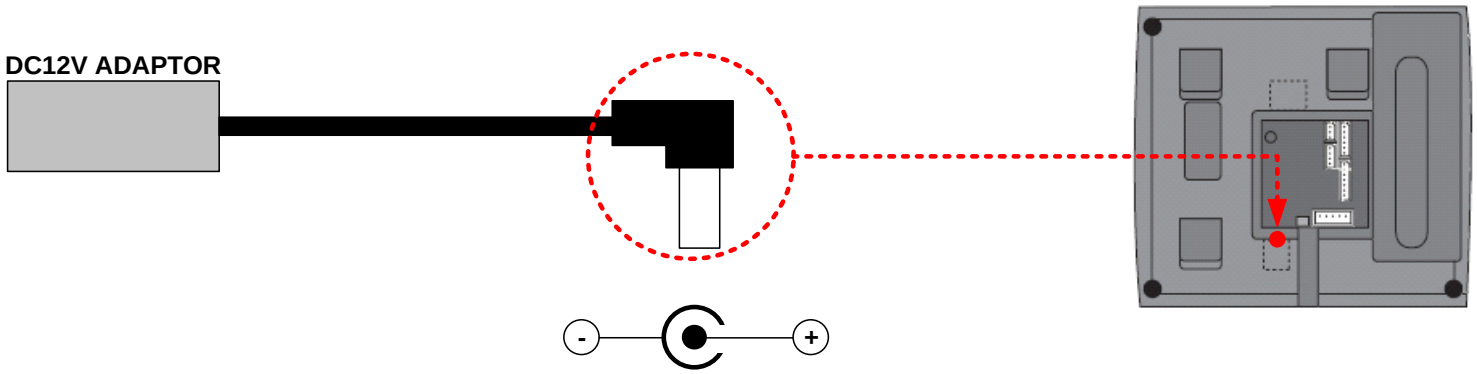
- **Fix BioStation and wall mounting bracket using a star shape screw.**



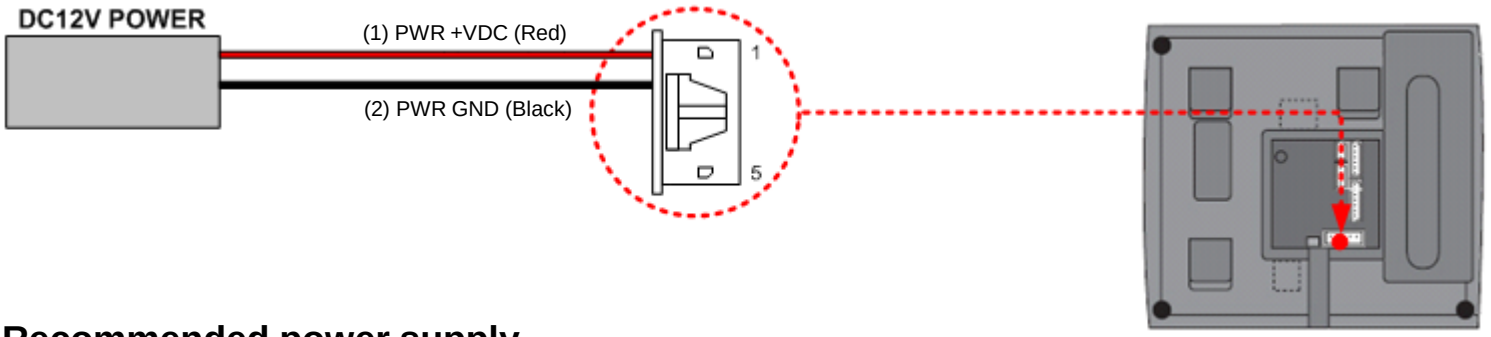
©Copyright 2007 Suprema Inc.

