

# BioStation 2

## 설치 가이드

버전 1.35  
한국어

KO 101.00.BS2 V1.35A

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## 안전을 위한 주의사항

제품을 올바르게 사용하여 위험이나 재산상의 피해를 미리 막기 위한 내용입니다. 반드시 지켜주시기 바랍니다.



### 경고

지시사항을 위반하면 심각한 상해나 사망에 이를 수 있습니다.

### 설치 관련

**직사 광선, 습기, 먼지나 그을음이 많은 곳에는 설치하지 마십시오.**

- 화재 또는 감전의 원인이 됩니다.

**전열기 등으로 인해 열이 발생하는 곳에는 설치하지 마십시오.**

- 과열로 인한 화재 또는 감전의 원인이 됩니다.

**물기가 없는 장소에 설치하십시오.**

- 습기로 인한 제품 손상 또는 감전의 원인이 됩니다.

**전자파 장애가 없는 곳에 설치하십시오.**

- 제품 손상 또는 감전의 원인이 됩니다.

**사용자가 임의로 제품을 설치하거나 수리하지 마십시오.**

- 화재, 감전, 부상의 원인이 됩니다.
- 사용자의 임의 설치나 수리로 인해 제품이 손상된 경우에는 무상 서비스를 받을 수 없습니다.

### 사용 관련

**제품 내부에 물, 음료수, 약품 등의 액체가 들어가지 않도록 주의하십시오.**

- 감전, 화재, 제품 손상의 원인이 됩니다.



### 주의

지시 사항을 위반하여 경미한 상해나 제품 손상이 발생할 수 있습니다.

### 설치 관련

**전원 케이블 등을 통행 장소에 방치하지 마십시오.**

- 제품 파손 또는 신체 상해의 원인이 됩니다.

**자석, TV, (특히 CRT) 모니터, 스피커 등 자성이 강한 물체 주변에 설치하지 마십시오.**

- 고장의 원인이 됩니다.

**직류 12V, 500mA 이상의 전원 어댑터만 사용하십시오.**

- 적합한 전원을 사용하지 않을 때에는 장치가 정상적으로 작동하지 않습니다.

**제품과 케이블을 연결한 뒤 반드시 제품과 케이블에 실리콘을 10 mm 정도 도포한 뒤 케이블 커버를 조립하십시오. 케이블 커버는 IP65 등급을 만족하기 위해 반드시 조립되어야 합니다.**

- 방수, 방진 성능이 저하되어 고장의 원인이 됩니다.

**완전히 노출된 야외에 설치할 경우 외함을 같이 설치하는 것을 권장합니다.**

**Secure I/O 2, 전기정(전기식 잠금장치), BioStation 2는 반드시 개별 전원을 사용하십시오.**

- 전원을 함께 연결하여 사용하면 장치가 오작동할 수 있습니다.

## 사용 관련

제품을 떨어뜨리거나 충격을 주지 마십시오.

- 고장의 원인이 됩니다.

암호를 타인이 알지 못하도록 주의하여 관리하고, 주기적으로 변경하여 주십시오.

- 불법 침입의 원인이 됩니다.

제품의 버튼을 무리하게 누르거나 날카로운 도구를 사용해 누르지 마십시오.

- 고장의 원인이 됩니다.

더러운 손이나 이물질 등으로 지문 접촉부가 오염 및 훼손되지 않도록 주의하여 주십시오.

- 지문 인식 성능 저하 및 고장의 원인이 됩니다.

제품 청소 시 물, 벤젠, 알코올 등이 아닌 부드러운 마른 천으로 닦아 주십시오.

- 제품 고장의 원인이 됩니다.

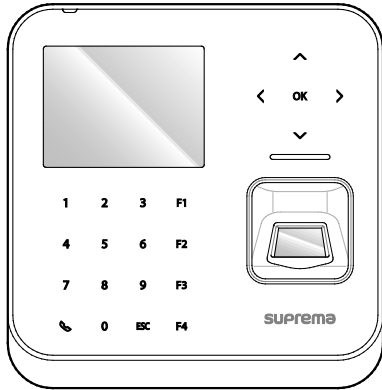
BioStation 2는 정전식 방식 버튼을 사용합니다. 비 오는 날씨와 같이 습기가 많거나 제품 표면에 물이 많이 묻은 경우 마른 천으로 닦은 뒤 사용하십시오.

잘못된 종류의 배터리로 교체하면 폭발의 위험이 있습니다.

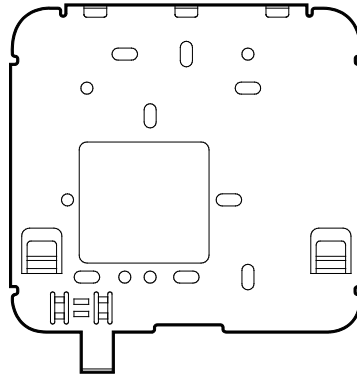
배터리는 거주 지역 또는 국제 폐기물 규정에 따라 폐기하십시오.

# 시작하기

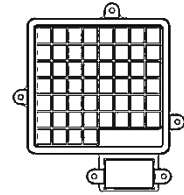
## 구성품



BioStation 2



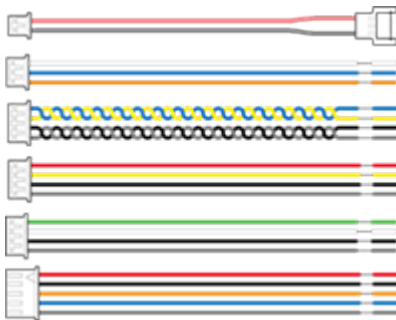
벽걸이용 브래킷



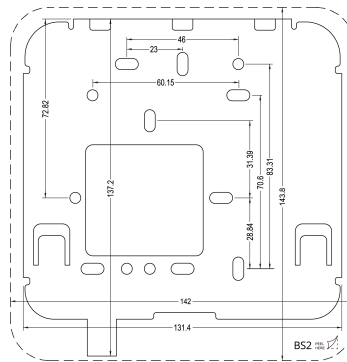
케이블 커버



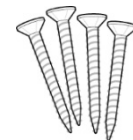
브래킷 고정용 나사  
(별 모양)



연결 케이블  
(2핀 1개, 3핀 1개, 4핀 3개, 5핀 1개)



