

CoreStation

설치 가이드

버전 1.09

한국어

KO 101.00.CS-40 V1.09A

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안전을 위한 주의사항

사용자의 위험이나 재산상의 손해를 막기 위해 제품을 사용하기 전에 이 설명서를 반드시 읽고 제품을 안전하고 올바르게 사용하세요. 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 마세요.

- 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 마세요.

- 화재 또는 감전의 원인이 됩니다.

제품을 전열기 등으로 인해 열이 발생하는 장소에 설치하지 마세요.

- 과열로 인한 화재 또는 감전의 원인이 됩니다.

물기가 있는 곳에 설치하지 마세요.

- 습기로 인한 감전 또는 제품 손상의 원인이 됩니다.

전자파 장애가 있는 곳에 설치하지 마세요.

- 감전 또는 제품 손상의 원인이 됩니다.

사용

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

- 화재, 감전, 제품 손상의 원인이 됩니다.

손상된 전원 어댑터나 플러그, 헐거운 콘센트는 사용하지 마세요.

- 접촉이 불안정할 경우 화재 또는 감전의 원인이 됩니다.

전원 코드를無理하게 구부리거나 망가뜨리지 마세요.

- 화재 또는 감전의 원인이 됩니다.



주의

설치

제품을 직사광선이나 자외선에 직접 노출된 장소에 설치하지 마세요.

- 제품 손상, 오작동 및 변색, 변형의 원인이 됩니다.

전원 케이블 등을 통행 장소에 방치하지 마세요.

- 신체 상해 또는 제품 손상의 원인이 됩니다.

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

- 고장의 원인이 됩니다.

전원 어댑터는 IEC/EN 62368-1 승인을 받은 제품으로 단말기의 소모 전력 이상의 제품을 사용하세요. 슈프리마에서 판매하는 전원 어댑터를 사용할 것을 권장합니다.

- 적합한 전원을 사용하지 않을 경우 장치가 오작동할 수 있습니다.
- 최대 소모전류 규격은 제품 사양의 **전원**을 참고하세요.

사용

제품을 떨어뜨리거나 충격을 주지 마세요.

- 고장의 원인이 됩니다.

제품의 펌웨어 업그레이드 진행 중 전원 공급이 중단되지 않도록 주의하세요.

- 고장의 원인이 됩니다.

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

- 고장의 원인이 됩니다.

제품을 0 °C ~ 50 °C 이내에서 사용하고 너무 낮거나 높은 온도에서 보관하지 마세요.

- 고장의 원인이 됩니다.

제품을 청소할 때 주의하세요.

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

제품을 원래 용도 이외 다른 용도로 사용하지 마세요.

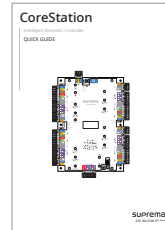
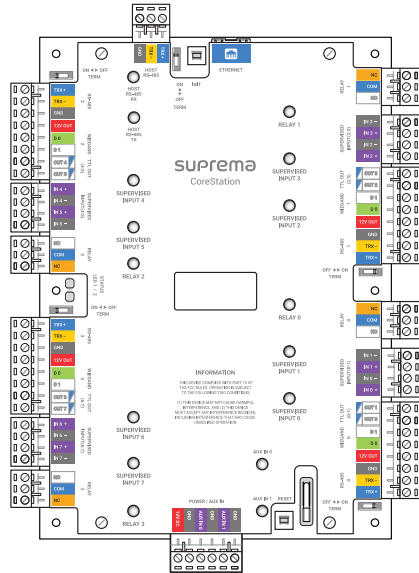
- 고장의 원인이 됩니다.

RTC 배터리

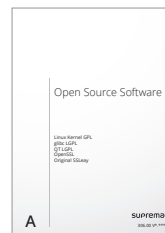
승인되지 않거나 잘못된 종류의 배터리로 교체하면 폭발의 위험이 있습니다. 배터리는 거주 지역 또는 국제 폐기물 규정에 따라 폐기하세요.

시작하기

구성품

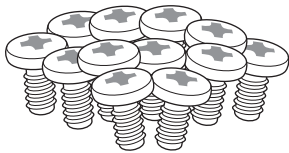


퀵 가이드

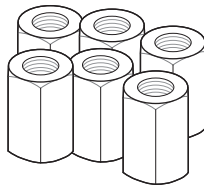


CoreStation

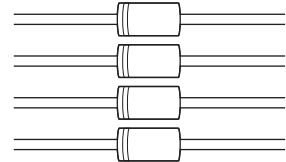
오픈소스라이선스 가이드



고정용 나사 x12



스페이스 x6



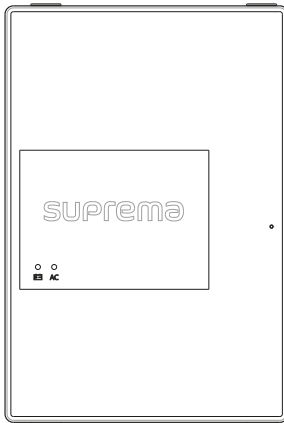
다이오드 x4



구성품은 설치 환경에 따라 달라질 수 있습니다.

액세서리

CoreStation은 액세서리로 함체(ENCR-10)를 함께 구매할 수 있습니다. 함체에는 전원 상태 LED 보드, 전원 분배 보드, 전원 공급 장치, 탬퍼가 포함되어 있습니다. CoreStation을 함체에 설치하는 방법은 [함체 설치](#)를 참고하세요.