Power Connection

- **Method 1**



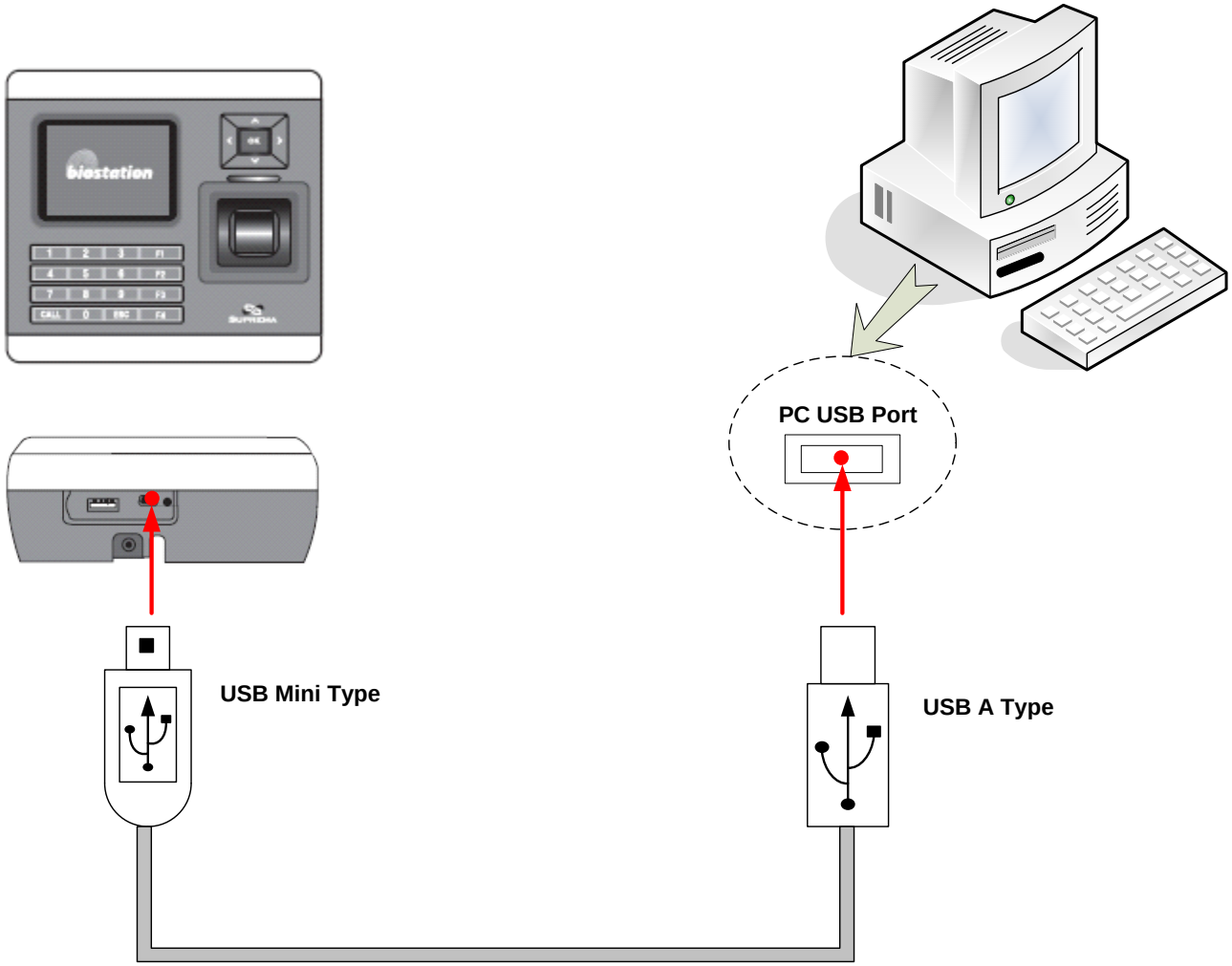
- **Method 2**



- **Recommended power supply**
  - **12V ± 10%, at least 2500mA for BioStation alone installation.**
  - **Comply with standard IEC/EN 60950-1**
  - **Use a separate power supply for Secure I/O, electric lock and BioStation respectively. If connecting and using the power supply to these devices together, the devices may malfunction.**

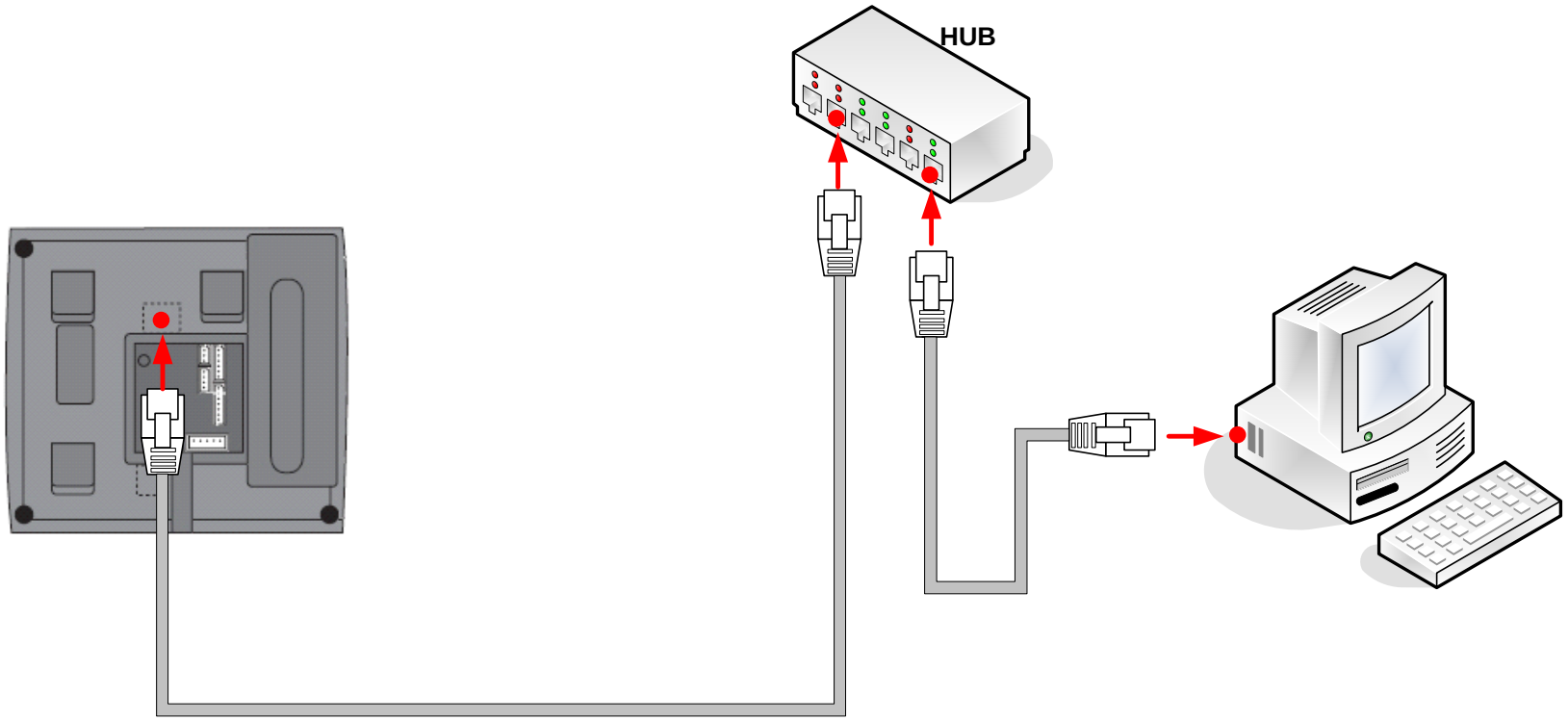
©Copyright 2007 Suprema Inc.

USB Cable Connection



©Copyright 2007 Suprema Inc.

LAN Connection



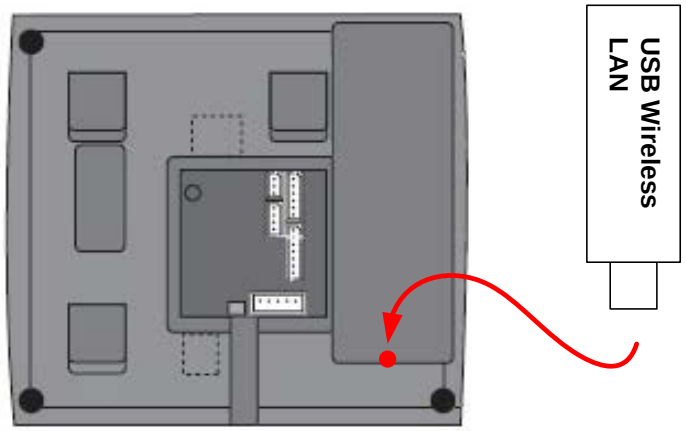
©Copyright 2007 Suprema Inc.