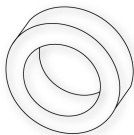
드릴링 템플릿



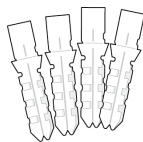
고정용 나사 x4



다이오드



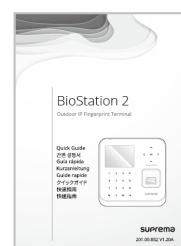
페라이트 코어



PVC 앵커 x4



오픈소스라이선스 가이드

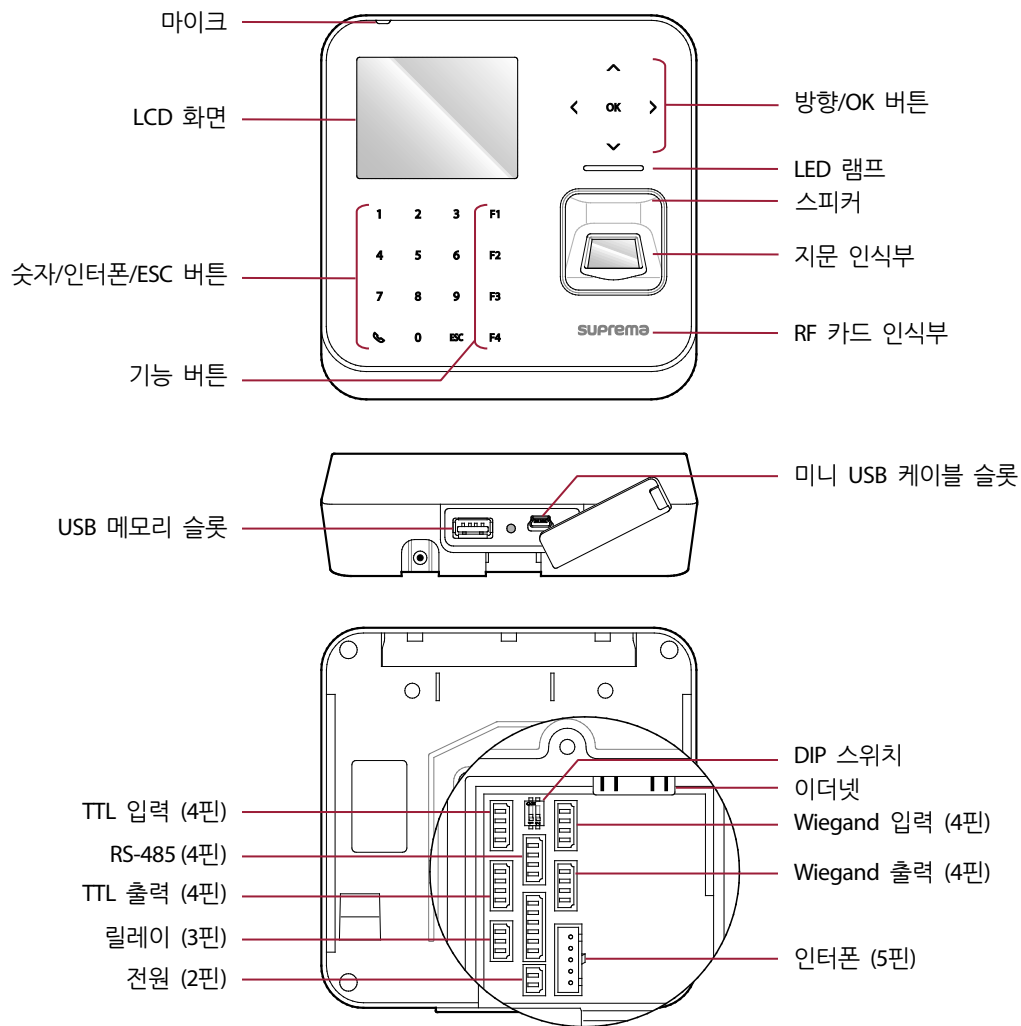


퀵 가이드

## 알아두기

- 구성품은 설치 환경에 따라 달라질 수 있습니다.

## 각 부분의 명칭 및 기능



명칭	기능 설명
마이크	인터폰이 연결되었을 때 사용자의 음성을 전달합니다.
LCD 화면	각종 정보나 설정 화면이 표시됩니다.
숫자/인터폰/ESC 버튼	<ul style="list-style-type: none"> <li>1~9: 숫자/문자 입력, 메뉴 선택</li> <li> : 인터폰 연결</li> <li>ESC: 메뉴 진입, 이전 화면으로 이동, 입력 취소</li> </ul>
기능 버튼	근태 기능 키로 사용하거나 하위 메뉴를 선택할 때 사용합니다.
방향/OK 버튼	<ul style="list-style-type: none"> <li>^: 문자 종류 변경,</li> <li>∨: 문자 종류 변경, 근태 이벤트 선택</li> <li>&lt;: 숫자/문자 삭제</li> <li>&gt;: 기호 삽입, 항목 설정</li> <li>OK: 항목 선택/설정 저장</li> </ul>
스피커	소리를 들을 수 있습니다.
LED 램프	LED 램프 색상으로 제품 작동 상태가 표시됩니다.
지문 인식부	출입을 위해 지문을 인식시키는 부분입니다.

<b>RF 카드 인식부</b>	출입을 위해 카드를 인식시키는 부분입니다.
<b>USB 메모리 슬롯</b>	USB 메모리를 연결합니다.
<b>미니 USB 케이블 슬롯</b>	추후 지원 예정.
<b>TTL 입력 (4핀)</b>	TTL 입출력 케이블을 연결합니다.
<b>RS-485 (4핀)</b>	RS-485 케이블을 연결합니다.
<b>TTL 출력 (4핀)</b>	TTL 입출력 케이블을 연결합니다.
<b>릴레이 (3핀)</b>	릴레이 케이블을 연결합니다.
<b>전원 (2핀)</b>	전원 케이블을 연결합니다.
<b>DIP 스위치</b>	RS-485 연결 시 종단저항을 설정합니다. • 종단저항을 사용하려면 1번 DIP 스위치를 ON으로 설정하십시오.
<b>이더넷</b>	이더넷 케이블을 연결합니다.
<b>Wiegand 입력 (4핀)</b>	Wiegand 입출력 케이블을 연결합니다.
<b>Wiegand 출력 (4핀)</b>	Wiegand 입출력 케이블을 연결합니다.
<b>인터폰 (5핀)</b>	인터폰 케이블을 연결합니다.

## 케이블 및 커넥터

### 전원



핀	명칭	색상
1	PWR +VDC	빨간색(흰띠)
2	PWR GND	검은색(흰띠)

### 릴레이



핀	명칭	색상
1	RLY NO	흰색
2	RLY COM	파란색
3	RLY NC	주황색

### RS-485



핀	명칭	색상
1	485 TRXP	파란색
2	485 TRXN	노란색
3	485 GND	검은색
4	SH GND	회색

### TTL 입출력



핀	명칭	색상
1	TTL IN0 / OUT0	빨간색
2	TTL IN1 / OUT1	노란색
3	TTL GND	검은색
4	SH GND	회색



## Wiegand 입출력



핀	명칭	색상
1	WG IN0 / OUT0	녹색
2	WG IN1 / OUT1	흰색
3	WG GND	검은색
4	SH GND	회색

## 인터폰



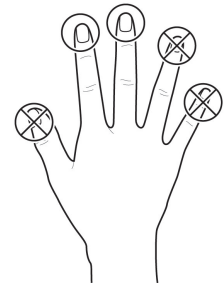
핀	명칭	색상
1	INPH +VDC	빨간색
2	INPH GND	검은색
3	INPH AUD	주황색
4	INPH DTA	파란색
5	SH GND	회색

## 올바른 지문 입력 방법

지문 인식률을 높이기 위해 올바르게 지문을 등록하십시오. BioStation 2는 사용자의 지문 입력 각도 및 위치가 바뀌더라도 지문을 인식할 수 있습니다. 지문을 등록할 때 다음 사항에 유의하여 등록하면 인식률을 높일 수 있습니다.

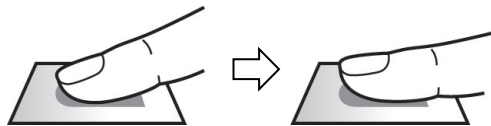
### 지문 입력을 위한 손가락 선택

- 한 손에 짐을 들거나 손가락에 상처가 나는 경우와 같이 특정 손가락의 지문을 사용하기 어려운 경우를 대비하여, 한 명의 사용자 당 최대 10 개의 지문을 등록할 수 있습니다.
- 지문이 잘 인식되지 않는 사용자의 경우 동일 손가락을 두 번 중복으로 등록하여 인식률을 높일 수 있습니다.
- 손가락에 상처가 있거나 지문이 흐릴 경우 다른 손가락의 지문을 입력하십시오.
- 지문 입력 시 검지 또는 중지를 사용할 것을 권장합니다. 다른 손가락은 지문 센서 중앙에 정확히 위치하기 어려워서 인식률이 떨어질 수 있습니다.



### 지문 등록 방법

- 1 지문을 등록할 때 LCD 화면에 “첫 번째 지문을 입력하십시오.” 라고 표시되면 등록할 손가락을 지문 인식부에 올리고, 살며시 눌러 지문이 잘 인식되도록 하십시오.



- 2 “뽁” 소리가 난 뒤 재입력 화면이 나타나면, 등록된 손가락의 지문을 다시 스캔하십시오.  
(등록할 손가락의 지문은 2번 입력합니다.)

#### 알아두기

##### 지문 등록 시 주의사항

지문 인식할 때 처음에 등록된 지문과 비교하기 때문에 지문 등록이 가장 중요합니다. 지문을 등록할 때 다음 사항에 유의하십시오.