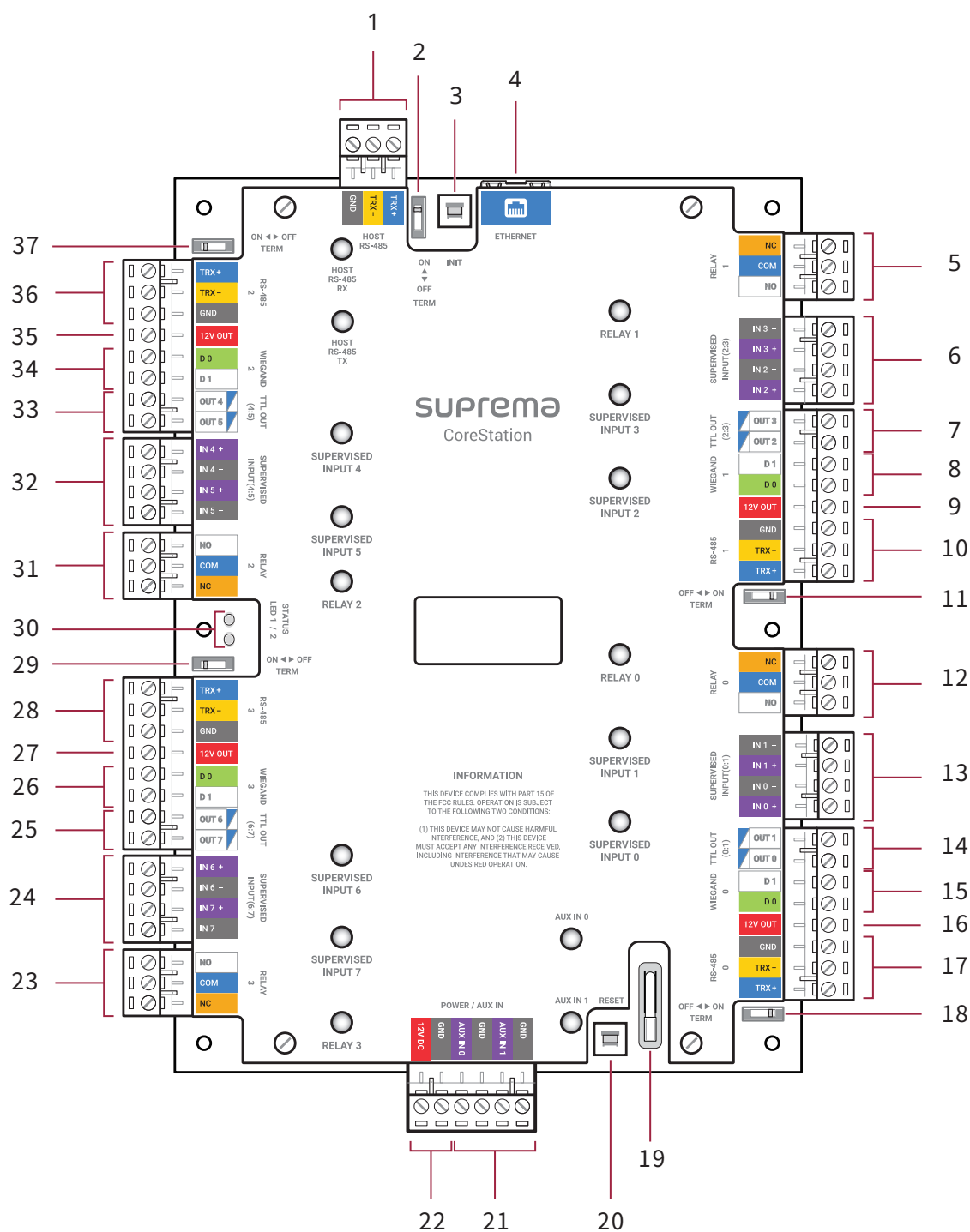


ENCR-10



- ENCR-10은 벽에 고정하여 사용할 수 있도록 설계되었습니다. 설치 높이에 제한 없이 안전하고 사용하기에 편리한 위치에 설치하세요.
- ENCR-10 구성품에는 함체 고정용 나사, CoreStation 고정용 나사, 전원 장치 연결용 나사가 포함되어 있습니다. 각 나사의 용도에 맞추어 올바르게 사용하세요.
 - 함체 고정용 나사(직경: 4 mm, 길이: 25 mm) x 4
 - CoreStation 고정용 나사(직경: 3 mm, 길이: 5 mm) x 6
 - 전원 장치 케이블 고정용 나사(직경: 3 mm, 길이: 8 mm) x 1

각 부분의 명칭 및 기능



No.	이름	No.	이름
1	HOST RS-485 연결	20	RESET 버튼
2	HOST RS-485 종단 저항 스위치	21	AUX IN (0, 1) 연결
3	INIT 버튼	22	CoreStation 전원 연결(DC 12V IN)
4	이더넷 연결	23	릴레이 3 연결
5	릴레이 1 연결	24	TTL 입력 (6, 7) 또는 Supervised Input (6, 7) 연결
6	TTL 입력 (2, 3) 또는 Supervised Input (2, 3) 연결	25	TTL 출력 (6, 7) 연결
7	TTL 출력 (2, 3) 연결	26	Wiegand 3 연결
8	Wiegand 1 연결	27	12VDC 출력
9	12VDC 출력	28	RS-485 3 연결
10	RS-485 1 연결	29	RS-485 3 종단 저항 스위치
11	RS-485 1 종단 저항 스위치	30	CoreStation 상태 LED
12	릴레이 0 연결	31	릴레이 2 연결
13	TTL 입력 (0, 1) 또는 Supervised Input (0, 1) 연결	32	TTL 입력 (4, 5) 또는 Supervised Input (4, 5) 연결
14	TTL 출력 (0, 1) 연결	33	TTL 출력 (4, 5) 연결
15	Wiegand 0 연결	34	Wiegand 2 연결
16	12VDC 출력	35	12VDC 출력
17	RS-485 0 연결	36	RS-485 2 연결
18	RS-485 0 종단 저항 스위치	37	RS-485 2 종단 저항 스위치
19	RTC 배터리		



- 장치와 연동된 CoreStation을 초기화한 뒤 다른 장치에 연결하려면 INIT 버튼을 2초 이상 누르세요.
- CoreStation과 Wiegand 장치를 연결할 때 Wiegand 장치의 전원으로 CoreStation의 전원 출력(12V, 최대 1.5A)을 사용할 수 있습니다. 200mA를 소모하는 Wiegand 장치를 3대 연결하면 남아 있는 전원 출력 단자에 최대 900mA를 소모하는 장치를 연결할 수 있습니다.
- RTC 배터리 용량은 226mah이며, 기대 수명은 설치 환경 및 동작 방법에 따라 다를 수 있습니다. RTC 배터리 교체 시에는 CR2032를 준수하세요.