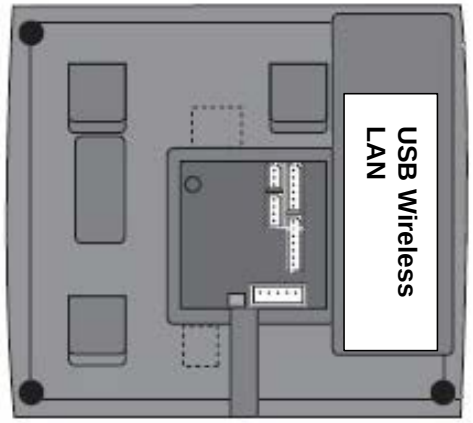
Wireless LAN Connection

- **Performance of wireless LAN is affected a lot by surrounding environments and the type of AP(Access Point).**
- **The list of APs with compatibility tested with BioStation is as follows.**
  - Buffalo WHR-HP-G54
  - Cisco-Linksys WRTH54GS
  - 3COM OfficeConnect 3CRWE554G72T
- **Using an AP other than these lists, wireless LAN communication may not work propeprly.**

★ Warning ★

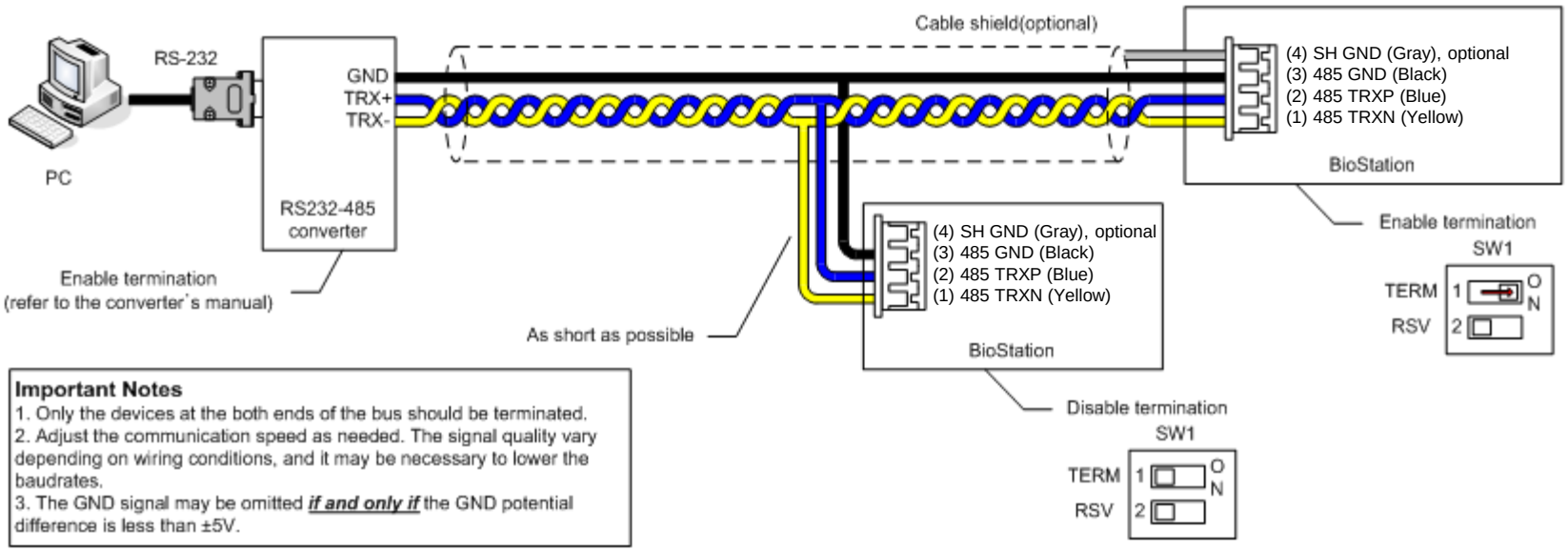
If you installed USB Wirless LAN and closed rubber cap, there might be communication error or a fire due to the overheating.





©Copyright 2007 Suprema Inc.

RS485 Network Connection



Important Notes

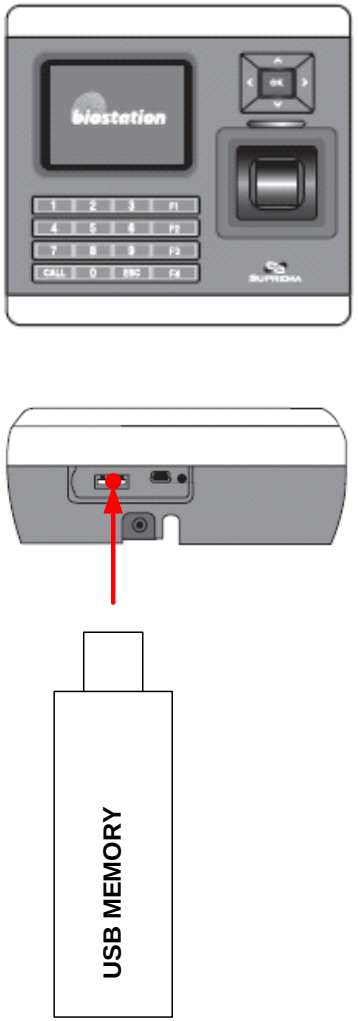
1. Only the devices at the both ends of the bus should be terminated.
2. Adjust the communication speed as needed. The signal quality vary depending on wiring conditions, and it may be necessary to lower the baudrates.
3. The GND signal may be omitted ***if and only if*** the GND potential difference is less than ±5V.

©Copyright 2007 Suprema Inc.