- 손가락이 센서에 완전히 접촉이 되도록 깊이 위치시키십시오.
- 지문의 중심점 부분이 센서의 중심에 오도록 위치시키십시오.
- 손가락에 상처가 있거나 지문이 흐릴 경우 다른 손가락의 지문을 입력하십시오.
- 지문 인식 시 화면 안내에 따라 움직이지 말고 정확하게 입력하십시오.
- 손가락을 세워 센서와의 접촉 면적이 작아 지거나 손가락 각도가 틀어진 경우에는 지문 인식이 되지 않을 수 있습니다.



##### 지문 인식이 잘 되지 않는 경우

BioStation 2는 계절의 변화나 손가락의 상태 변화에 관계없이 지문을 인식할 수 있습니다. 하지만, 외부 환경이나 지문 입력 방법에 따라 인식률의 차이가 있을 수 있습니다.

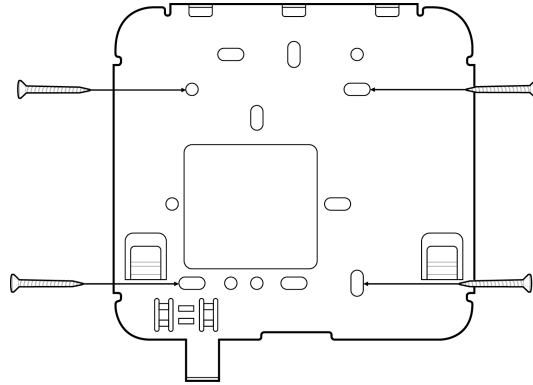
지문이 잘 인식되지 않는 경우 다음의 조치를 취할 것을 권장합니다.

- 손가락에 물이나 땀이 있을 경우 물기를 닦은 뒤 입력하십시오.
- 손가락이 너무 건조한 경우 손 끝에 입김을 가볍게 분 뒤 입력하십시오.
- 손가락에 상처가 생긴 경우 다른 손가락의 지문을 다시 등록하십시오.
- 처음 등록된 지문은 올바르게 입력되지 않은 경우가 많으므로 ‘지문 등록 시 주의사항’에 따라 지문을 다시 등록하십시오.

# 설치

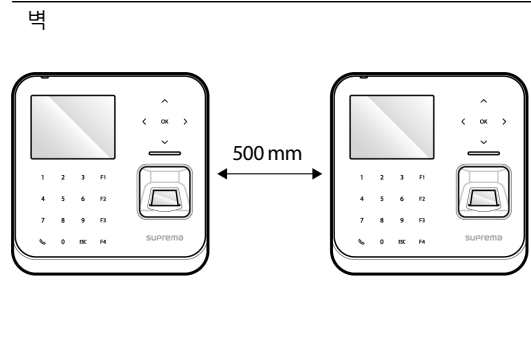
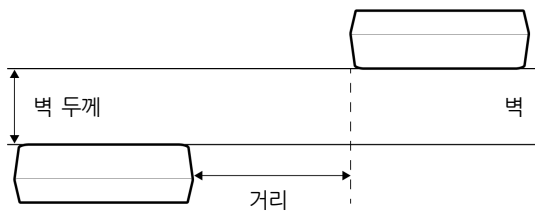
## 브래킷 및 제품 고정

- 1 제공된 드릴링 템플릿을 이용하여 브래킷을 장착할 위치를 정하십시오. BioStation 2를 장착할 위치에 브래킷 고정용 나사를 이용하여 브래킷을 단단히 고정하십시오.



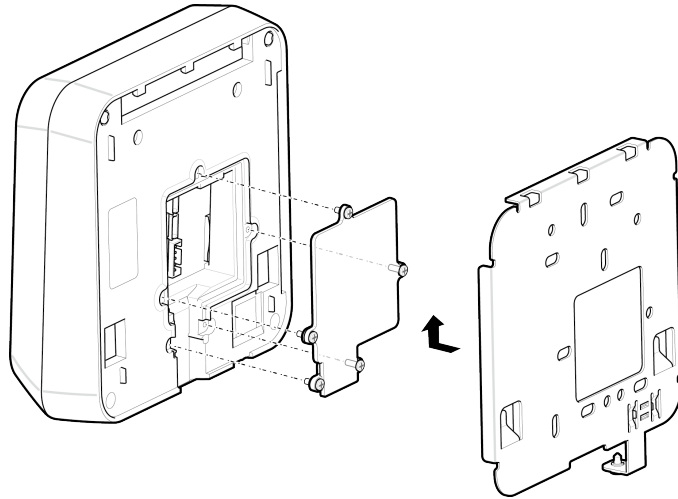
### 알아두기

- BioStation 2를 콘크리트 벽에 설치할 경우 드릴로 구멍을 뚫어 PVC 앵커를 끼운 뒤 고정용 나사로 고정하십시오.
- RF 신호 간섭을 피하기 위해 최소 이격 거리를 확인하여 설치하십시오.



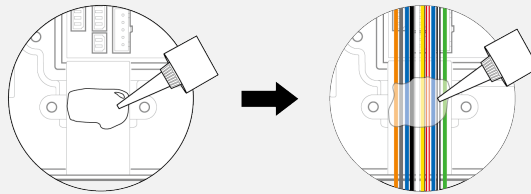
벽 두께	거리
100 mm	400 mm
120 mm	350 mm
150 mm	300 mm

- 2 케이블 커버를 조립한 뒤 고정된 브래킷 위에 BioStation 2를 장착하십시오.

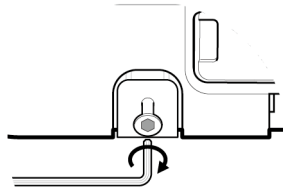


#### 알아두기

- 케이블 커버를 조립하지 않을 경우 방수, 방진 성능이 저하됩니다.
- IP65 등급으로 사용하려면 액상 실리콘을 제품 표면과 연결된 케이블에 10mm 정도 충분히 도포한 뒤 케이블 커버를 조립하십시오. IP65 등급은 모든 먼지를 막을 수 있으며, 낮은 수압의 물줄기로부터 보호(제한된 수준의 유입 허용)를 의미합니다.



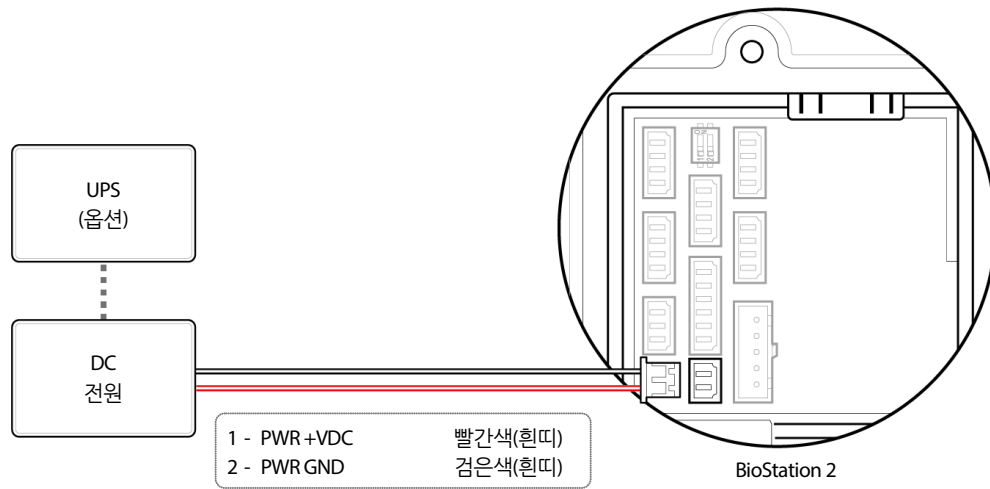
- 3 BioStation 2의 밑면에 제품 고정용 나사를 돌려 BioStation 2와 브래킷을 조립하십시오.



#### 알아두기

- 브래킷과 제품을 조립할 때 향상된 보안을 위해 제품 고정용 나사 대신 동봉된 브래킷 고정용 나사(별 모양)를 이용할 수 있습니다.

