

X-Station 2

설치 가이드

버전 1.04

한국어

KO 101.00.XS2 V1.04A

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안전을 위한 주의사항

사용자의 위험이나 재산상의 손해를 막기 위해 제품을 사용하기 전에 이 설명서를 반드시 읽고 제품을 안전하고 올바르게 사용하십시오. 이 설명서에서 말하는 제품이란 본체와 함께 제공되는 모든 구성품을 포함합니다.

기호



경고: 제품을 사용할 때 위반할 경우 심각한 상해나 사망에 이를 수 있는 경고 사항을 표기할 때 사용합니다.



주의: 제품을 사용할 때 위반할 경우 경미한 상해나 제품 손상이 발생할 수 있는 주의 사항을 표기할 때 사용합니다.



알아두기: 제품을 사용할 때 참고 사항이나 추가 정보를 제공할 때 사용합니다.



경고

설치

사용자가 임의로 제품을 설치하거나 수리하지 마십시오.

- 화재, 감전, 부상의 원인이 됩니다.
- 사용자의 임의 설치나 수리로 인해 제품이 손상된 경우 무상 수리 서비스가 제공되지 않습니다.

제품을 직사광선에 노출된 장소, 습기, 먼지나 그을음이 많은 장소, 가스가 켜 가능성이 있는 장소에 설치하지 마십시오.

- 화재 또는 감전의 원인이 됩니다.

제품을 옥외에 설치할 경우 차양 및 통풍이 원활한 장소에 설치하십시오.

제품을 옥외에 설치할 경우 밀폐된 외함을 사용하지 마십시오.

- 직사광선에 의해 외함 내부 온도가 상승하여 과열로 인한 화재, 감전, 제품 손상의 원인이 됩니다.

제품을 전열기 등으로 인해 열이 발생하는 장소에 설치하지 마십시오.

- 과열로 인한 화재 또는 감전의 원인이 됩니다.

물기가 있는 곳에 설치하지 마십시오.

- 습기로 인한 감전 또는 제품 손상의 원인이 됩니다.

전자파 장애가 있는 곳에 설치하지 마십시오.

- 감전 또는 제품 손상의 원인이 됩니다.

사용

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

- 화재, 감전, 제품 손상의 원인이 됩니다.

손상된 전원 어댑터나 플러그, 헐거운 콘센트는 사용하지 마십시오.

- 접촉이 불안정할 경우 화재 또는 감전의 원인이 됩니다.

전원 코드를無理하게 구부리거나 망가뜨리지 마십시오.

- 화재 또는 감전의 원인이 됩니다.



주의

설치

제품을 직사광선이나 자외선에 직접 노출된 장소에 설치하지 마십시오.

- 제품 손상, 오작동 및 변색, 변형의 원인이 됩니다.

전원 케이블 등을 통행 장소에 방치하지 마십시오.

- 신체 상해 또는 제품 손상의 원인이 됩니다.

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

- 고장의 원인이 됩니다.

여러 대의 장치를 설치할 경우 최소 이격 거리를 확인하십시오.

- 다른 장치의 RF 및 BLE 성능에 영향을 주어 장치가 오작동할 수 있습니다.

직류 24 V, 최소 800 mA 또는 직류 12 V, 최소 1,500 mA 이상의 전원 어댑터만 사용하십시오.

- 적합한 전원을 사용하지 않을 경우 장치가 오작동할 수 있습니다.

제품과 Secure I/O 2, 전기정(전기식 잠금 장치)은 반드시 개별 전원을 사용하십시오.

- 장치가 오작동할 수 있습니다.

전원 장치와 PoE 전원을 함께 연결하지 마십시오.

- 장치가 오작동할 수 있습니다.

IP65 등급을 만족하기 위해 제품과 케이블을 연결한 뒤 반드시 케이블 커버를 사용해야 합니다. 완전히 노출된 옥외에 설치할 경우 외함을 사용할 것을 권장합니다.

- 방수·방진 성능이 저하될 경우 고장의 원인이 됩니다.

사용

제품을 떨어뜨리거나 충격을 주지 마십시오.

- 고장의 원인이 됩니다.

제품의 펌웨어 업그레이드 진행 중 전원 공급이 중단되지 않도록 주의하십시오.

- 고장의 원인이 됩니다.

암호를 타인이 알지 못하도록 관리하고, 주기적으로 변경하십시오.

- 불법 침입의 원인이 됩니다.

제품의 버튼(터치패드)을 무리하게 누르거나 날카로운 도구를 사용해 누르지 마십시오.

- 고장의 원인이 됩니다.

제품을 -20°C ~50°C 이내에서 사용하고 너무 낮거나 높은 온도에서 보관하지 마십시오.

- 고장의 원인이 됩니다.

제품을 청소할 때 주의하십시오.

- 제품을 표면을 깨끗한 마른 천으로 부드럽게 닦으십시오.
- 제품을 소독해야 할 경우 마른 천에 소독용 알코올을 적당량 묻힌 뒤 제품 표면을 부드럽게 닦으십시오. 이소프로필 알코올이 70~75% 함유된 소독용 알코올과 깨끗하고 보풀이 없는 부드러운 천을 사용하십시오.
- 소독제를 제품에 직접 분사하지 마십시오.

제품을 원래 용도 이외 다른 용도로 사용하지 마십시오.

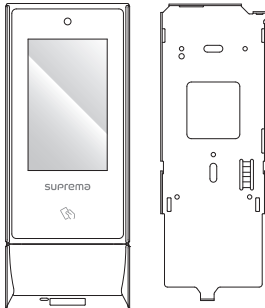
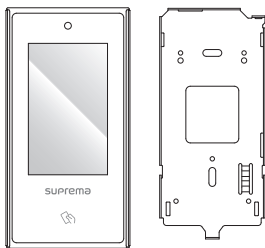
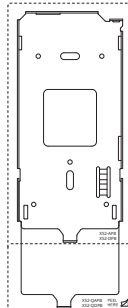
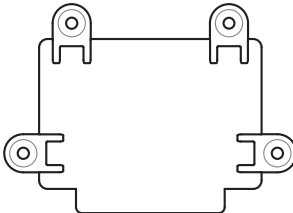
- 고장의 원인이 됩니다.

RTC 배터리

승인되지 않거나 잘못된 종류의 배터리로 교체하면 폭발의 위험이 있습니다. 배터리는 거주 지역 또는 국제 폐기물 규정에 따라 폐기하십시오.