USB Memory Connection

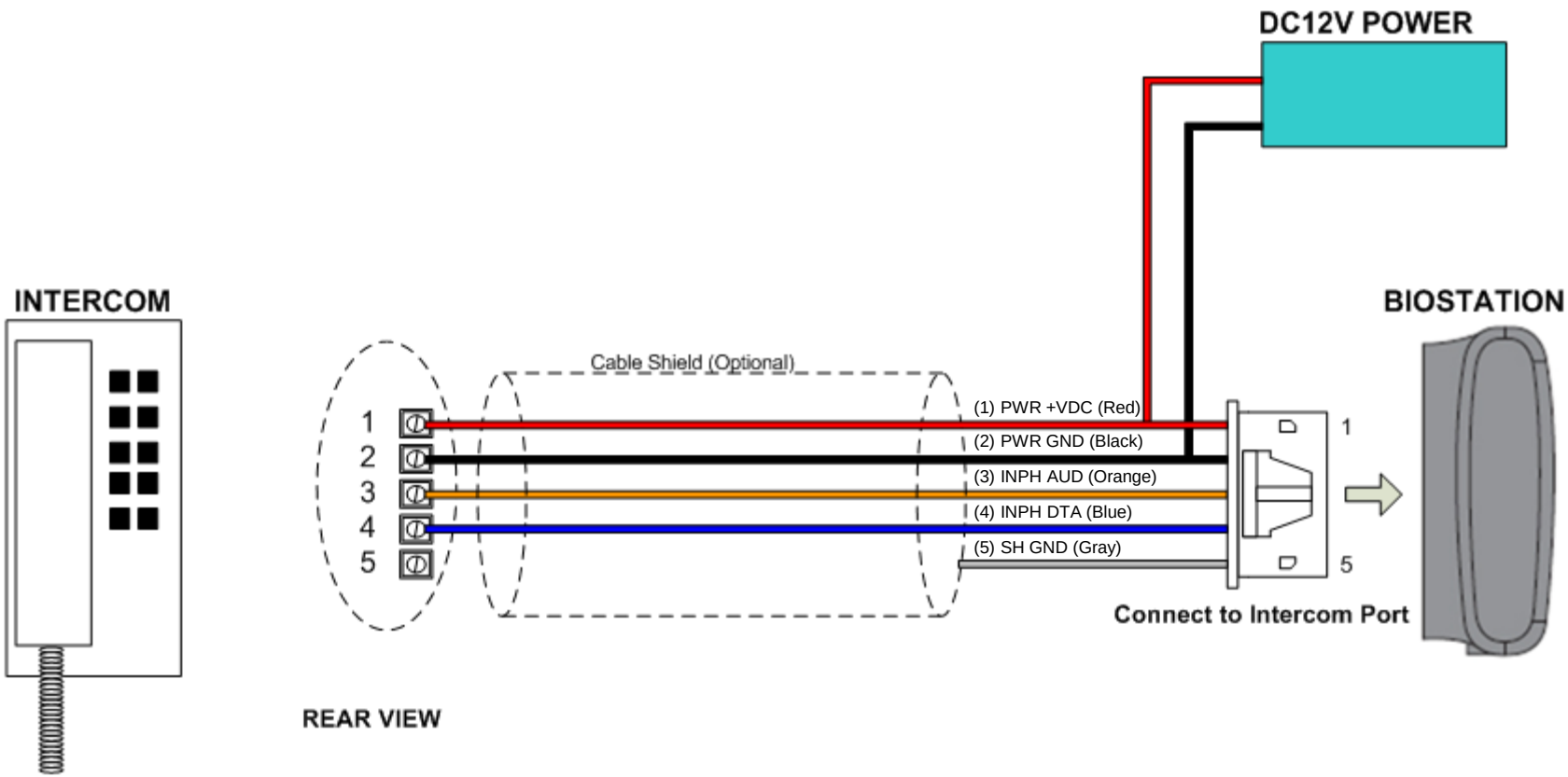
- **Because of hardware compatibility issue, some USB memory devices may not work properly.**

- **The following is a list of USB memory devices already tested with BioStation.**
  - SanDisk cruzer micro 512MB
  - Transcend JF110 512MB
  - Transcend JF150 512MB
  - Samsung PLEOMAX SPUB-S50 1GB
  - Sony Microvault USM512J
  - Imation iFLASH Slim 512MB
  - Imation Swivel Pro 512MB
  - PQI Intelligent Stick 1GB



©Copyright 2007 Suprema Inc.

Intercom Connection



©Copyright 2007 Suprema Inc.