## 전원 연결



### 알아두기

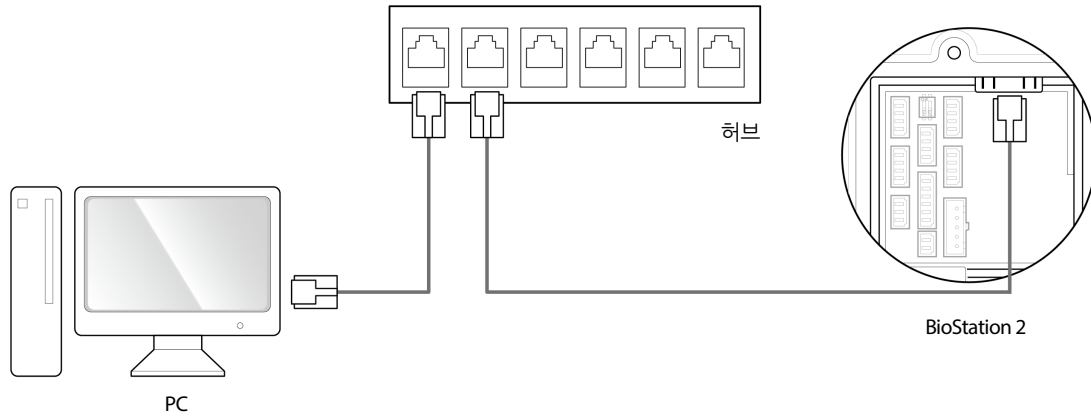
- 전원 어댑터는 DC 12V(± 10%), 최소 1,500mA 이상의 제품으로 IEC/EN 60950-1 승인을 받은 제품을 사용하십시오. 전원 어댑터에 다른 기기를 연결하여 사용하려면 단말기의 소모 전력(1,500mA)과 다른 기기에 필요한 소모 전력을 합한 전류 용량 이상의 어댑터를 사용해야 합니다.
- Secure I/O 2, 전기정(전기식 잠금장치), 제품은 반드시 개별 전원을 사용하십시오. 전원을 함께 연결하여 사용하면 장치가 오작동할 수 있습니다.
- 전원 장치(또는 어댑터)와 PoE 전원 장치를 함께 연결하지 마십시오.

## 네트워크 연결

### TCP/IP

#### LAN 연결 (허브와 연결)

일반 타입의 CAT-5 케이블을 사용하여 허브와 연결할 수 있습니다.



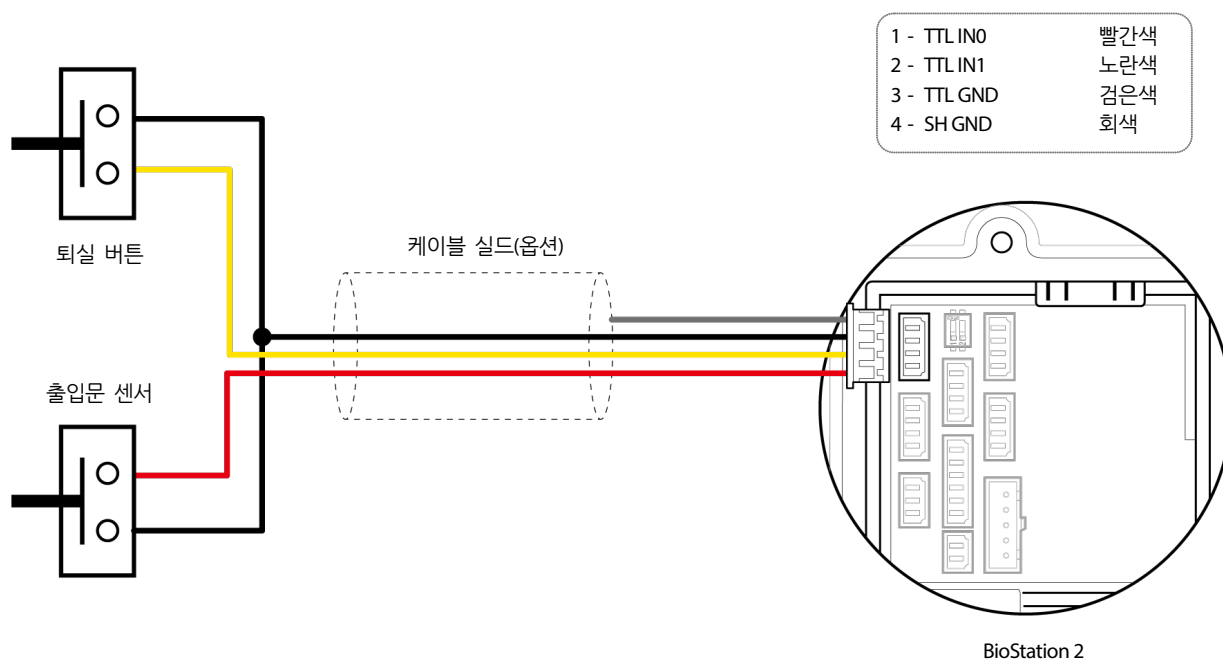
#### LAN 연결 (PC와 직접 연결)

BioStation 2는 자동 MDI/MDIX 기능을 가지고 있으므로 크로스 케이블 아닌 일반 스트레이트 타입의 CAT-5 케이블로 PC와 직접 연결할 수 있습니다.