시작하기

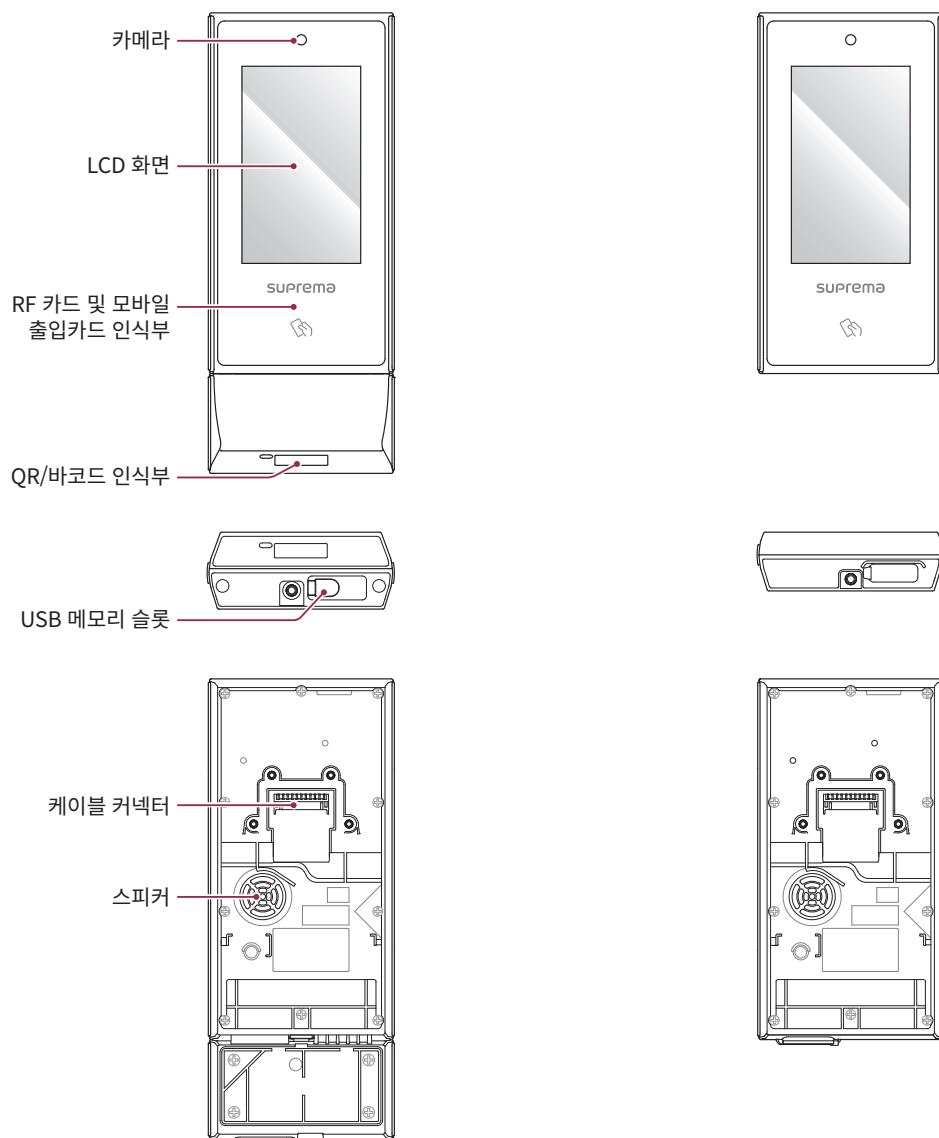
구성품

			
장치 및 브래킷 (XS2-QAPB, XS2-QDPB)	장치 및 브래킷 (XS2-APB, XS2-DPB)	드릴링 템플릿	
			
연결 케이블	다이오드	120 Ω 저항	
			
PVC 앵커 x2	고정용 나사 x2	브래킷 고정용 나사 (별 모양)	
			
케이블 커버	수축 튜브	퀵 가이드	오픈소스라이선스 가이드



- 구성품은 설치 환경에 따라 달라질 수 있습니다.
- 브래킷과 제품을 조립할 때 향상된 보안을 위해 제품 고정용 나사 대신 동봉된 브래킷 고정용 나사(별 모양)를 이용할 수 있습니다.
- 제품 사용에 대한 내용은 슈프리마 웹 사이트(<https://www.supremainc.com>)에 접속하여 사용자 가이드를 확인하십시오.

각 부분의 명칭 및 기능

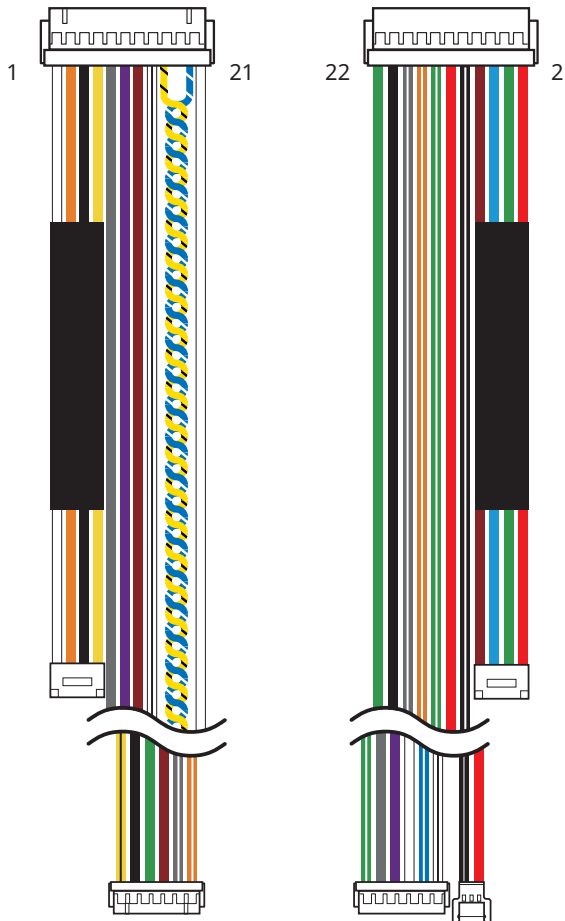


명칭	기능 설명
카메라	사용자의 사진을 등록하거나, 이미지 로고를 남길 수 있습니다.
LCD 화면	동작을 위한 UI를 제공합니다.
RF 카드 및 모바일 출입카드 인식부	출입을 위해 RF 카드 또는 모바일 출입카드를 인식시키는 부분입니다.
QR/바코드 인식부	출입을 위해 QR/바코드를 인식시키는 부분입니다.
USB (Type-C) 메모리 슬롯	USB 메모리를 연결합니다.
케이블 커넥터	케이블을 연결합니다. - 전원 - 이더넷 + PoE - RS-485 - Wiegand 입출력 - TTL 입력 - 릴레이
스피커	소리를 들을 수 있습니다.



QR/바코드 인식 기능은 XS2-QAPB, XS2-QDPB만 지원합니다.

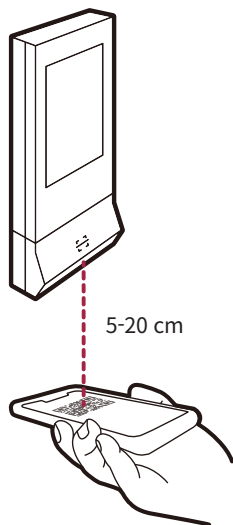
케이블 및 커넥터



케이블	핀	명칭	색상
RJ-45 (이더넷+PoE)	1	ENET TXP	흰색
	3	ENET TXN	주황색
	5	ENET RXP	검은색
	7	ENET RXN	노란색
TTL 입력	9	TTL GND	회색
	11	TTL IN0	보라색
	13	TTL IN1	갈색
RS-485	15	485 GND	흰색(검은 띠)
	17	485 TRXN	노란색(검은 띠)
	19	485 TRXP	파란색(흰 띠)
Wiegand	21	WG D1	흰색
	22	WG D0	초록색
	20	WG GND	검은색
릴레이	18	RLY NO	회색(흰 띠)
	16	RLY NC	주황색(흰 띠)
	14	RLY COM	초록색(흰 띠)
전원	12	PWR +VDC	빨간색
	10	PWR GND	검은색(흰 띠)
RJ-45 (이더넷+PoE)	8	VB2	갈색
	6	VB2	파란색
	4	VB1	초록색
	2	VB1	빨간색

올바른 QR/바코드 인식 방법

사용자에게 QR/바코드를 발급하여 인증 수단으로 사용할 수 있습니다. 인식률을 높이기 위해 화면의 안내에 따라 올바르게 QR/바코드를 스캔하십시오.