Relay Connection – Fail Safe Lock

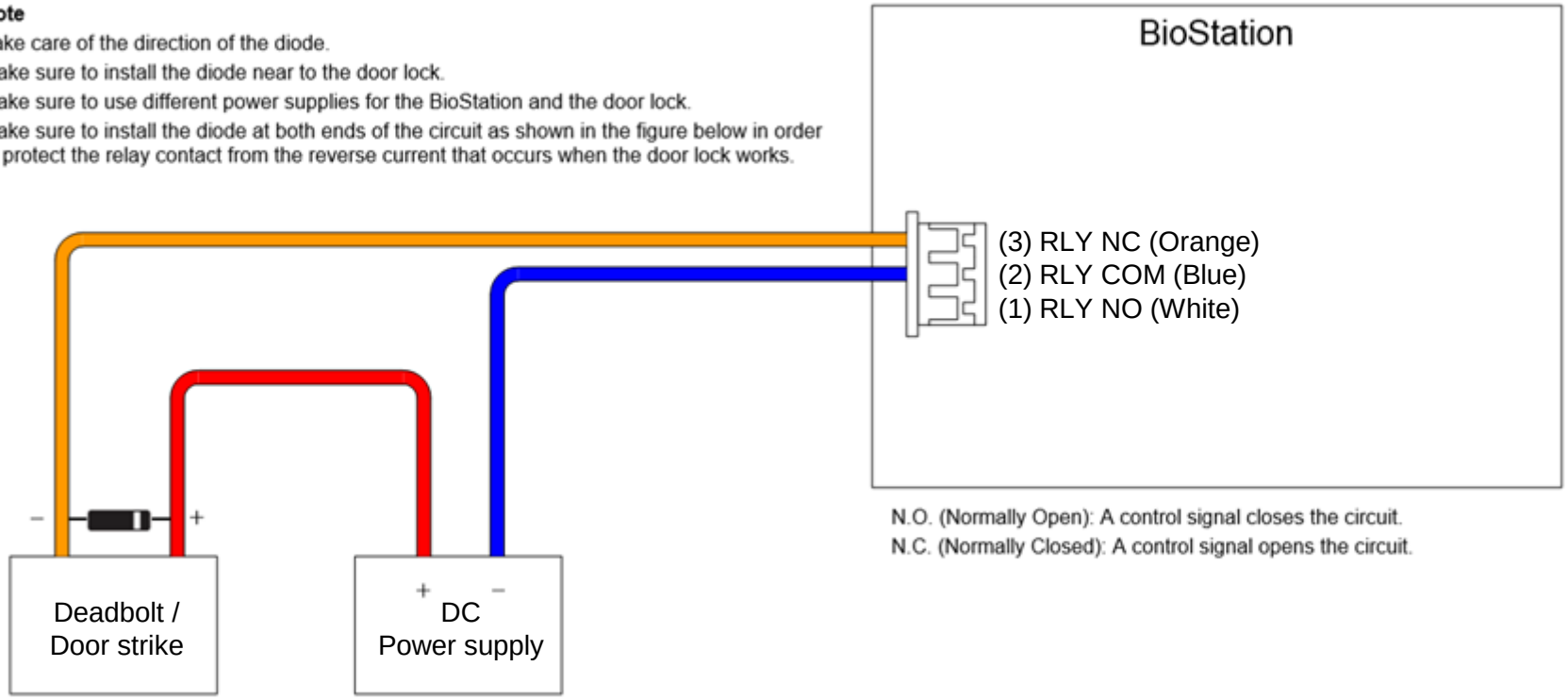
Note

Take care of the direction of the diode.

Make sure to install the diode near to the door lock.

Make sure to use different power supplies for the BioStation and the door lock.

Make sure to install the diode at both ends of the circuit as shown in the figure below in order to protect the relay contact from the reverse current that occurs when the door lock works.



N.O. (Normally Open): A control signal closes the circuit.

N.C. (Normally Closed): A control signal opens the circuit.

©Copyright 2007 Suprema Inc.

Relay Connection – Fail Secure Lock

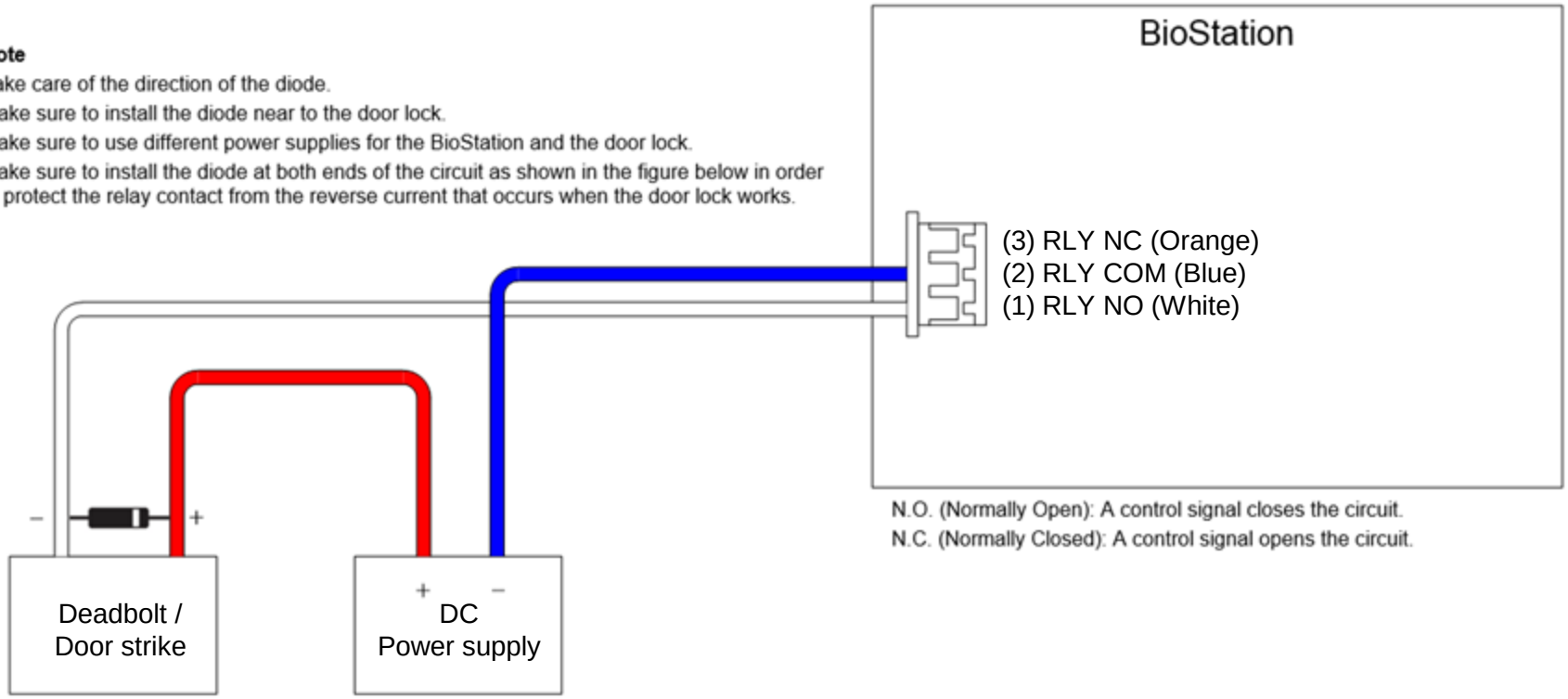
Note

Take care of the direction of the diode.

Make sure to install the diode near to the door lock.