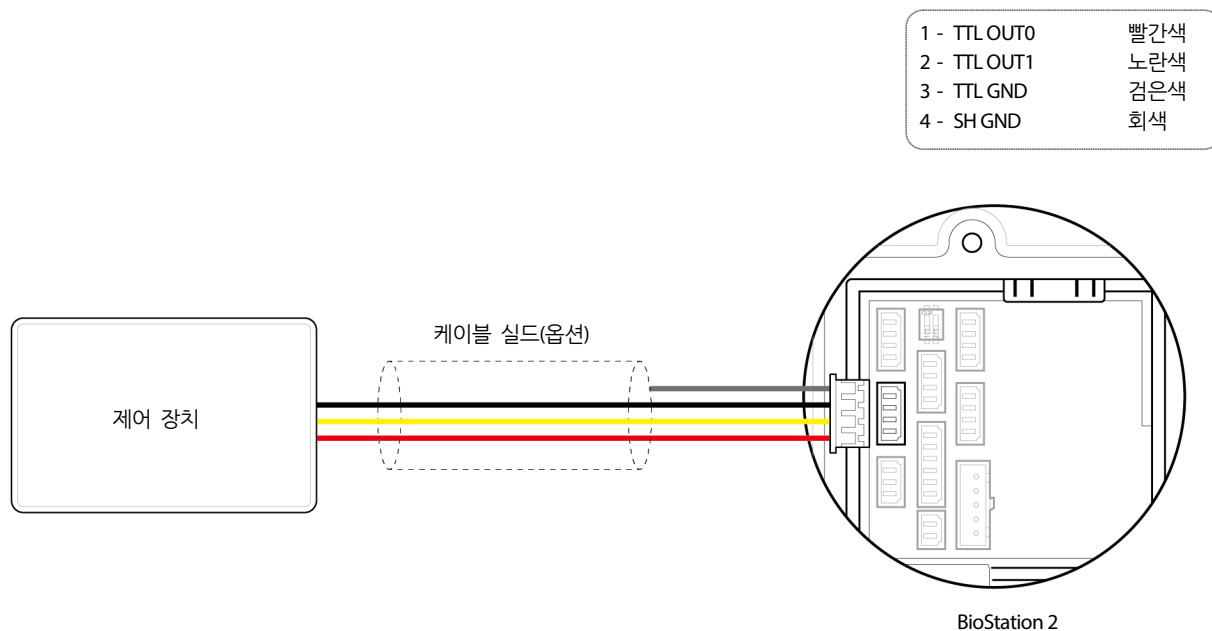


## TTL 입출력 연결

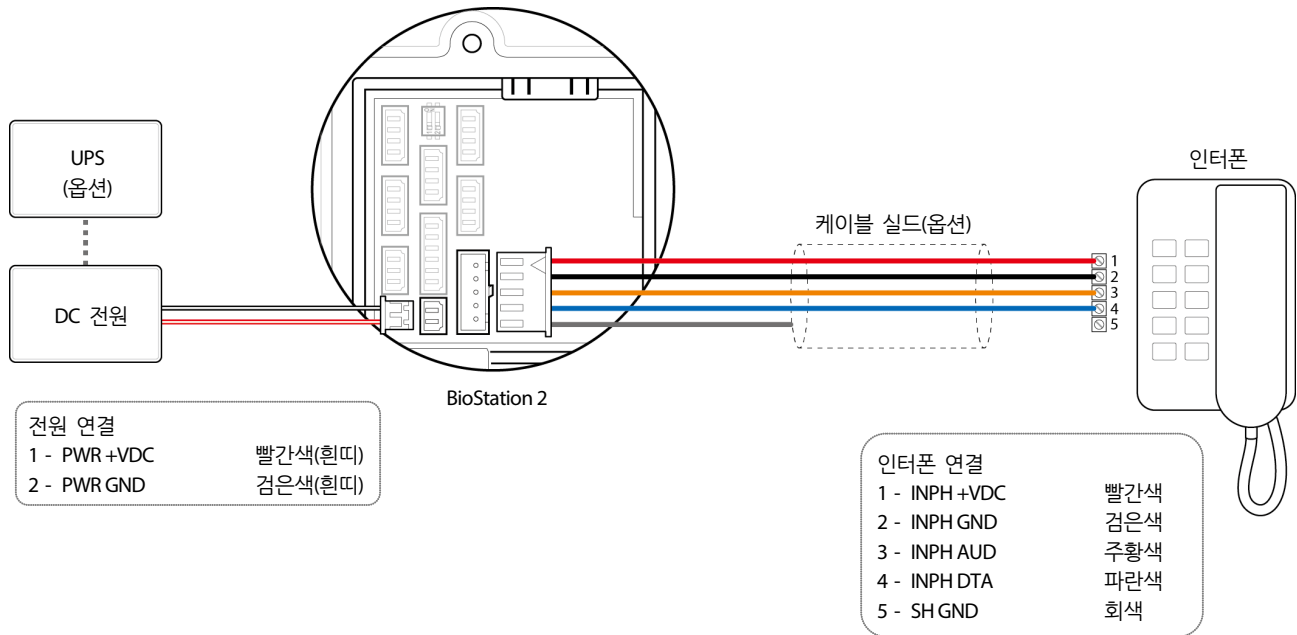
### TTL 입력 연결



### TTL 출력 연결



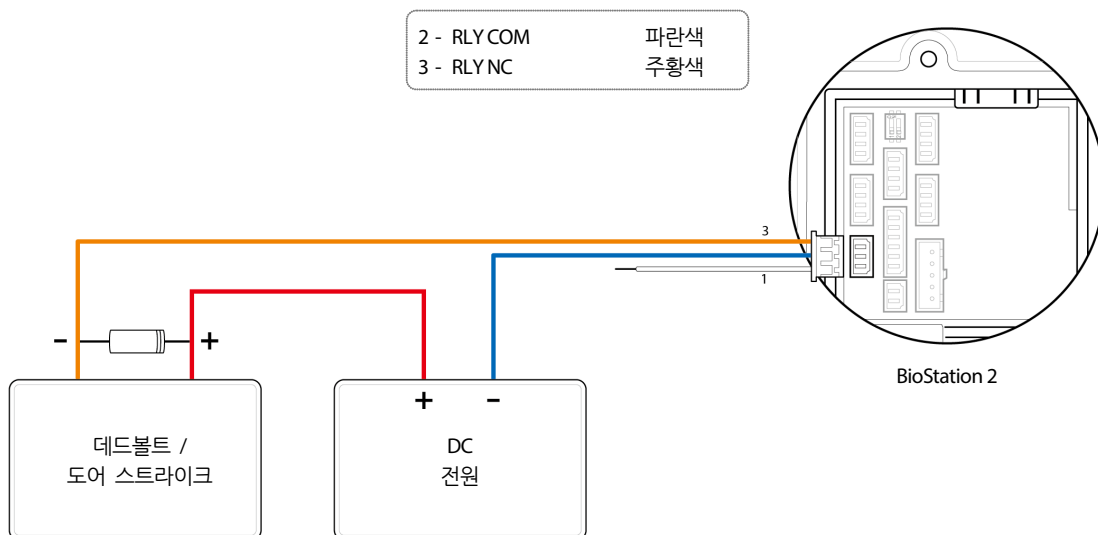
## 인터폰 연결



## 릴레이 연결

### Fail Safe Lock

Fail Safe Lock을 사용하려면 아래 그림과 같이 N/C 릴레이를 연결하십시오. Fail Safe Lock은 정상 시 릴레이 회로에 전류가 흐르며, 릴레이가 동작하여 전류를 일시적으로 차단하면 출입문이 열립니다. 정전이 되거나 외부 요인으로 장치의 전원이 끊길 경우 출입문이 열립니다.



### 알아두기

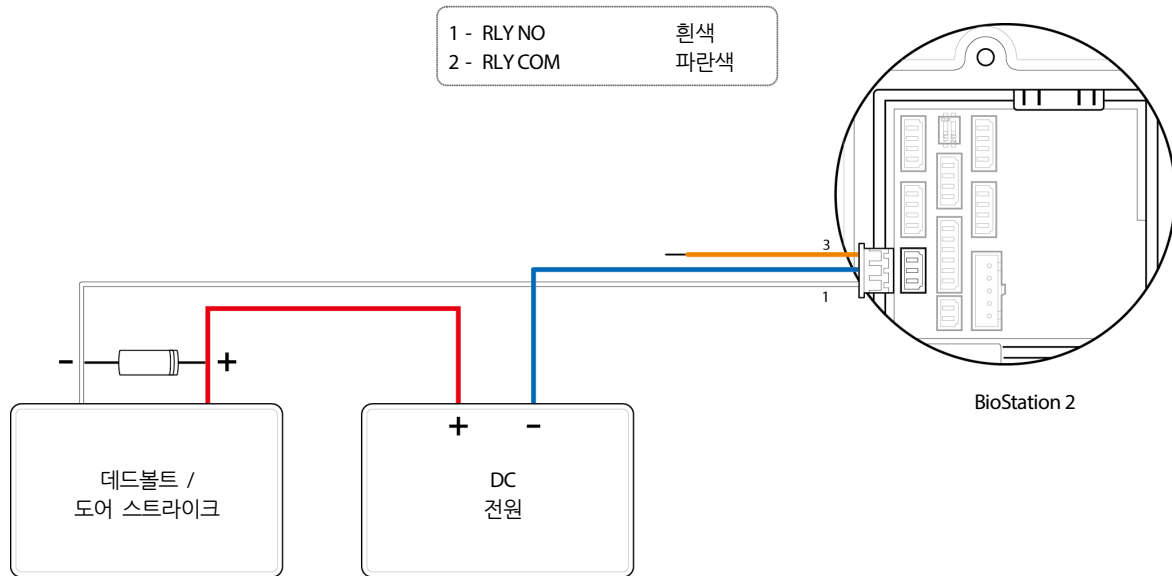
- 출입문 잠금 장치가 작동할 때 발생하는 역전류로부터 릴레이를 보호하기 위해 그림과 같이 출입문 잠금 장치 배선 양쪽에 다이오드를 설치하십시오.
- 다이오드의 설치 방향에 주의하십시오. 다이오드는 출입문 잠금 장치와 가깝게 설치하십시오.
- BioStation 2와 출입문 잠금 장치는 별도의 전원을 사용하십시오.
- 슈프리마의 지능형 장치에는 편의를 제공하기 위해 별도의 컨트롤러 없이 독립형으로 연결하여 출입문을 직접 열거나 잠글 수 있도록 하는 릴레이가 내장되어 있습니다. 그러나 향상된 보안이 요구되는 출입통제 애플리케이션의 경우 잠재적으로 출입문 잠금 해제를 유발할 수 있는 변조 공격을 방지하기 위해 장치에 내장된 릴레이를 사용하지 않는 것이 좋습니다. 이러한 애플리케이션의



경우 잠금 제어를 위해 출입문 내부의 안전한 위치에 설치된 슈프리마의 Secure I/O 2, DM-20, CoreStation과 같은 별도의 릴레이 장치를 사용할 것을 권장합니다.