통신 상태 LED

LED	상태
HOST RS-485 TX	주황색 점멸: RS-485 데이터를 송신 중인 상태
HOST RS-485 RX	초록색 점멸: RS-485 데이터를 수신 중인 상태
RELAY (0 ~ 3)	빨간색 점등: 릴레이 동작
SUPERVISED INPUT (0 ~ 7)	TTL 입력을 사용할 때 - 초록색 점등: Normal Close - 꺼짐: Normal Open Supervised Input을 사용할 때 - 초록색 점등: Normal Close(합선), Normal Open, 스위치 켜짐 - 꺼짐: 스위치 꺼짐
AUX IN (0, 1)	주황색 점등: AUX 신호를 수신 중인 상태

출입통제 등급

기능	등급
Destructive Attack	I
Line Security	I
Endurance	IV
Standby Power	I
Single Point Locking Device with Key Locks	I

CoreStation 상태 LED

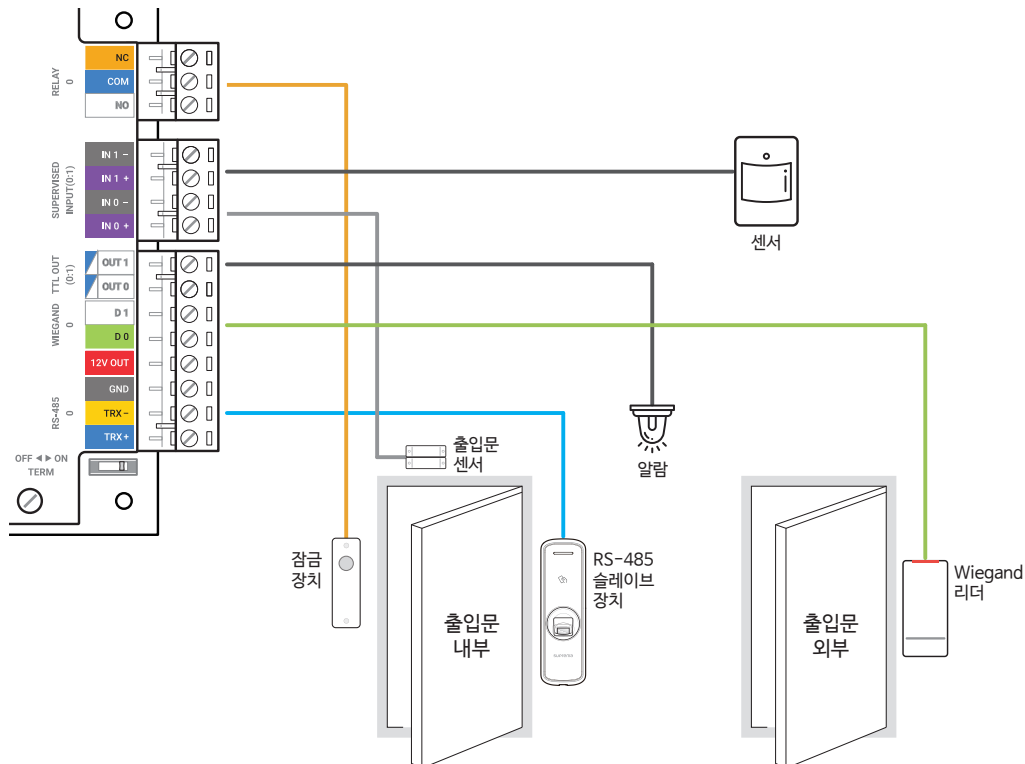
CoreStation의 상태는 제품 전면부의 왼쪽에 위치한 STATUS LED 1 / 2로 확인할 수 있으며, 이더넷, RS-485 0, RS-485 1, RS-485 2, RS-485 3, RS-485 HOST, 시스템의 상태를 1초씩 순서대로 보여줍니다.

항목	LED 1	LED 2	상태
이더넷	빨간색	빨간색	유동 IP 연결 실패
	빨간색	노란색	유동 IP 연결 대기 중
	빨간색	하늘색	고정 IP 연결 성공
	빨간색	파란색	유동 IP 연결 성공
	빨간색	자홍색	고정 IP 연결 실패
	빨간색	꺼짐	HW 오류
RS-485 0	노란색	빨간색	슬레이브 장치 없음
	노란색	노란색	슬레이브 장치 연결 해제
	노란색	파란색	슬레이브 장치 정상
	노란색	꺼짐	HW 오류
RS-485 1	초록색	빨간색	슬레이브 장치 없음
	초록색	노란색	슬레이브 장치 연결 해제
	초록색	파란색	슬레이브 장치 정상
	초록색	꺼짐	HW 오류
RS-485 2	하늘색	빨간색	슬레이브 장치 없음
	하늘색	노란색	슬레이브 장치 연결 해제
	하늘색	파란색	슬레이브 장치 정상
	하늘색	꺼짐	HW 오류
RS-485 3	파란색	빨간색	슬레이브 장치 없음
	파란색	노란색	슬레이브 장치 연결 해제
	파란색	파란색	슬레이브 장치 정상
	파란색	꺼짐	HW 오류
RS-485 HOST	자홍색	빨간색	슬레이브 장치 없음
	자홍색	노란색	슬레이브 장치 연결 해제
	자홍색	파란색	슬레이브 장치 정상
	자홍색	꺼짐	HW 오류
시스템	흰색	빨간색	시스템 잠금 (장치의 작업 조건 및 동작)
	흰색	노란색	시스템 잠금 (BioStar 2의 작업 조건 및 동작)
	흰색	초록색	BioStar 2 연결 성공
	흰색	하늘색	BioStar 2 연결 성공 + 탬퍼 켜짐
	흰색	파란색	탐퍼 켜짐
	흰색	자홍색	시스템 잠금 (장치의 작업 조건 및 동작) + 탬퍼 켜짐
	흰색	흰색	시스템 잠금 (BioStar 2의 작업 조건 및 동작) + 탬퍼 켜짐
	자홍색	자홍색	데이터베이스 마이그레이션 동작 중