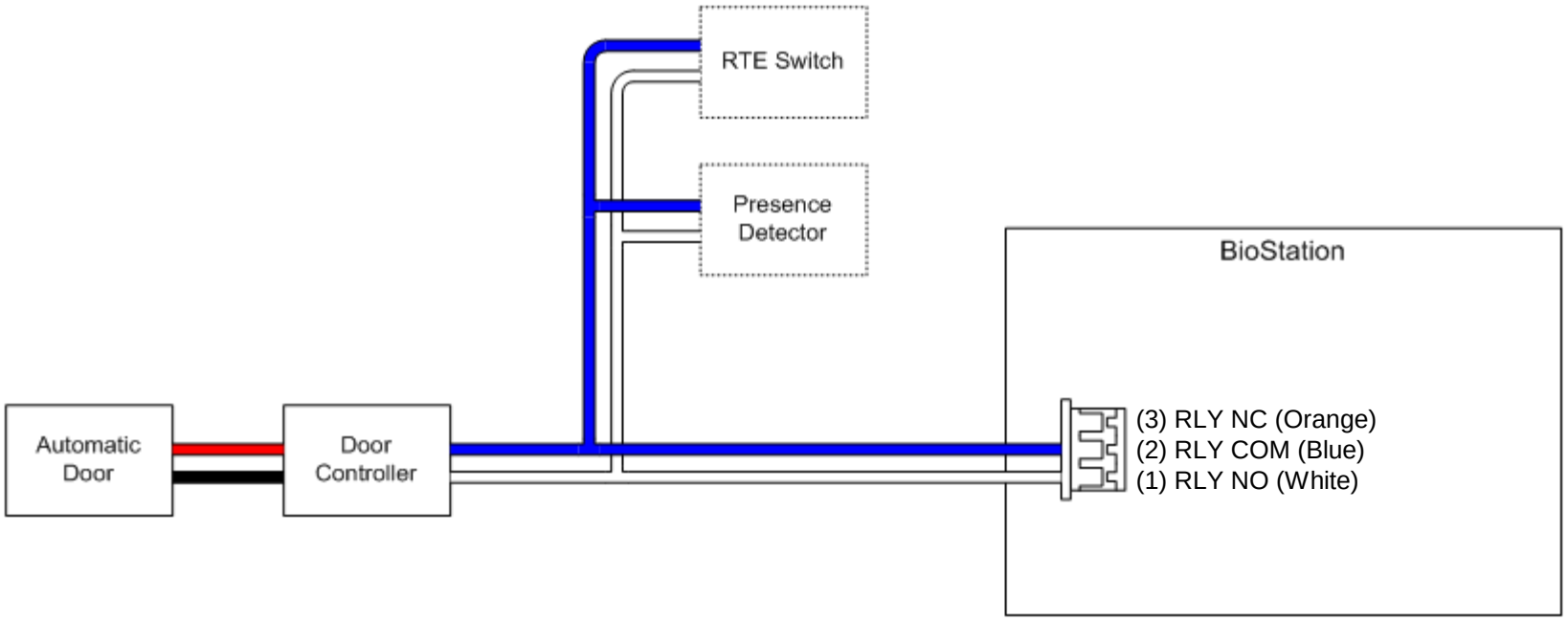
Make sure to use different power supplies for the BioStation and the door lock.

Make sure to install the diode at both ends of the circuit as shown in the figure below in order to protect the relay contact from the reverse current that occurs when the door lock works.



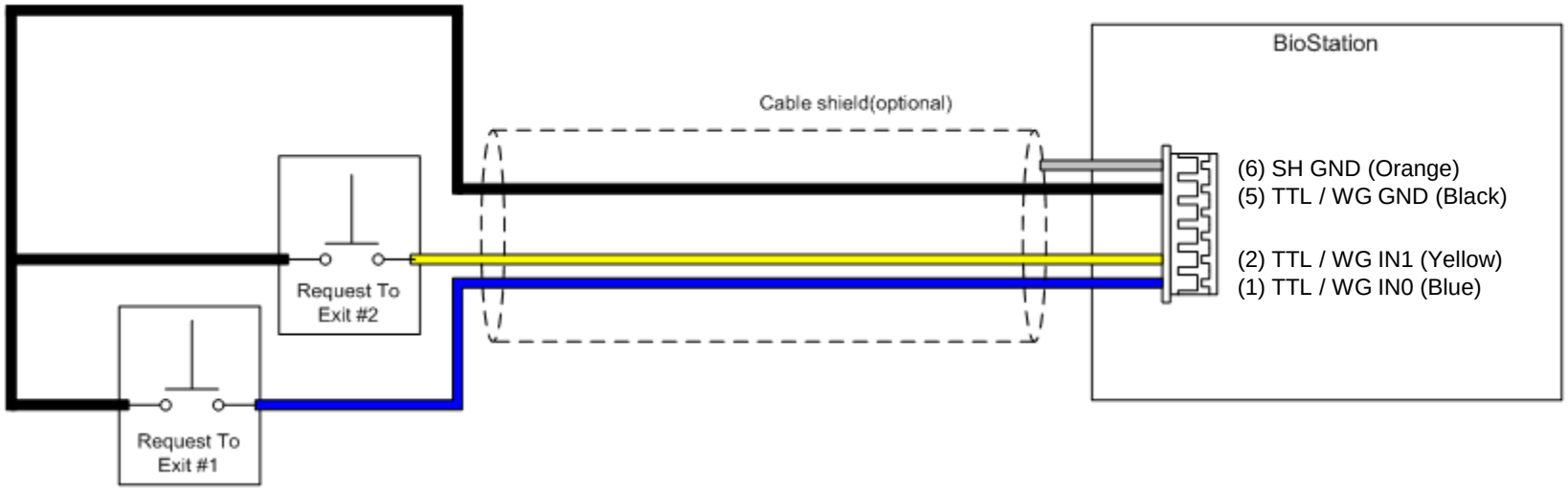
©Copyright 2007 Suprema Inc.