## Fail Secure Lock

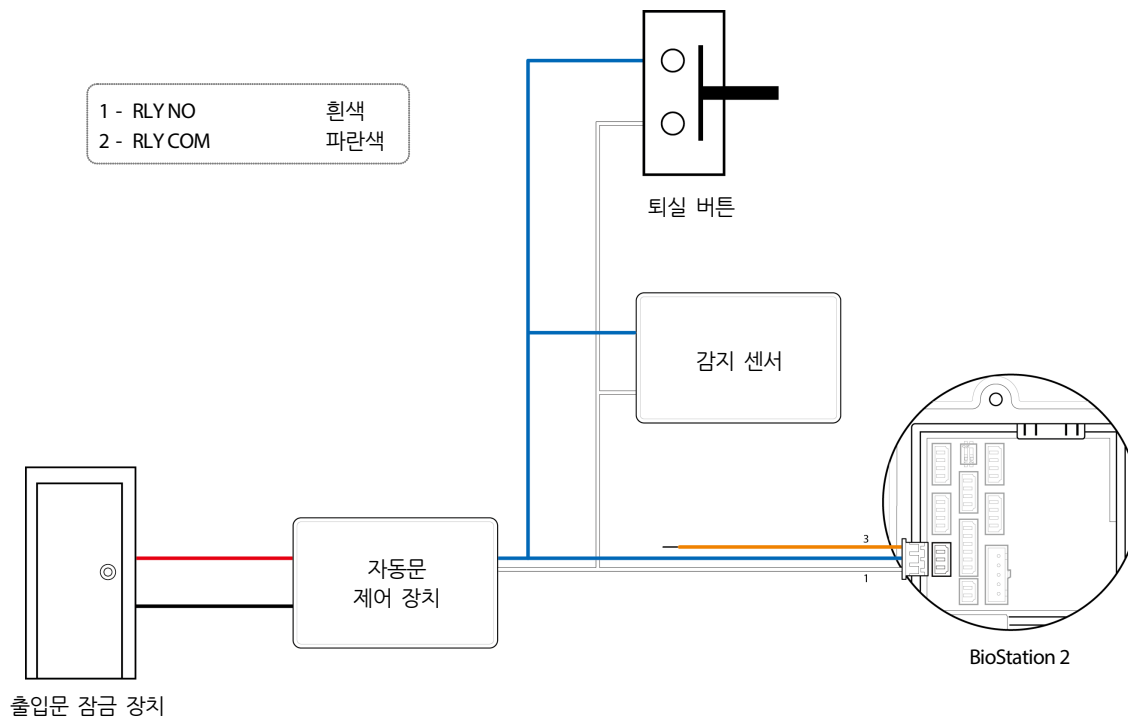
Fail Secure Lock을 사용하려면 아래 그림과 같이 N/O 릴레이를 연결하십시오. Fail Secure Lock은 정상 시 릴레이 회로에 전류가 흐르지 않으며, 릴레이가 동작하여 전류가 흐르면 출입문이 열립니다. 정전이 되거나 외부 요인으로 장치의 전원이 끊길 경우 출입문이 잠깁니다.



## 알아두기

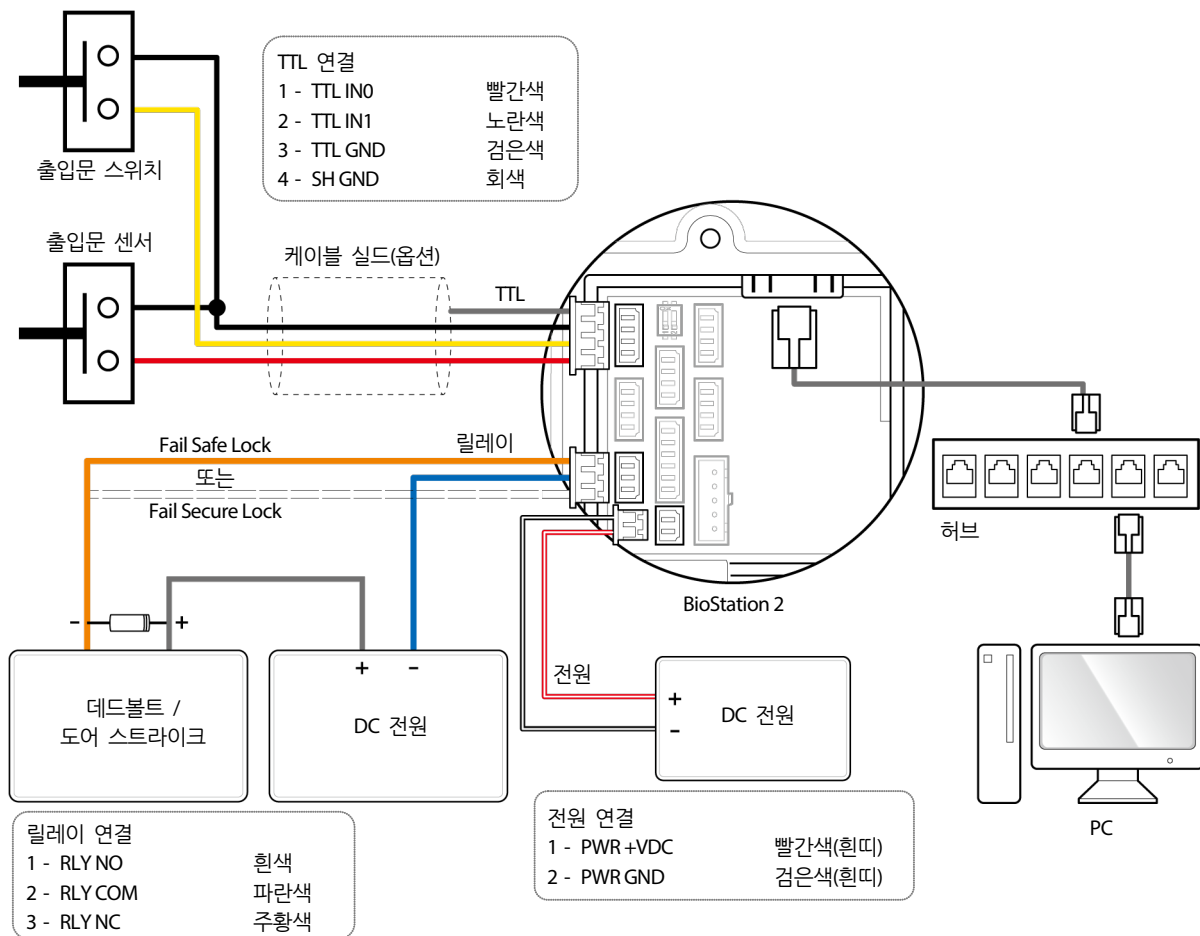
- 출입문 잠금 장치가 작동할 때 발생하는 역전류로부터 릴레이를 보호하기 위해 그림과 같이 출입문 잠금 장치 배선 양쪽에 다이오드를 설치하십시오.
- 다이오드의 설치 방향에 주의하십시오. 다이오드는 출입문 잠금 장치와 가깝게 설치하십시오.
- BioStation 2와 출입문 잠금 장치는 별도의 전원을 사용하십시오.
- 슈프리마의 지능형 장치에는 편의를 제공하기 위해 별도의 컨트롤러 없이 독립형으로 연결하여 출입문을 직접 열거나 잠글 수 있도록 하는 릴레이가 내장되어 있습니다. 그러나 향상된 보안이 요구되는 출입통제 애플리케이션의 경우 잠재적으로 출입문 잠금 해제를 유발할 수 있는 변조 공격을 방지하기 위해 장치에 내장된 릴레이를 사용하지 않는 것이 좋습니다. 이러한 애플리케이션의 경우 잠금 제어를 위해 출입문 내부의 안전한 위치에 설치된 슈프리마의 Secure I/O 2, DM-20, CoreStation과 같은 별도의 릴레이 장치를 사용할 것을 권장합니다.