설치 예제

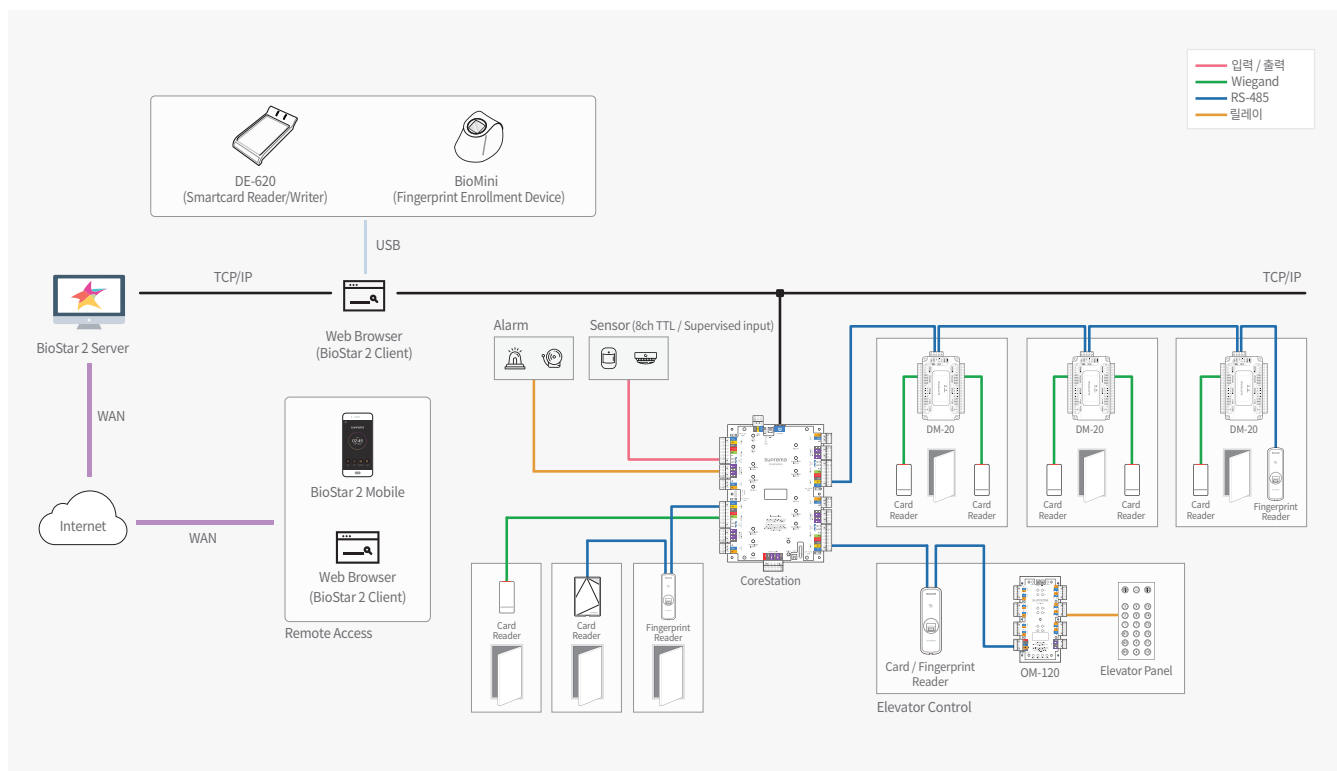
CoreStation은 바이오메트릭 인증을 수행할 수 있는 중앙 집중식 출입통제 시스템입니다. 엔터프라이즈급 시스템용으로 설계된 CoreStation은 최대 500,000 명의 사용자 정보를 저장할 수 있으며, 초당 400,000 지문 매칭을 수행할 수 있습니다.

BioStar 2와 연동하여 출입통제와 근태관리를 모두 사용할 수 있으며, RS-485(OSDP), Wiegand, Supervised input, AUX와 같은 다양한 인터페이스를 제공합니다.