Relay Connection - Automatic Door



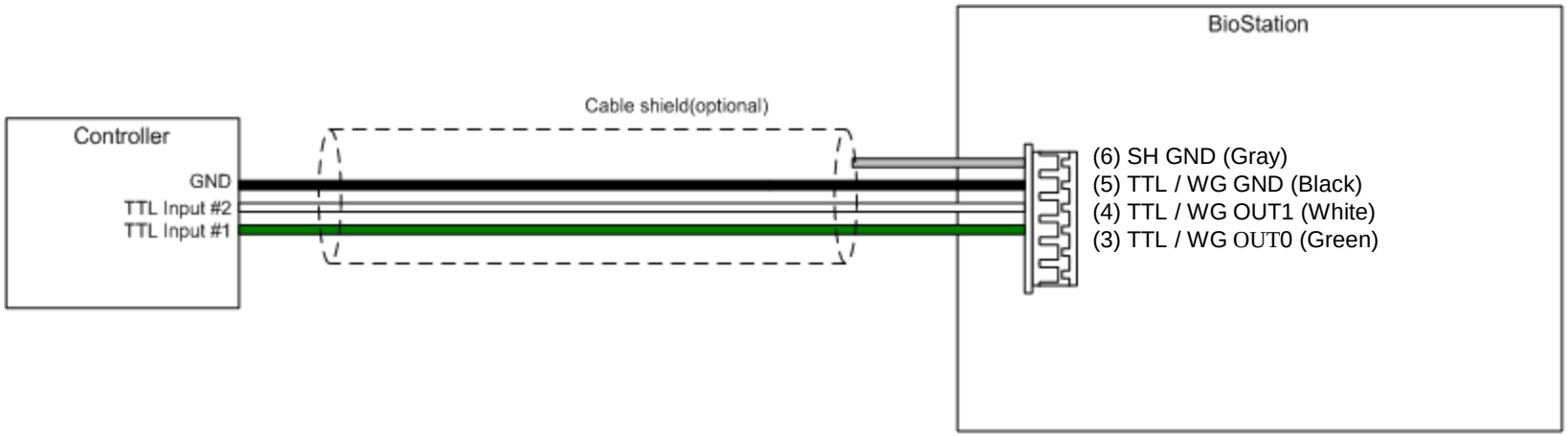
©Copyright 2007 Suprema Inc.

TTL Input Port Connection – RTE Switches



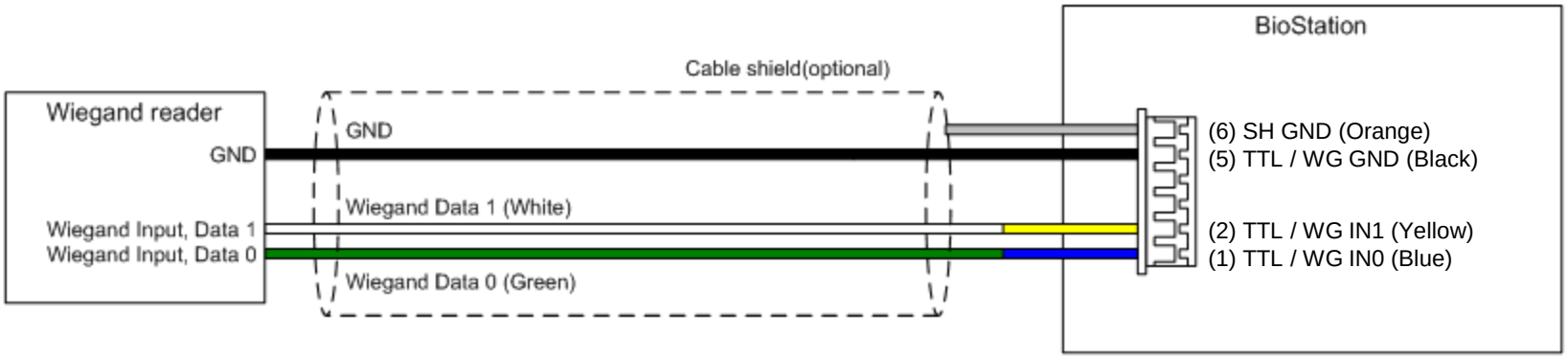
©Copyright 2007 Suprema Inc.

TTL Output Port Connection



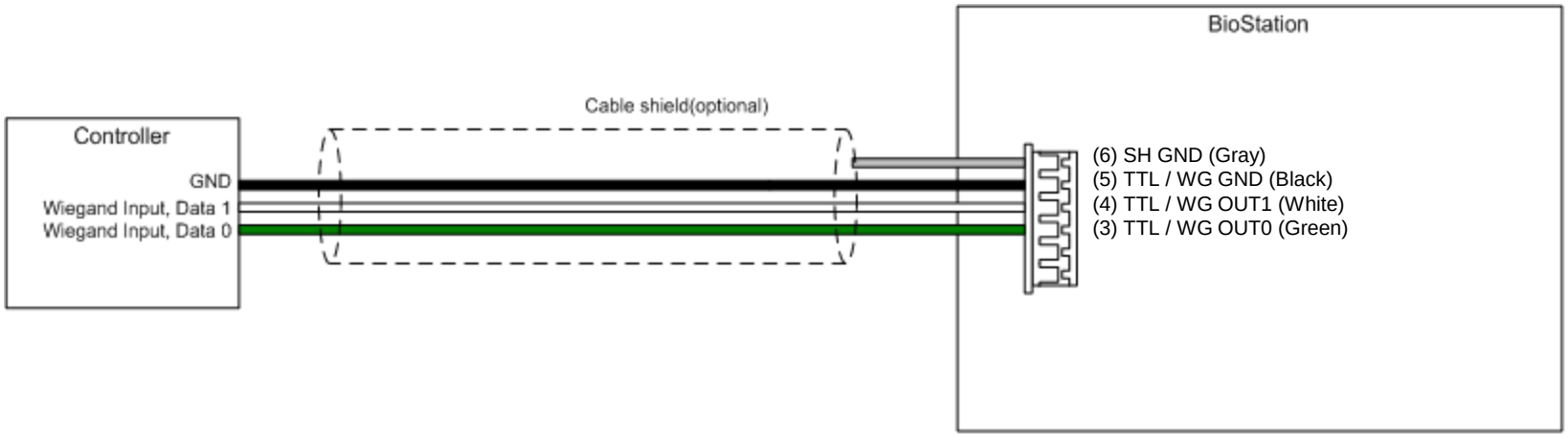
©Copyright 2007 Suprema Inc.