## 자동문 연결



## 독립형 연결

별도의 I/O 장치를 연결하지 않고 BioStation 2를 직접 출입문 잠금 장치, 출입문 스위치, 출입문 센서 등에 연결할 수 있습니다.



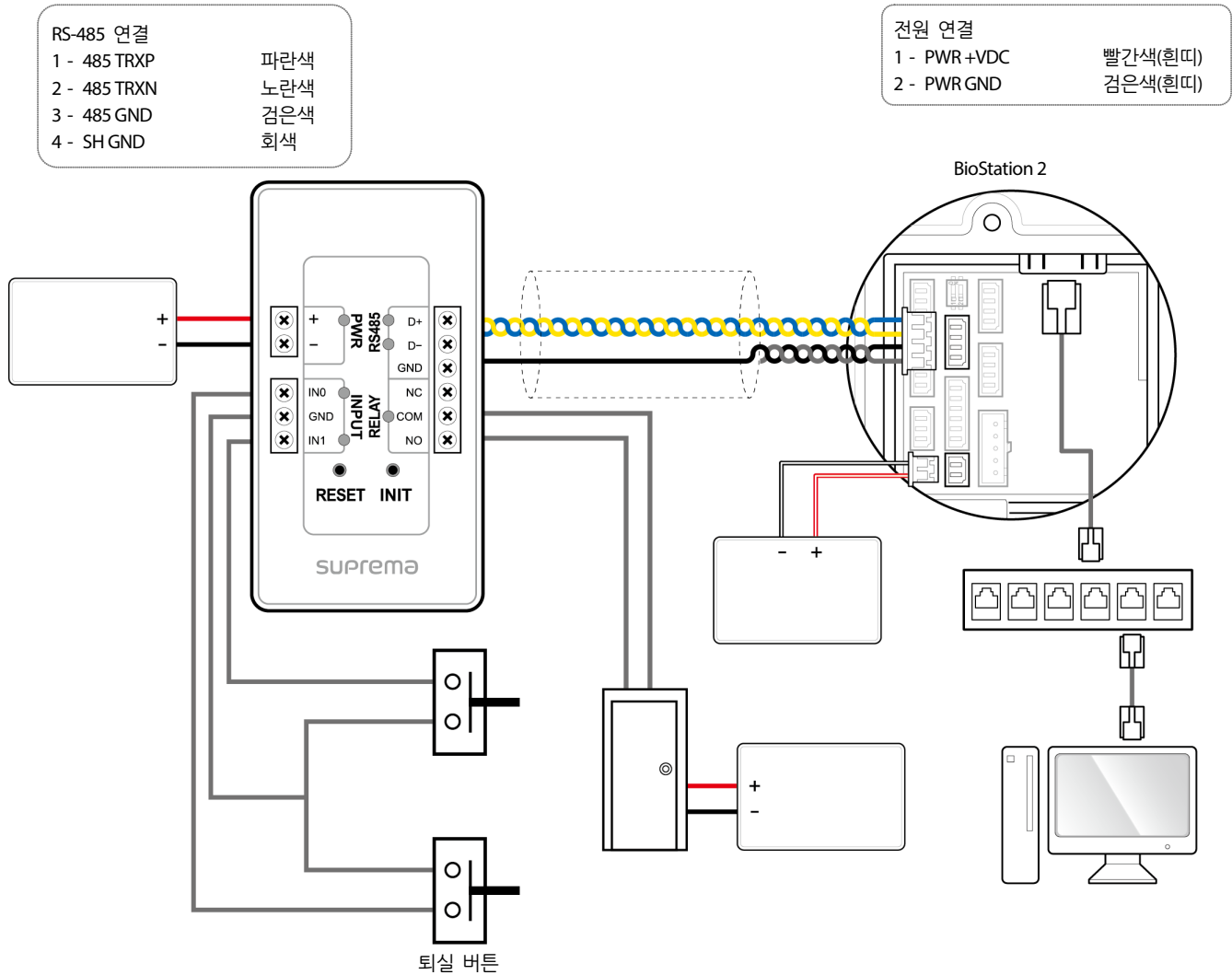
### 알아두기

- RS485 케이블로 슬레이브 장치를 연결하여 BioStation 2를 다중 출입문 제어 장치로 사용할 수 있습니다. 슬레이브 장치는 더미 리더로 사용되며 인증은 마스터 장치에서 수행합니다.
- Xpass가 마스터 장치로 연결될 경우 카드 인증만 사용할 수 있습니다.
- 연결할 수 있는 최대 슬레이브 장치 수는 인증 방법, 사용자 수, 장치 수에 따라 달라지며 슬레이브 장치 수는 지문 인증 속도에 영향을 줍니다.
- 마스터 장치는 31개의 슬레이브 장치를 제어할 수 있습니다. RS485 대역폭으로 인해 최대 7대의 지문 인식 장치를 연결할 수 있습니다.
- 슈프리마의 지능형 장치에는 편의를 제공하기 위해 별도의 컨트롤러 없이 독립형으로 연결하여 출입문을 직접 열거나 잠글 수 있도록 하는 릴레이가 내장되어 있습니다. 그러나 향상된 보안이 요구되는 출입통제 애플리케이션의 경우 잠재적으로 출입문 잠금 해제를 유발할 수 있는 변조 공격을 방지하기 위해 장치에 내장된 릴레이를 사용하지 않는 것이 좋습니다. 이러한 애플리케이션의 경우 잠금 제어를 위해 출입문 내부의 안전한 위치에 설치된 슈프리마의 Secure I/O 2, DM-20, CoreStation과 같은 별도의 릴레이 장치를 사용할 것을 권장합니다.
- 더 자세한 내용은 슈프리마 기술 지원팀(CS@suprema.co.kr)에 문의하십시오.

## Secure I/O 2 연결

BioStation 2에 I/O 장치인 Secure I/O 2를 RS-485로 연결할 수 있습니다. BioStation 2와 Secure I/O 2의 연결이 끊기거나 외부 요인에 의해 BioStation 2의 전원이 차단되더라도 보안을 유지할 수 있습니다.

- RS-485 케이블은 AWG24, 꼬임선(Twisted Pair), 최대 길이 1.2 km를 사용하십시오.
- RS-485 데이터 체인으로 연결할 경우 종단 저항(120Ω)을 데이터 체인 연결의 양 끝에 연결하십시오. 중간 선로에 연결할 경우 신호 레벨이 작아져 통신 성능이 떨어지므로 반드시 데이터 체인 연결의 양 끝에 연결하십시오. BioStation 2의 종단 저항이 필요하다면 DIP 스위치 1을 ON으로 설정하십시오.