- 장치의 QR/바코드 인식부와 QR/바코드 사이의 거리를 5 ~ 20 cm로 유지하십시오.
- 장치의 QR/바코드 인식부와 스캔할 QR/바코드가 수평이 되도록 하고, 가이드 빔이 QR/바코드의 중앙에 오도록 위치시키십시오.
- 모바일 장치에 내려 받은 QR/바코드로 인증할 경우 화면이 잘 보이도록 모바일 장치의 밝기를 조정하십시오.
- 화면의 지시에 따르지 않을 경우 QR/바코드 인식이 오래 걸리거나 실패할 수 있습니다.



- QR/바코드 인식 기능은 XS2-QAPB, XS2-QDPB만 지원합니다.
- QR/바코드는 BioStar 2에서 발급할 수 있습니다. QR/바코드 발급에 대한 자세한 내용은 BioStar 2 관리자 설명서를 참고하십시오.

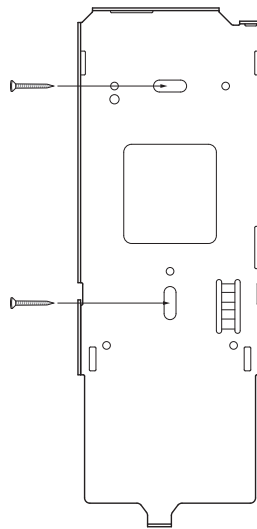
설치

브래킷 및 제품 고정

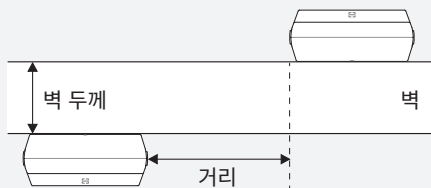


이 문서에서는 XS2-QAPB, XS2-QDPB 모델의 형상을 기준으로 설치 방법을 설명합니다. XS2-APB, XS2-DPB 모델의 경우에도 동일한 방법으로 설치하십시오.

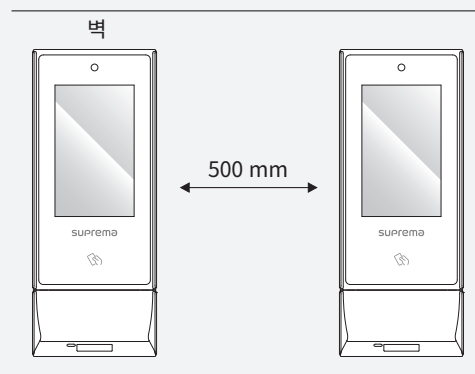
- 1 제공된 드릴링 템플릿을 이용하여 브래킷을 장착할 위치를 정하십시오. X-Station 2를 장착할 위치에 브래킷 고정용 나사를 이용하여 브래킷을 단단히 고정하십시오.



- X-Station 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.

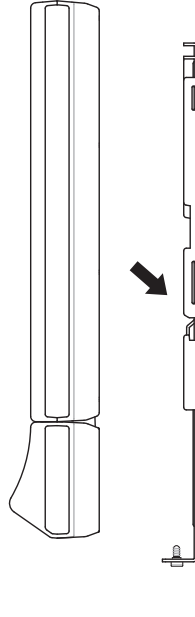


벽 두께	거리
100 mm	500 mm
120 mm	400 mm
150 mm	300 mm

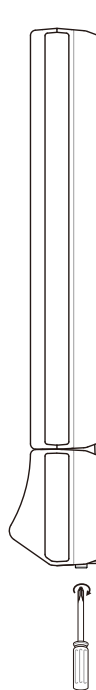


- 모바일 출입카드를 사용할 경우 BLE 신호 간섭을 피하기 위해 장치 사이에 최소 1 m 이상의 거리를 두고 설치하십시오.

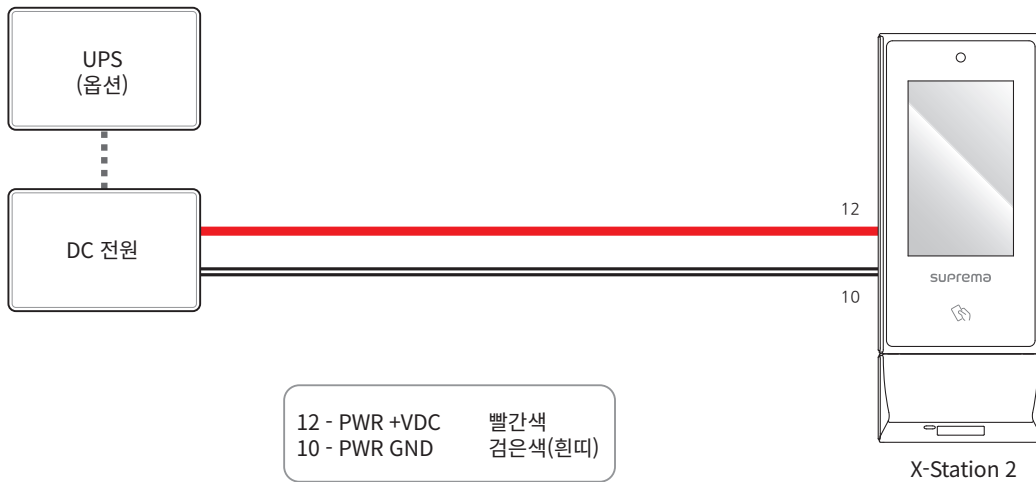
2 케이블 커버를 조립한 뒤 고정된 브래킷 위에 X-Station 2를 장착하십시오.



3 X-Station 2의 제품 고정용 나사를 돌려 X-Station 2와 브래킷을 조립하십시오.



전원 연결



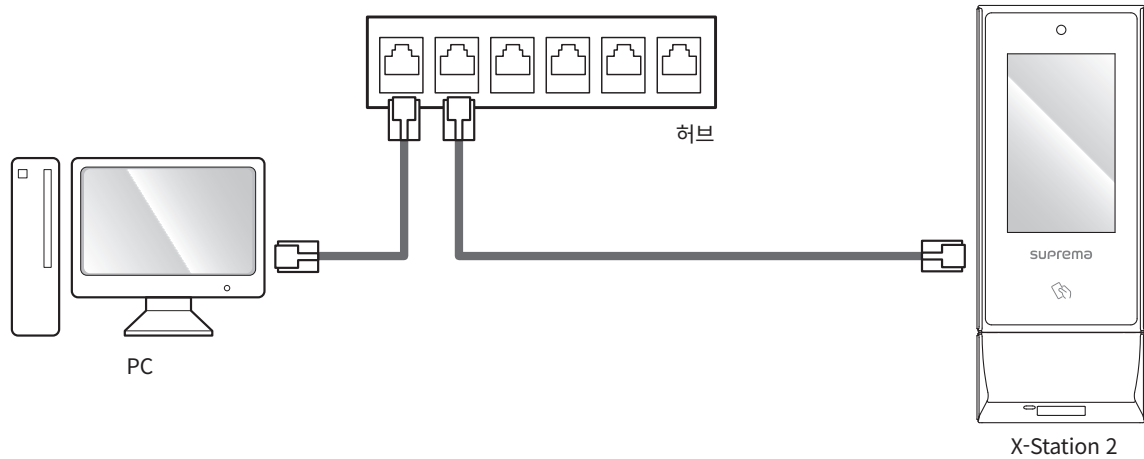
- 전원 어댑터는 DC 12V($\pm 10\%$), 최소 1,500mA 이상 또는 DC 24V($\pm 10\%$), 최소 800mA 이상으로 IEC/EN 60950-1 승인을 받은 제품을 사용하십시오. 전원 어댑터에 다른 기기를 연결하여 사용하려면 단말기의 소모 전력과 다른 기기에 필요한 소모 전력을 합한 전류 용량 이상의 어댑터를 사용해야 합니다.
- Secure I/O 2, 전기정(전기식 잠금장치), 제품은 반드시 개별 전원을 사용하십시오. 전원을 함께 연결하여 사용하면 장치가 오작동할 수 있습니다.
- 전원 장치(또는 어댑터)와 PoE 전원 장치를 함께 연결하지 마십시오.