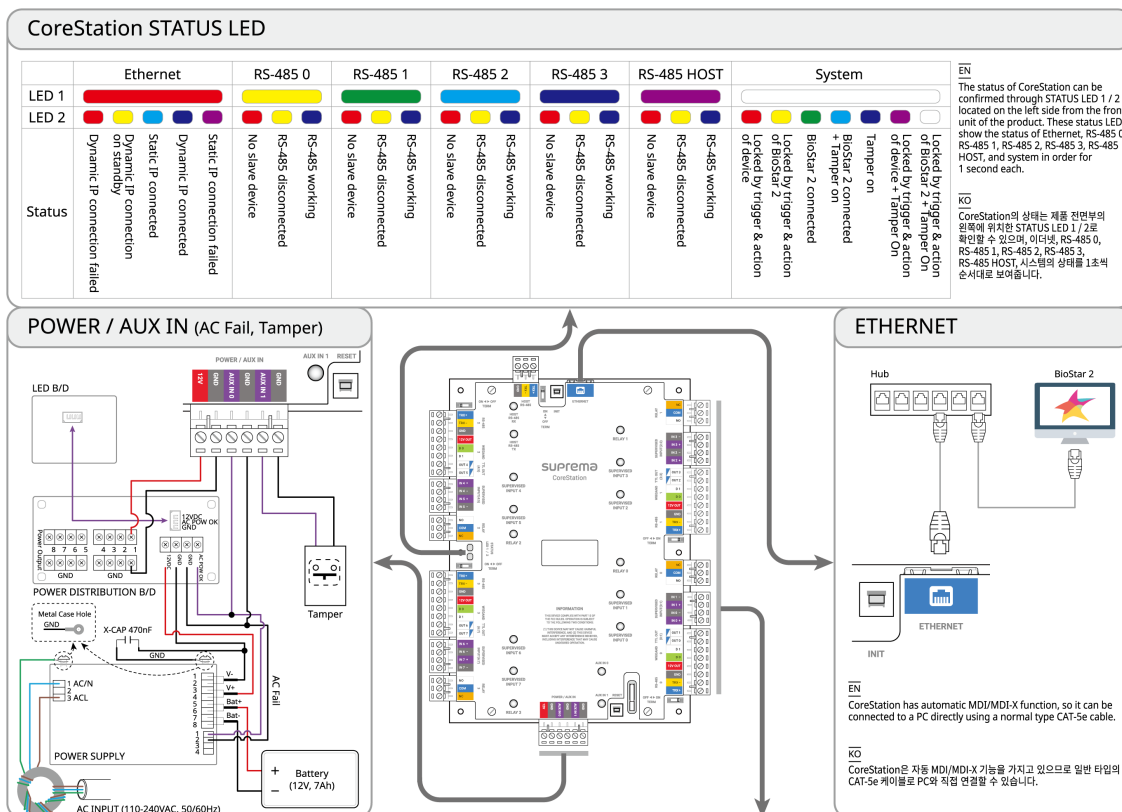
시스템 구성도

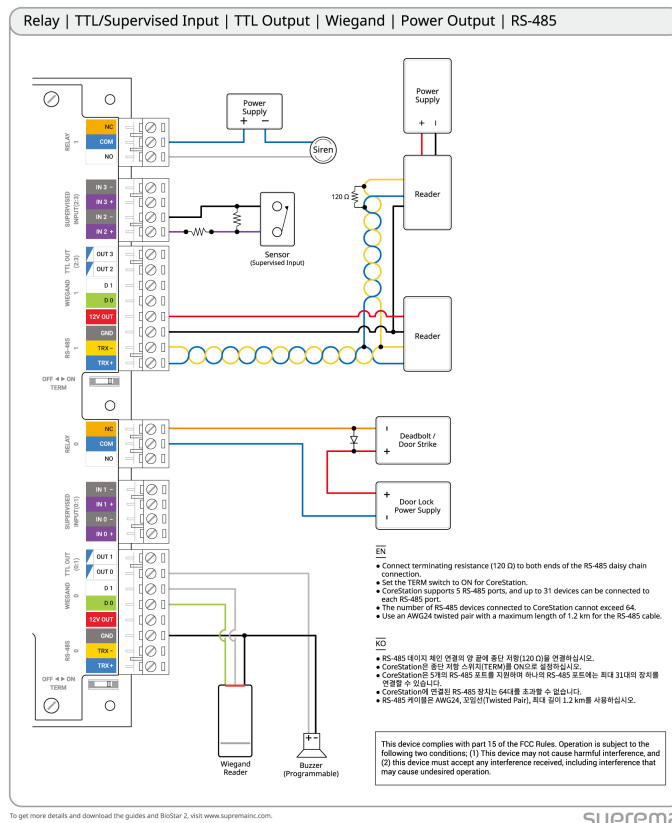
CoreStation은 RS-485 장치를 최대 64대까지 연결할 수 있으며, DM-20을 데이지 체인으로 연결하면 Wiegand 장치를 132대까지 확장할 수 있습니다.



전체 연결 구성도

안정적인 CoreStation의 사용을 위해 전용 합체를 사용할 것을 권장합니다. 합체에는 LED 제어 보드, 전원 제어 보드, 전원 장치, 배터리, 탬퍼가 포함되어 있습니다.





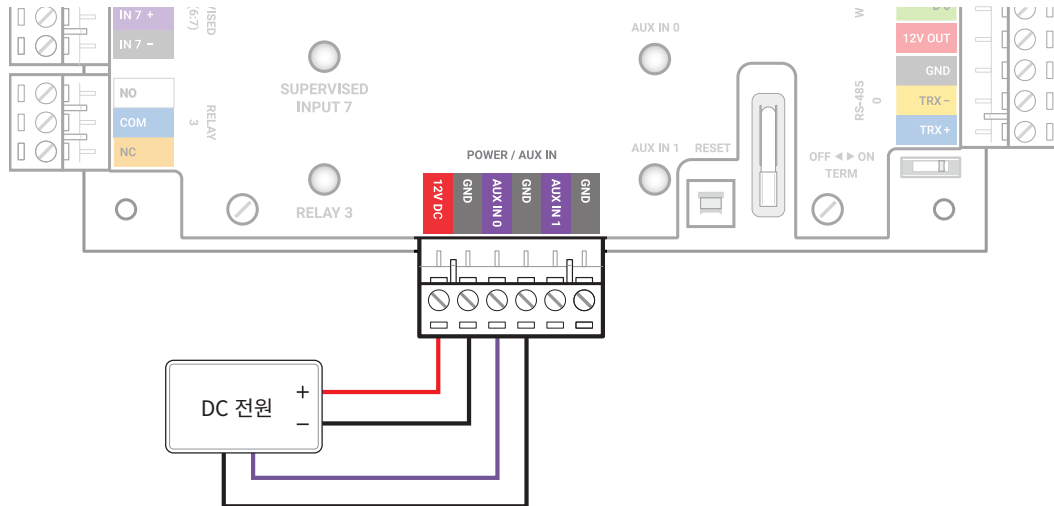
- A 스위치로 제어되는 소켓에 연결하지 마세요.

설치

- ## 설치



전원 연결



- 출입 통제 장치와 CoreStation에 연결하는 전원은 반드시 분리하여 사용하세요.
- 전원 어댑터는 IEC/EN 62368-1 승인을 받은 제품으로 단말기의 소모 전력 이상의 제품을 사용하세요. 전원 어댑터에 다른 기기를 연결하여 사용하려면 단말기의 소모 전력과 다른 기기에 필요한 소모 전력을 합한 전류 용량 이상의 어댑터를 사용해야 합니다.
 - 최대 소모전류 규격은 제품 사양의 **전원**을 참고하세요.
- 전원 어댑터를 사용할 경우 전원 케이블의 길이를 임의로 연장하지 마세요.