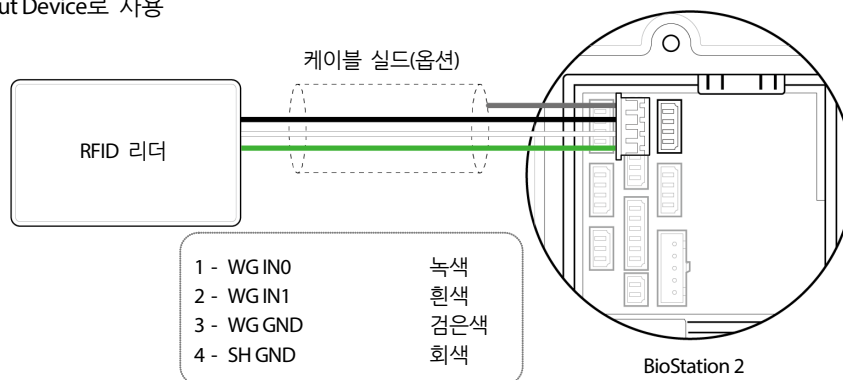


### 알아두기

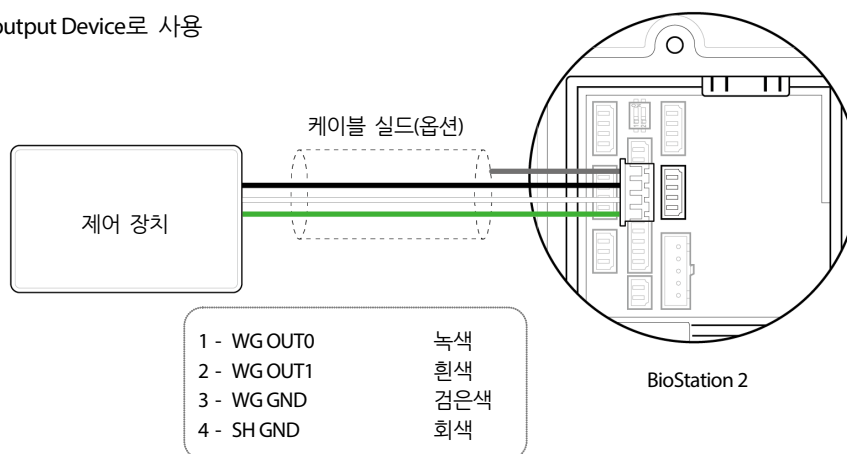
- RS485 케이블로 슬레이브 장치를 연결하여 BioStation 2를 다중 출입문 제어 장치로 사용할 수 있습니다. 슬레이브 장치는 더미 리더로 사용되며 인증은 마스터 장치에서 수행합니다.
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- 연결할 수 있는 최대 슬레이브 장치 수는 인증 방법, 사용자 수, 장치 수에 따라 달라지며 슬레이브 장치 수는 지문 인증 속도에 영향을 줍니다.
- 마스터 장치는 31개의 슬레이브 장치를 제어할 수 있습니다. RS485 대역폭으로 인해 최대 7대의 지문 인식 장치를 연결할 수 있습니다.
- 더 자세한 내용은 슈프리마 기술 지원팀([CS@suprema.co.kr](mailto:CS@suprema.co.kr))에 문의하십시오.

## Wiegand 연결

Wiegand input Device로 사용



Wiegand output Device로 사용



## 제품 사양

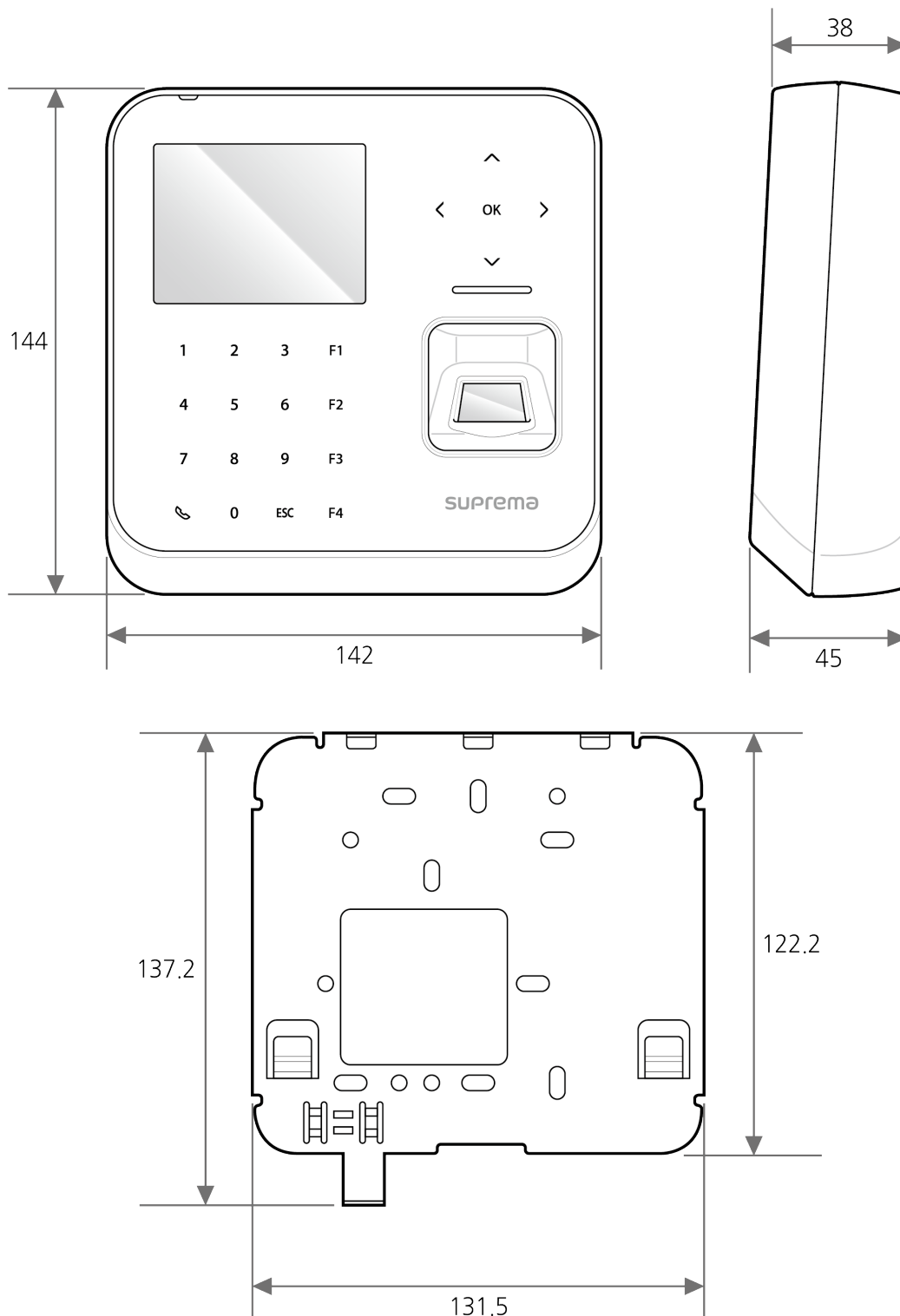
구분	항목	규격
일반	바이오인식	지문
	IP 등급	IP 65
	RF 카드*	<ul style="list-style-type: none"> <li>BS2-OMPW: 13.56MHz MIFARE, MIFARE Plus, DESFire EV1/EV2*, FeliCa, NFC</li> <li>BS2-OIPW: 13.56MHz iCLASS SE/SR/Seos, NFC</li> <li>BS2-OHPW: 125kHz HID Prox</li> <li>BS2-OEPW: 125kHz EM</li> </ul>
저장 용량	최대 사용자 수 (1:1)	500,000
	최대 사용자 수 (1:N)	20,000
	최대 템플릿 수 (1:1)	1,000,000 (손가락마다 두 개의 템플릿)
	최대 템플릿 수 (1:N)	40,000 (손가락마다 두 개의 템플릿)
	최대 로그 수	3,000,000
인터페이스	Wi-Fi	지원
	TCP/IP	지원
	RS-485	1채널 마스터/슬레이브 (선택 가능)
	Wiegand	입력 1채널, 출력 1채널
	TTL 입력	입력 2채널, 출력 2채널
	릴레이	1개
	USB	USB 2.0 (Host)
릴레이	전압	최대 24VDC
	전류	0.5A, 최대 1.A
하드웨어	CPU	1.0 GHz
	메모리	8GB Flash + 256 MB RAM
	LCD	2.8" QVGA 컬러 LCD
	LED	다중 색상
	소리	16-bit Hi-Fi
	동작 온도	-20°C ~ 50°C
	탐퍼	지원
	전원	9V ~ 18V
	PoE	옵션
	치수 (W x H x D mm)	142 x 144 x 45(38)
	인증	CE, FCC, KC, RoHS, REACH, WEEE

\* 지원되는 카드 목록에 대한 자세한 정보는 기술 지원팀(support.supremainc.com)에 문의하십시오.

\* DESFire EV2 카드는 DESFire EV1 카드와 하위 호환되므로, DESFire EV1 카드의 기능을 포함하여 CSN 및 스마트 카드 기능이 지원됩니다.

## 제품 치수

(단위: mm)



## FCC 준수 정보

이 기기는 FCC 규제의 Part 15를 준수합니다.

작동은 다음의 두 조건을 따릅니다.

- (1) 이 기기는 유해한 간섭을 발생시키지 않습니다.
- (2) 이 기기는 원치 않는 작동을 일으키는 간섭을 포함한 어떠한 간섭도 수용합니다.

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Version 3, 29 June 2007

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