네트워크 연결

TCP/IP

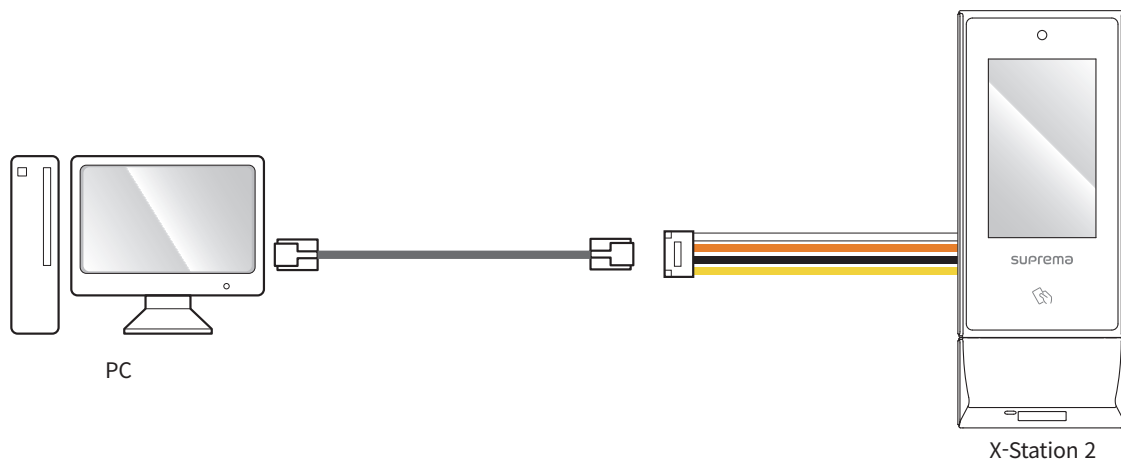
LAN 연결 (허브와 연결)

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

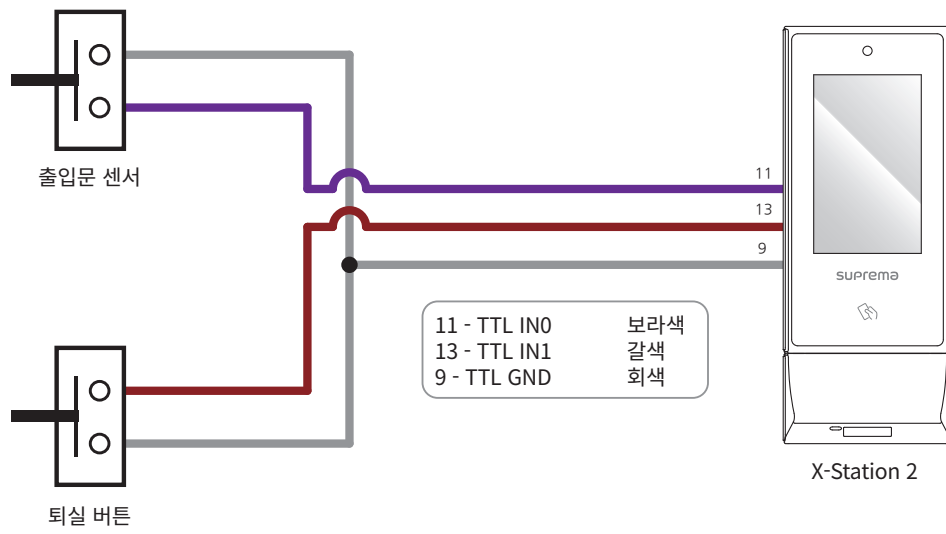


LAN 연결 (PC와 직접 연결)

X-Station 2는 자동 MDI/MDIX 기능을 가지고 있으므로 크로스 케이블이나 일반 스트레이트 타입의 CAT-5 케이블로 PC와 직접 연결할 수 있습니다.



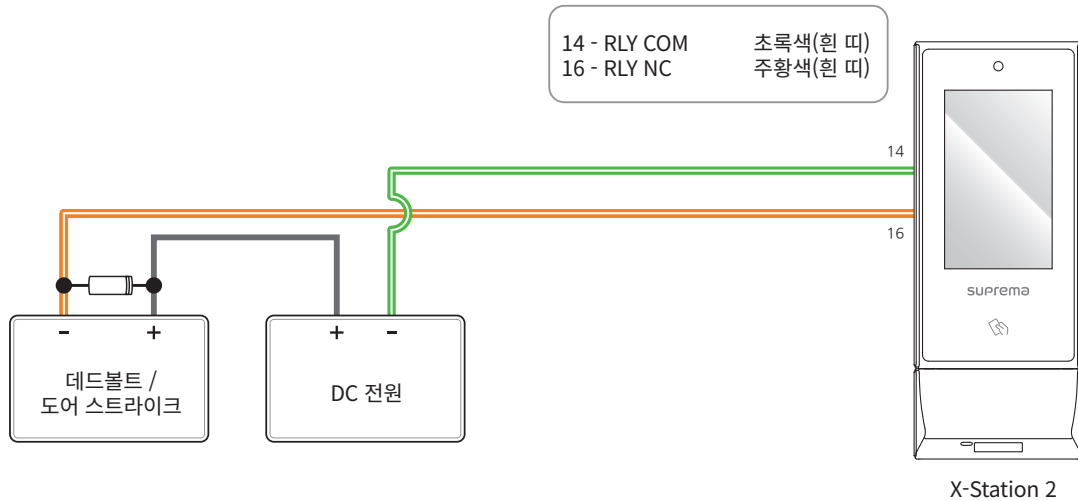
TTL 입력 연결



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.