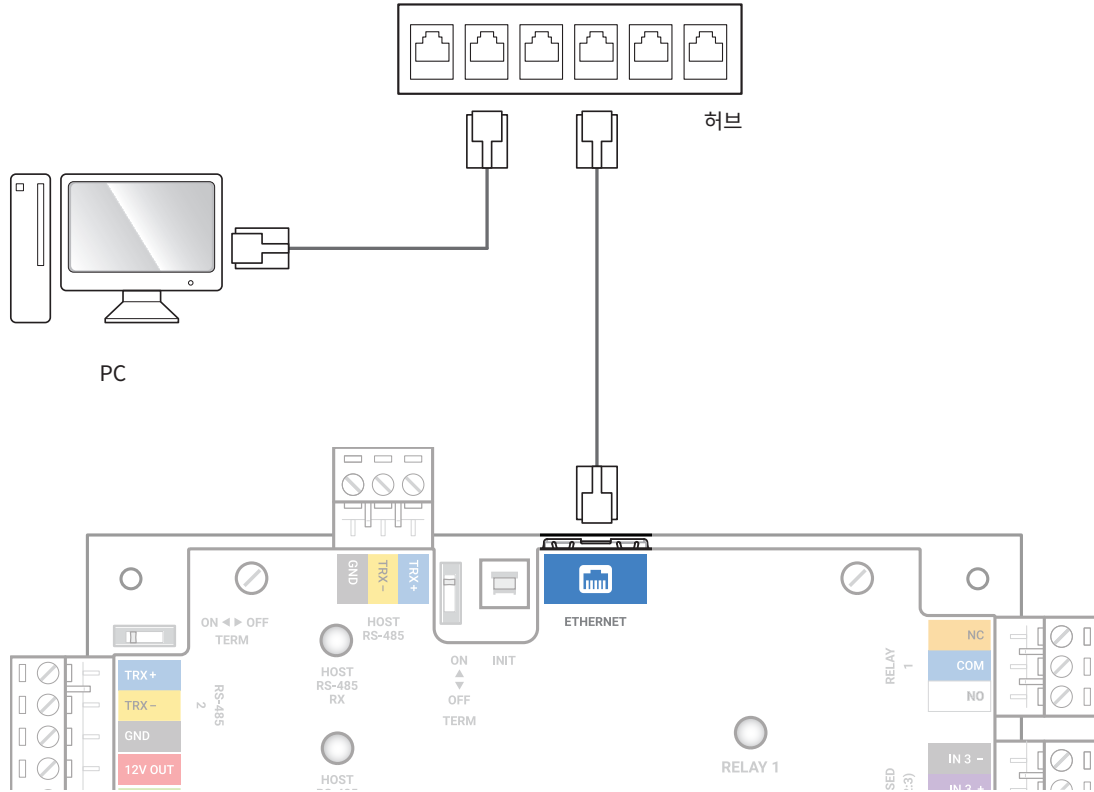
- 전원 장애를 막기 위해 무정전 전원 장치(UPS)를 연결하여 사용할 것을 권장합니다.

네트워크 연결

TCP/IP

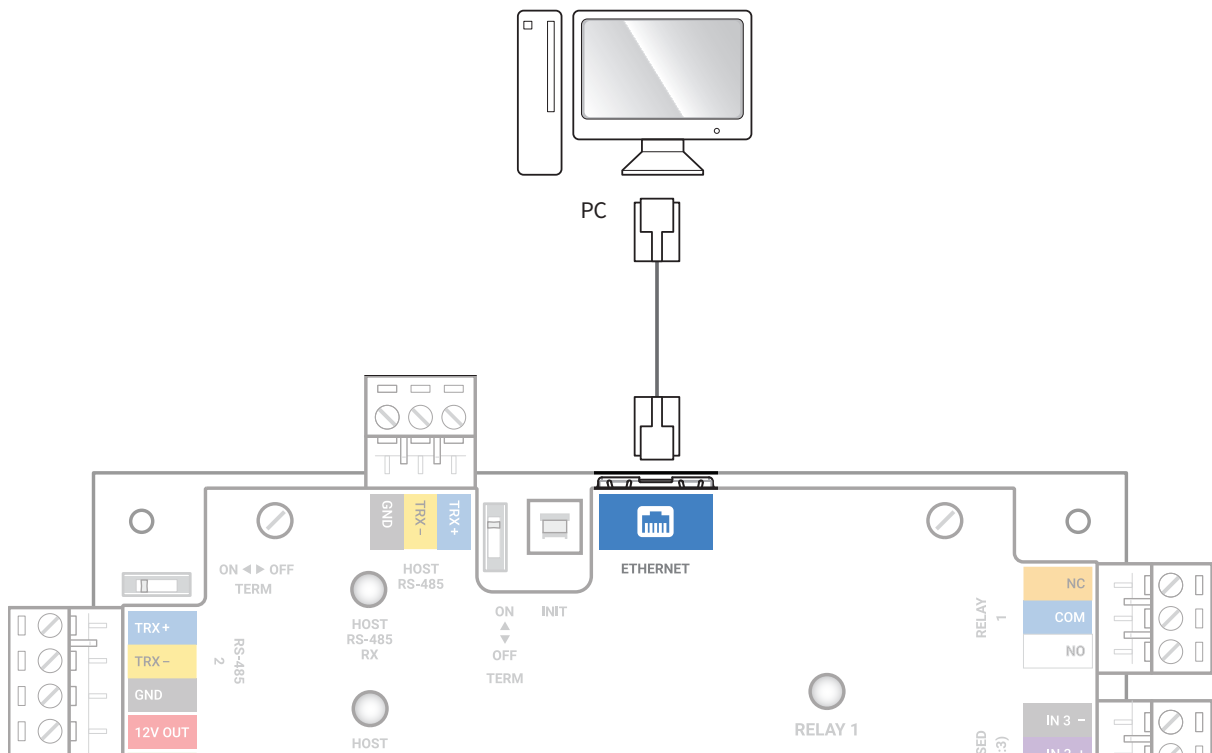
LAN 연결 (허브와 연결)

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



LAN 연결 (PC와 직접 연결)

CoreStation은 자동 MDI/MDI-X 기능을 가지고 있으므로 일반 타입의 CAT-5e 케이블로 PC와 직접 연결할 수 있습니다.