Wiegand Input Connection – External reader



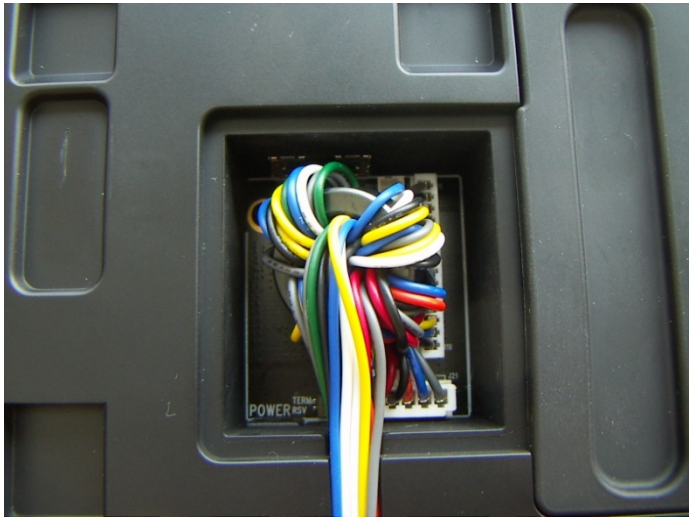
©Copyright 2007 Suprema Inc.

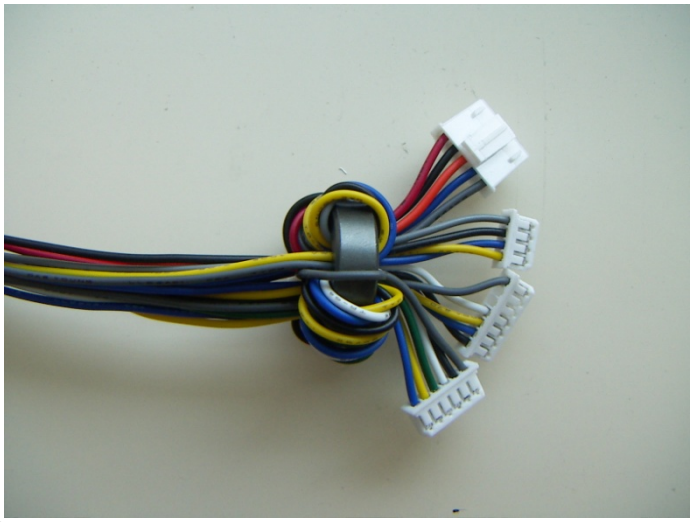
Wiegand Output Connection – Control Panel



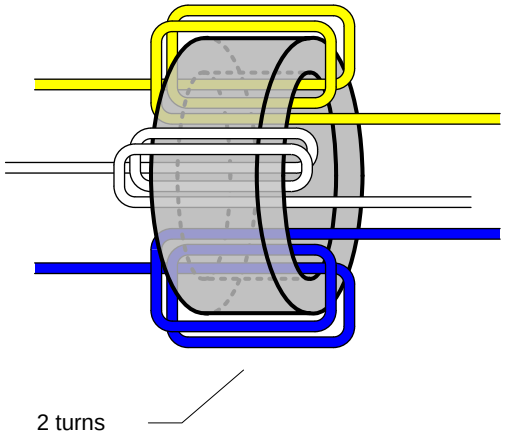
©Copyright 2007 Suprema Inc.

Ferrite Core Installation





Core winding



2 turns

The following cables must be wound around the core (2 turns)
1. RS232 cable
2. RS485 cable
3. Intercom/Power cable
4. TTL/Wiegand IO cable

©Copyright 2007 Suprema Inc.

System Specifications

- CPU : Dual CPU (32 bit RISC + 533MHz DSP)
- Memory : 1GB flash + 34MB RAM
- Display : 2.5 inch QVGA 16 million color LCD
- Identification speed : 3,000 fingerprints in 1 second
- Fingerprint capacity : 400,000 fingerprint templates
- Log capacity : 1,000,000 events
- Host interface : Wireless LAN (optional), TCP/IP, RS485
- PC interface : USB, RS232
- USB memory slot : USB host
- 1 relay for deadbolt, EM lock, door strike, or automatic door
- Wiegand input/output, 4 TTL input/output
- Built-in microphone and speaker supporting door phone
- Convenient menu navigation key
- 4 function keys for user defined functions
- Operation mode : Fingerprint, PIN, PIN+Fingerprint,
- Card only*, Card+Fingerprint*, Card+PIN* (*RF model only)
- RF Card : 125kHz EM prox, HID prox, 13.56MHz Mifare/DesFire
- RTC with backup battery (CR2032)**
- Product size : 135 x 128 x 50 mm (width x length x depth)

** **CAUTION** : RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERY ACCORDING TO THE INSTRUCTIONS

©Copyright 2007 Suprema Inc.

Electrical Specification

	Min.	Typ.	Max.	Notes
Power				
Voltage (V)	10.8	12	13.2	
Current Consumption (mA)	-	-	440	
Current Consumption with USB Wireless LAN (mA)	-	-	940	
TTL/Wiegand Input				
V_{IH} (V)	3.8	-	5.0	
V_{IL} (V)	0	-	1.2	
Pull-up resistance (Ω)	-	10k	-	
TTL/Wiegand Output				
V_{OH} (V)	4	-	-	@ I_{OH} = -5mA
V_{OL} (V)	-	-	1	@ I_{OL} = 5mA
Output resistance (Ω)	-	100	-	
Relay				
Voltage	-	-	24 VDC	
Current	-	0.5 A	1.0 A	

©Copyright 2007 Suprema Inc.

FCC Rules

Caution

- Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Warning

- 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.

Information to User

- This equipment has been tested and found to comply with the limit of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, user and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guaranteee that interference will not occur in a particular installation; if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

  1. Reorient / Relocate the receiving antenna.
  2. Increase the separation between the equipment and receiver.
  3. Connect the equipment into an outlet on a circuit difference from that to which the receiver is connected.
  4. Consult the dealer or an experienced radio/TV technician for help

©Copyright 2007 Suprema Inc.



Suprema Inc.
16F Parkview Office Tower, Jeongja-dong, Bundang-gu,
Seongnam, Gyeonggi, 463-863 Korea
E-mail : support@supremainc.com
Website : www.supremainc.com

Functions and specifications of the product are subject to changes without notice due to quality enhancement or function update. For any inquiry on the product, please contact **Suprema Inc**.