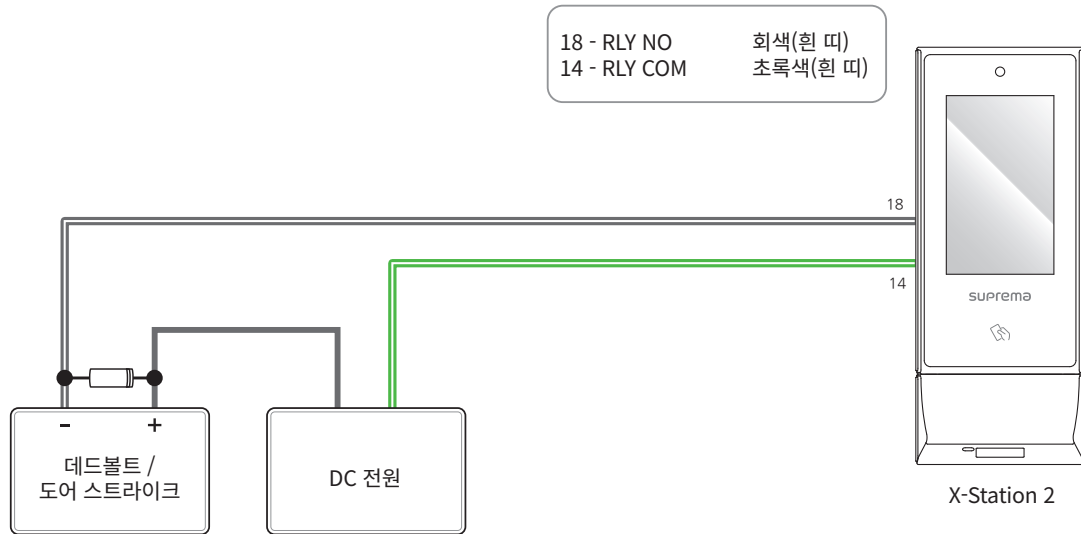
- 출입문 잠금 장치가 작동할 때 발생하는 역전류로부터 릴레이를 보호하기 위해 그림과 같이 출입문 잠금 장치 배선 양쪽에 다이오드를 설치하십시오.
- X-Station 2와 출입문 잠금 장치는 별도의 전원을 사용하십시오.
- 슈프리마의 지능형 장치에는 편의를 제공하기 위해 별도의 컨트롤러 없이 독립형으로 연결하여 출입문을 직접 열거나 잠글 수 있도록 하는 릴레이가 내장되어 있습니다. 그러나 향상된 보안이 요구되는 출입통제 애플리케이션의 경우 잠재적으로 출입문 잠금 해제를 유발할 수 있는 변조 공격을 방지하기 위해 장치에 내장된 릴레이를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



다이오드의 설치 방향에 주의하십시오. 다이오드는 출입문 잠금 장치와 가깝게 설치하십시오.

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.

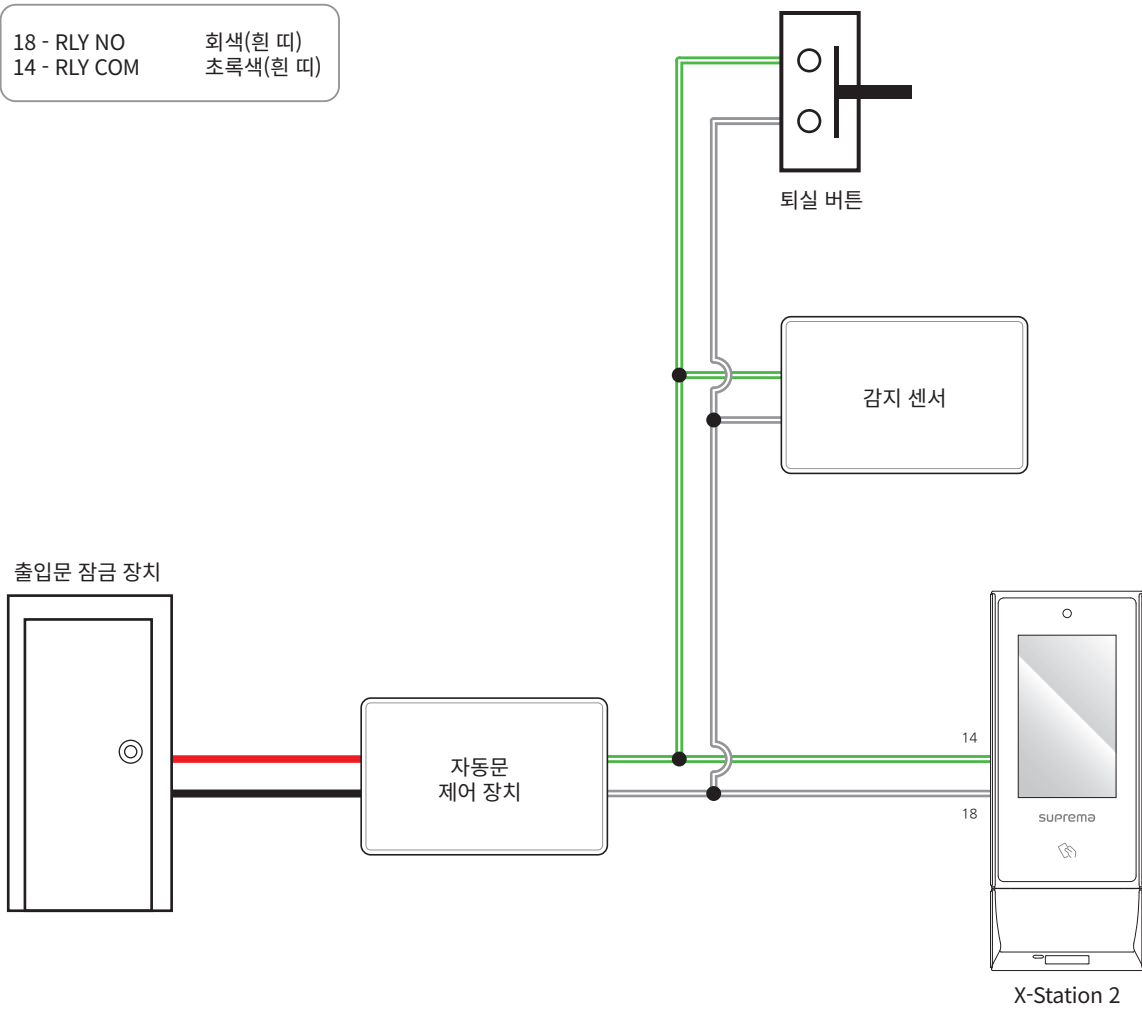


- 출입문 잠금 장치가 작동할 때 발생하는 역전류로부터 릴레이를 보호하기 위해 그림과 같이 출입문 잠금 장치 배선 양쪽에 다이오드를 설치하십시오.
- X-Station 2와 출입문 잠금 장치는 별도의 전원을 사용하십시오.
- 슈프리마의 지능형 장치에는 편의를 제공하기 위해 별도의 컨트롤러 없이 독립형으로 연결하여 출입문을 직접 열거나 잠글 수 있도록 하는 릴레이가 내장되어 있습니다. 그러나 향상된 보안이 요구되는 출입통제 애플리케이션의 경우 잠재적으로 출입문 잠금 해제를 유발할 수 있는 변조 공격을 방지하기 위해 장치에 내장된 릴레이를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