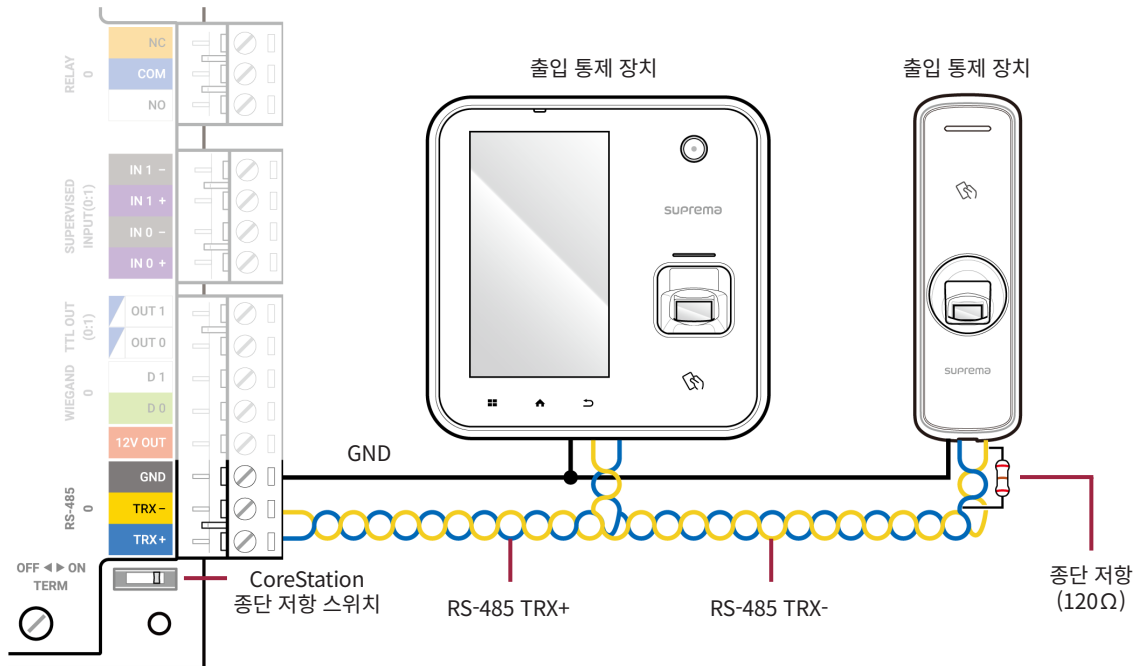


RS-485 연결

CoreStation은 5개의 RS-485 포트를 지원하며 하나의 RS-485 포트에는 최대 31대의 장치를 연결할 수 있습니다.



- CoreStation에 연결된 RS-485 장치는 64대를 초과할 수 없습니다.
- RS-485 케이블은 AWG24, 꼬임선(Twisted Pair), 최대 길이 1.2 km를 사용하세요.
- RS-485 데이터 체인 연결의 양 끝에 종단 저항(120 Ω)을 연결하세요. 중간 선로에 연결할 경우 신호 레벨이 작아져 통신 성능이 떨어지므로 반드시 데이터 체인 연결의 양 끝에 연결하세요. CoreStation은 종단 저항 스위치를 ON으로 설정하세요.



- RS-485 케이블은 AWG26 이상을 사용해야 하며, 모든 배선은 ANSI/NFPA 70 표준을 준수해야 합니다.

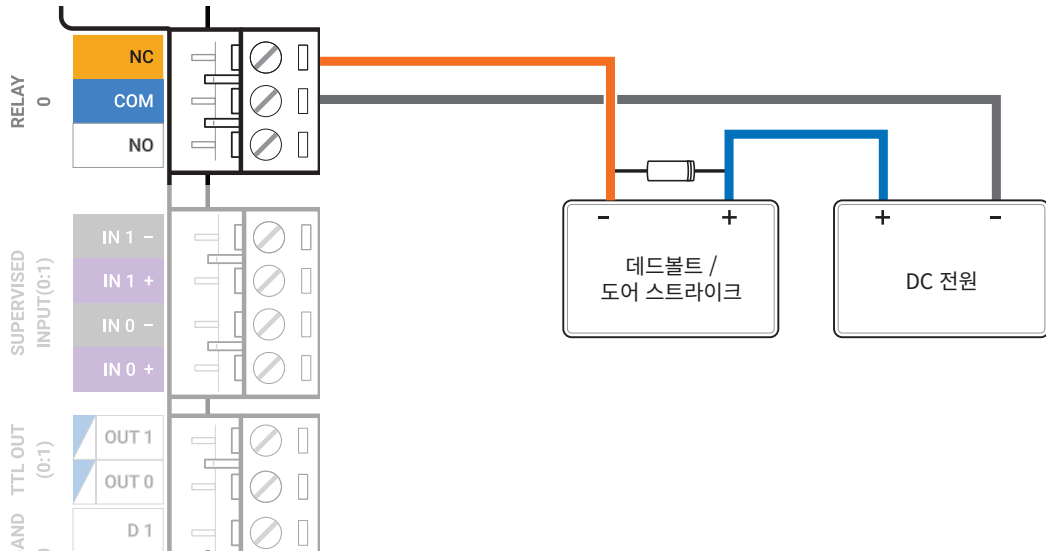
릴레이 연결

Fail Safe Lock

Fail Safe Lock을 사용하려면 아래 그림과 같이 N/C 릴레이를 연결하세요. 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.



데드볼트(Deadbolt)나 도어 스트라이크(Door Strike) 설치 시 다이오드를 아래 그림과 같이 전원 입력 양단에 연결하세요. 다이오드 방향에 주의하여 반드시 Cathode(줄무늬 방향)를 전원의 + 부분에 연결하세요.