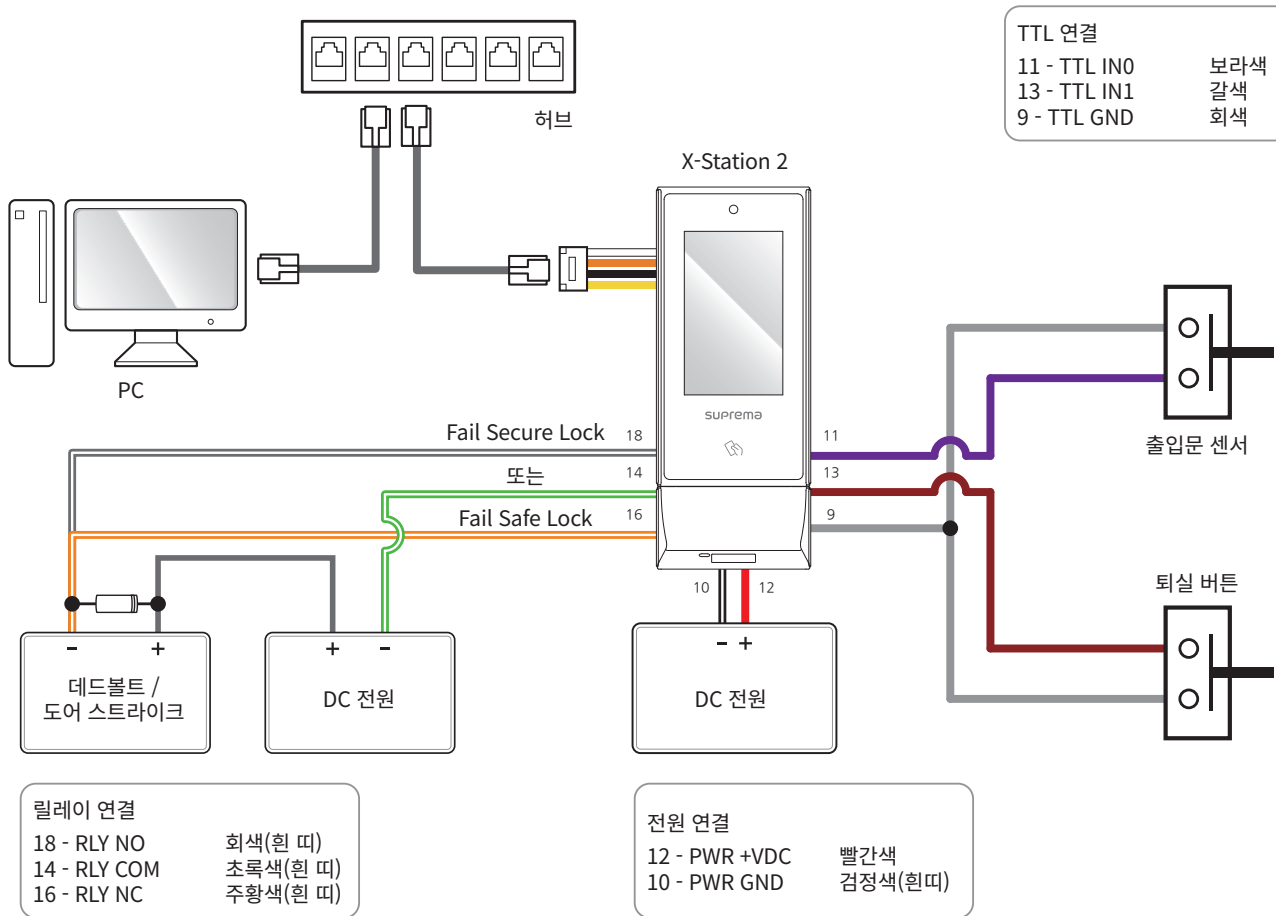
다이오드의 설치 방향에 주의하십시오. 다이오드는 출입문 잠금 장치와 가깝게 설치하십시오.

자동문 연결



독립형 연결

별도의 I/O 장치를 연결하지 않고 X-Station 2를 직접 출입문 잠금 장치, 퇴실 버튼, 출입문 센서 등에 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.

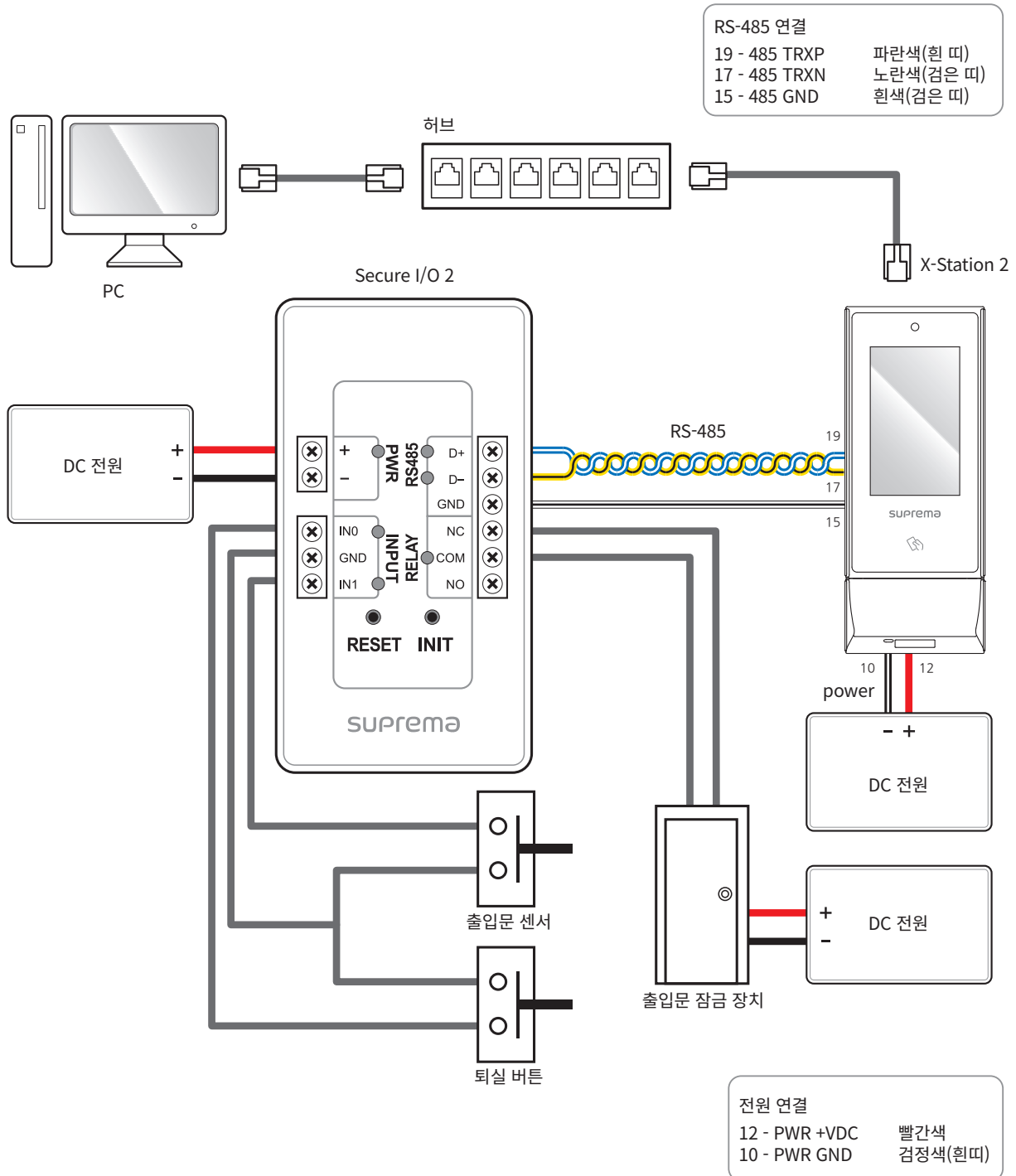


- RS485 케이블로 슬레이브 장치를 연결하여 X-Station 2를 다중 출입문 제어 장치로 사용할 수 있습니다. 슬레이브 장치는 더미 리더로 사용되며 인증은 마스터 장치에서 수행합니다.
- 더 자세한 내용은 슈프리마 기술 지원팀(CS@suprema.co.kr)에 문의하십시오.

Secure I/O 2 연결

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

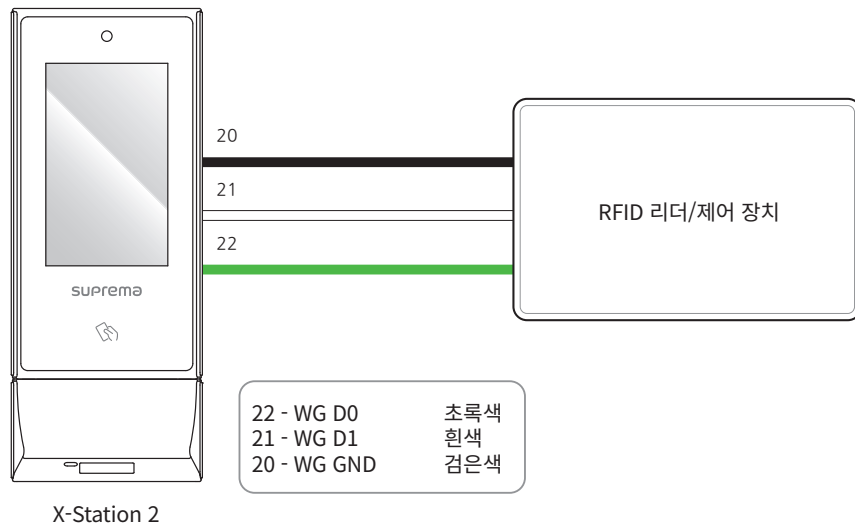
- RS-485 케이블은 AWG24, 꼬임선(Twisted Pair), 최대 길이 1.2 km를 사용하십시오.
- RS-485 데이터 체인으로 연결할 경우 종단 저항(120Ω)을 데이터 체인 연결의 양 끝에 연결하십시오. 중간 선로에 연결할 경우 신호 레벨이 작아져 통신 성능이 떨어지므로 반드시 데이터 체인 연결의 양 끝에 연결하십시오.



- RS485 케이블로 슬레이브 장치를 연결하여 X-Station 2를 다중 출입문 제어 장치로 사용할 수 있습니다. 슬레이브 장치는 더미 리더로 사용되며 인증은 마스터 장치에서 수행합니다.
- 더 자세한 내용은 슈프리마 기술 지원팀(CS@suprema.co.kr)에 문의하십시오.

Wiegand 연결

Wiegand 입력 또는 출력 장치로 사용



제품 사양

구분	항목	규격
크리덴셜	RF 카드	• XS2-DPB, XS2-QDPB: 125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3*, FeliCa • XS2-APB, XS2-QAPB: 125kHz EM, HID Prox & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3*, FeliCa, iCLASS SE/SR/Seos
	RF 인식 거리**	MIFARE, DESFire, iCLASS, HID Prox, EM: 50mm / Felica: 30 mm
	모바일	NFC, BLE
	QR/바코드	지원(XS2-QAPB, XS2-QDPB)
일반	CPU	1.5 GHz Quad Core
	메모리	16 GB Flash + 1 GB RAM
	크립토 칩	지원
	LCD 종류	4" IPS 컬러 LCD
	LCD 해상도	480 x 800
	소리	24 bit
	동작 온도	-20°C ~ 50°C
	보관 온도	-40°C ~ 70°C
	동작 습도	0% ~ 80%, 비응축
	보관 습도	0% ~ 90%, 비응축
	카메라 종류	CMOS 2M 픽셀
	카메라 해상도	1600 x 1200
	치수 (W x H x D)	• XS2-DPB, XS2-APB: 82 mm x 159 mm x 25.9 mm • XS2-QDPB, XS2-QAPB: 82 mm x 203 mm x 33.9 mm
	무게	장치 • XS2-DPB, XS2-APB: 280 g • XS2-QDPB, XS2-QAPB: 343 g 브래킷 • XS2-DPB, XS2-APB: 67 g (와셔 및 볼트 포함) • XS2-QDPB, XS2-QAPB: 88 g (와셔 및 볼트 포함)
	IP 등급	IP65
	인증	KC, CE, FCC (호환: RoHS, REACH, WEEE)
저장 용량	최대 사용자 수	500,000
	최대 카드 수	500,000
	최대 텍스트 로그 수	5,000,000
	최대 이미지 로그 수	50,000
인터페이스	이더넷	지원 (10/100 Mbps, 자동 MDI/MDI-X)
	RS-485	1채널 마스터/슬레이브 (선택 가능)
	Wiegand	1채널 입력/출력 (선택 가능)
	TTL 입력	입력 2채널
	릴레이	1개
	USB	USB 2.0 (Host)
	PoE	지원 (IEEE 802.3af 호환)
	탐퍼	지원

전기 규격	전원	- 장치 전원: DC 12 V (최대 0.8 A) 또는 DC 24 V (최대 0.45 A) - 전원 어댑터 권장 사양: DC 12 V ($\pm 10\%$), 1,500 mA 이상 또는 DC 24 V ($\pm 10\%$), 800 mA 이상***
	스위치 입력 VIH	최소: 3V 최대: 5V
	스위치 입력 VIL	최대: 1V
	스위치 풀업 저항	4.7 k Ω (입력 단자는 4.7 k Ω 으로 풀업 되어 있습니다.)
	Wiegand 출력 VOH	4.8V 이상
	Wiegand 출력 VOL	0.2 V 이하
	Wiegand 출력 풀업 저항	1 k Ω 으로 내부 풀업
	릴레이	2 A @ 30 VDC Resistive load 1 A @ 30 VDC Inductive load

* DESFire EV2/EV3 카드는 DESFire EV1 카드와 하위 호환되므로, DESFire EV1 카드의 기능을 포함하여 CSN 및 스마트 카드 기능이 지원됩니다.

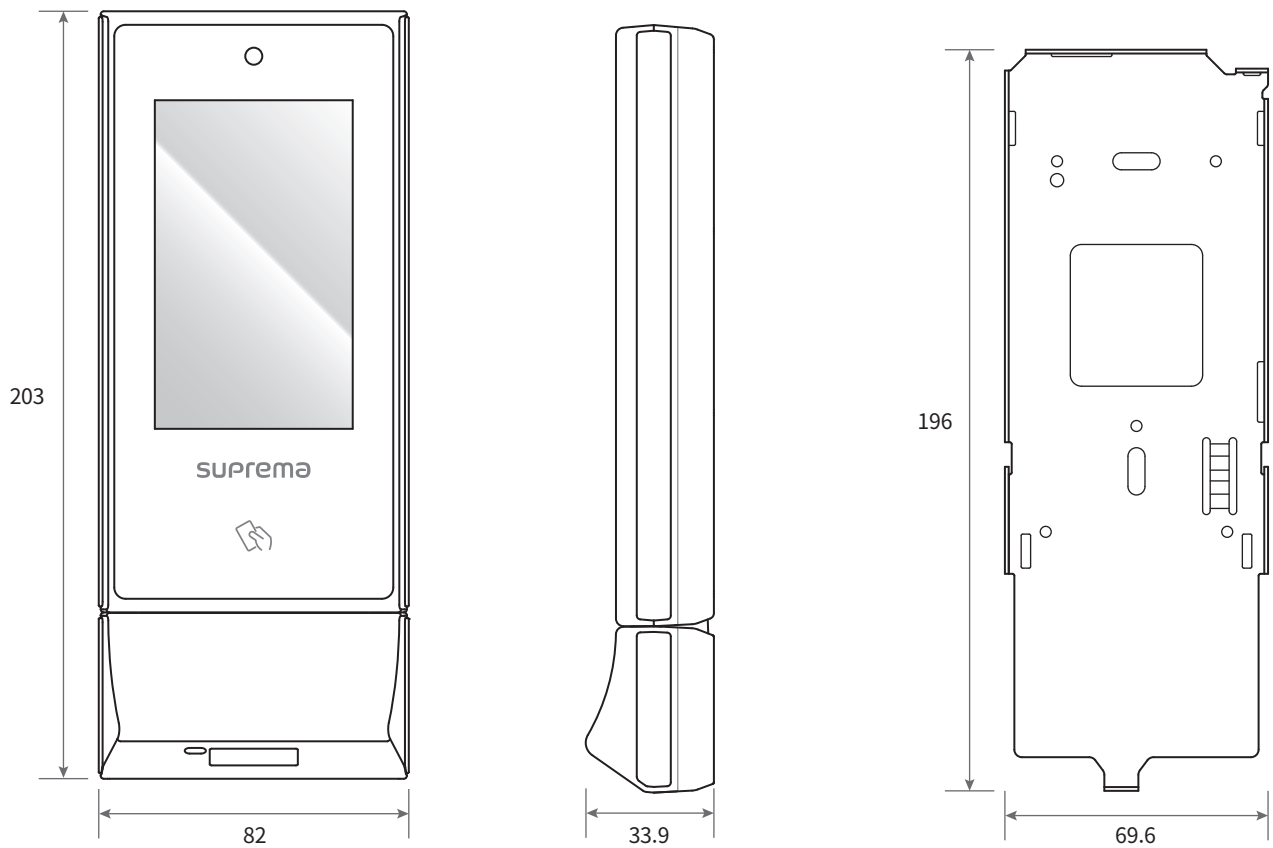
** RF 인식 거리는 설치 환경에 따라 다를 수 있습니다.

*** 전원 어댑터는 별매품입니다. 권장 사양을 확인하십시오.

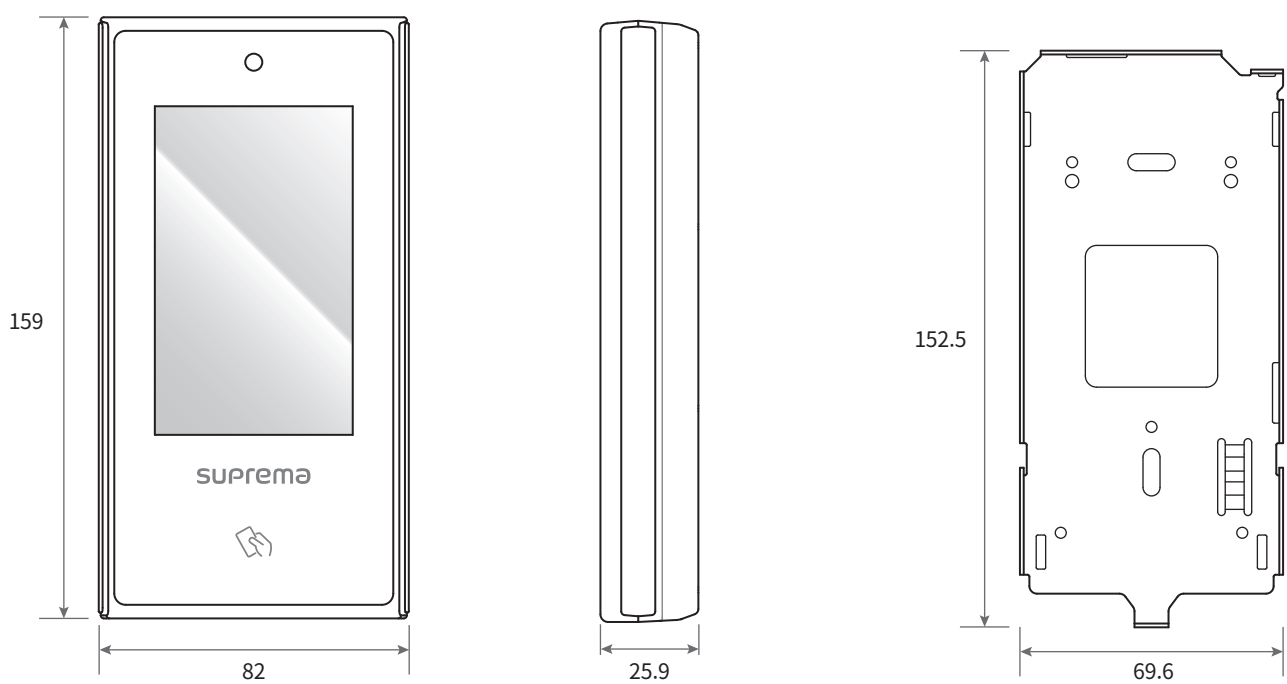
제품 치수

XS2-QAPB, XS2-QDPB

(단위: mm)



XS2-APB, XS2-DPB



FCC 준수 정보

이 기기는 FCC 규제의 Part 15를 준수합니다.
작동은 다음의 두 조건을 따릅니다.

- (1) 이 기기는 해로운 전파 방해를 발생시키지 않습니다.
- (2) 이 기기는 원치 않는 작동을 일으키는 전파 방해를 포함한 어떠한 전파 방해도 수용합니다.



이 기기는 Class A 디지털 기기에 대한 제한 사항을 준수하여 테스트를 거쳤고 FCC규제의 Part 15에 적합하다는 것을 검증받았습니다. 이러한 제한은 주거 설치에서 해로운 전파방해로부터 적절한 수준의 보호를 제공하기 위해 고안되었습니다. 이 장비는 무선 주파수 에너지를 생성, 사용 및 방사하므로 지침에 따라 설치하여 사용하지 않을 경우 무선 통신에서 유해한 간섭을 일으킬 수 있습니다. 그러나 특정한 설치에서는 전파방해가 발생하지 않는다는 어떠한 보장도 하지 않습니다. 본 장비를 켜거나 끌 때 라디오 또는 TV 수신에 해로운 전파방해를 일으키는 경우, 다음 중 하나 이상의 조치를 수행하여 전파방해를 해결하십시오.

- 수신 안테나의 방향을 조정하거나 재설치합니다.
- 장비와 수신기 사이의 간격을 늘립니다.
- 장비를 수신기가 연결된 회로와 다른 회로의 콘센트에 연결합니다.
- 판매업체나 숙련된 라디오/TV 기술자에게 문의합니다.

제조 업체가 승인하지 않은 제품 변경 또는 개조에 대해서는 FCC 규칙에 따라 제품을 사용할 수 있는 권리가 무효화 됩니다.

- 이 제품과 제품의 안테나를 다른 안테나 또는 RF 전송 장치와 함께 설치하지 마십시오.
- 사용자(또는 근처의 다른 사람)와 제품의 안테나간에 최소 20cm의 거리를 유지하십시오.

유럽 연합 적합성 선언 (CE)

이 제품은 라디오 및 통신 단말기 장치 지침(RED) 2014/53/EU의 규정에 따라 CE 마크를 제공합니다.
(주)슈프리마는 이 문서에서 설명하는 장치에 유럽 연합 라디오 및 통신 단말기 장치 지침(RED) 2014/53/EU을 준수하는 CE 마크가 있음을 선언합니다. 이 장치는 지침에 따라 클래스 1 라디오 장치입니다.

- Bluetooth 송신 전력: -0.1 dBm
- Bluetooth 주파수: 2402~2480 MHz
- NFC 주파수: 13.56 MHz
- RFID 주파수: 13.56 MHz + 125 kHz

더 자세한 내용은 아래 연락처로 연락하십시오.
(주)슈프리마

웹 사이트: <https://www.supremainc.com>

주소: 경기도 성남시 분당구 정자일로 248 (정자동 6) 파크뷰타워 17층

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