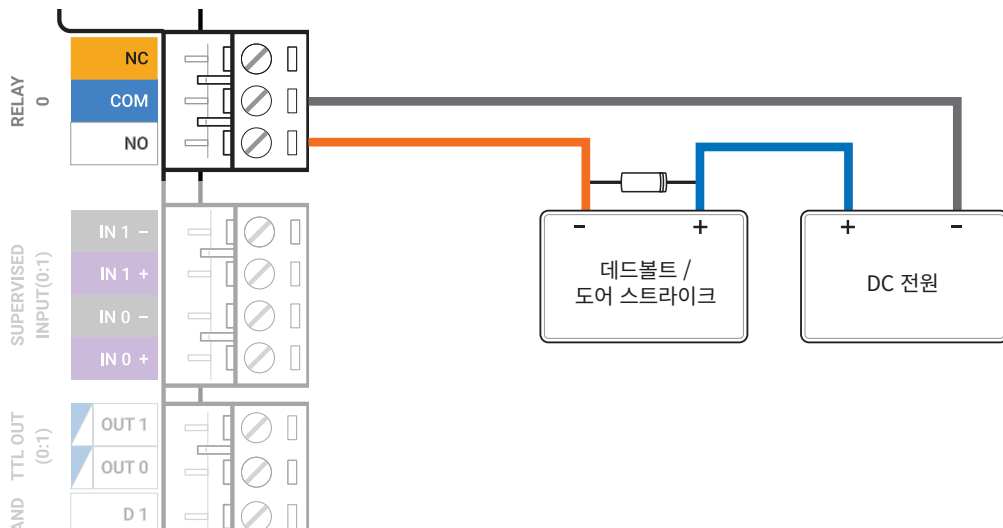


Fail Secure Lock

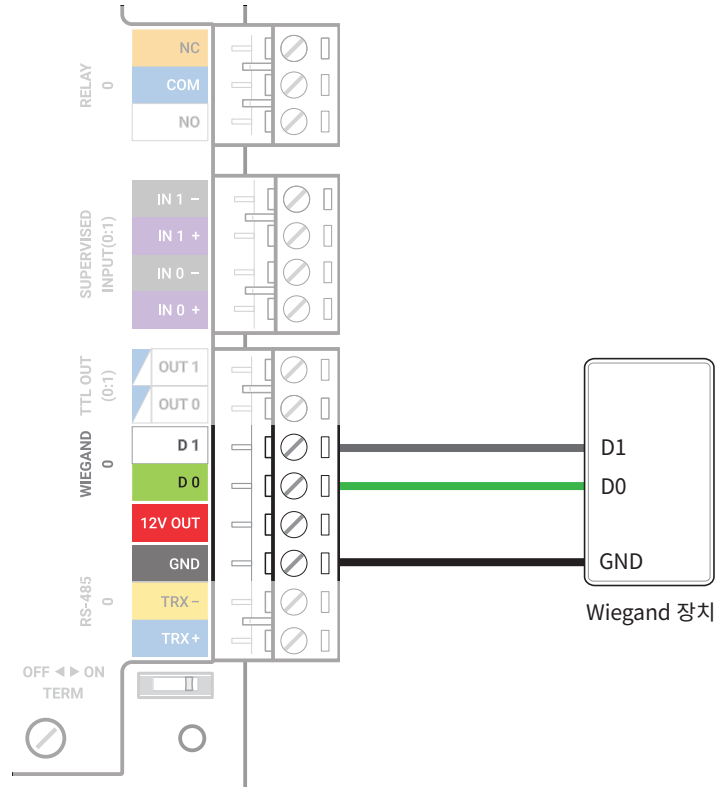
Fail Secure Lock을 사용하려면 아래 그림과 같이 N/O 릴레이를 연결하세요. Fail Secure Lock은 정상 시 릴레이 회로에 전류가 흐르지 않으며, 릴레이가 동작하여 전류가 흐르면 출입문이 열립니다. 정전이 되거나 외부 요인으로 장치의 전원이 끊길 경우 출입문이 잠깁니다.



데드볼트(Deadbolt)나 도어 스트라이크(Door Strike) 설치 시 다이오드를 아래 그림과 같이 전원 입력 양단에 연결하세요. 다이오드 방향에 주의하여 반드시 Cathode(줄무늬 방향)를 전원의 + 부분에 연결하세요.

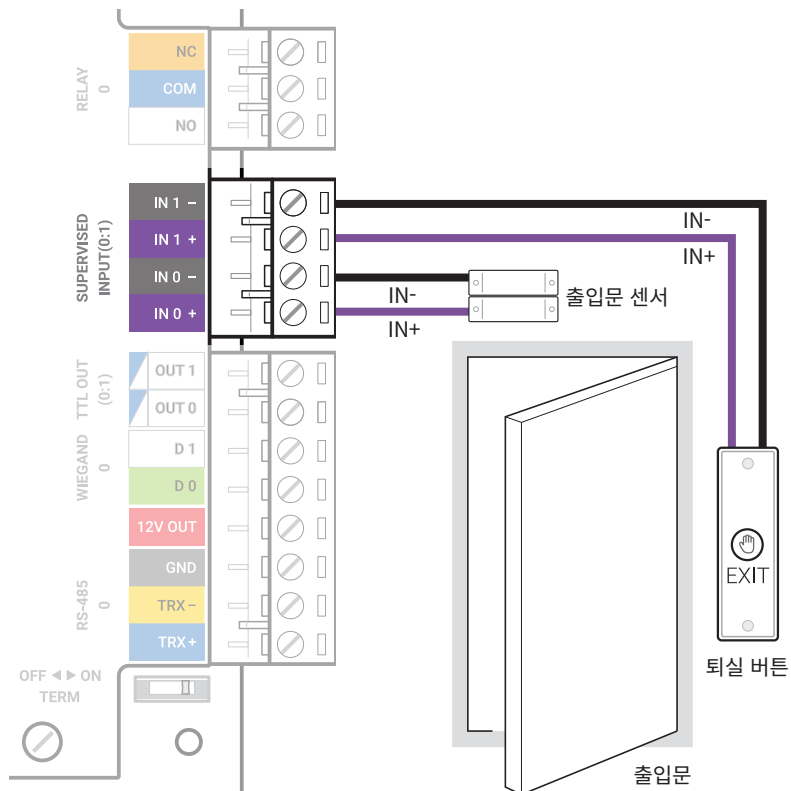


Wiegand 입력 연결



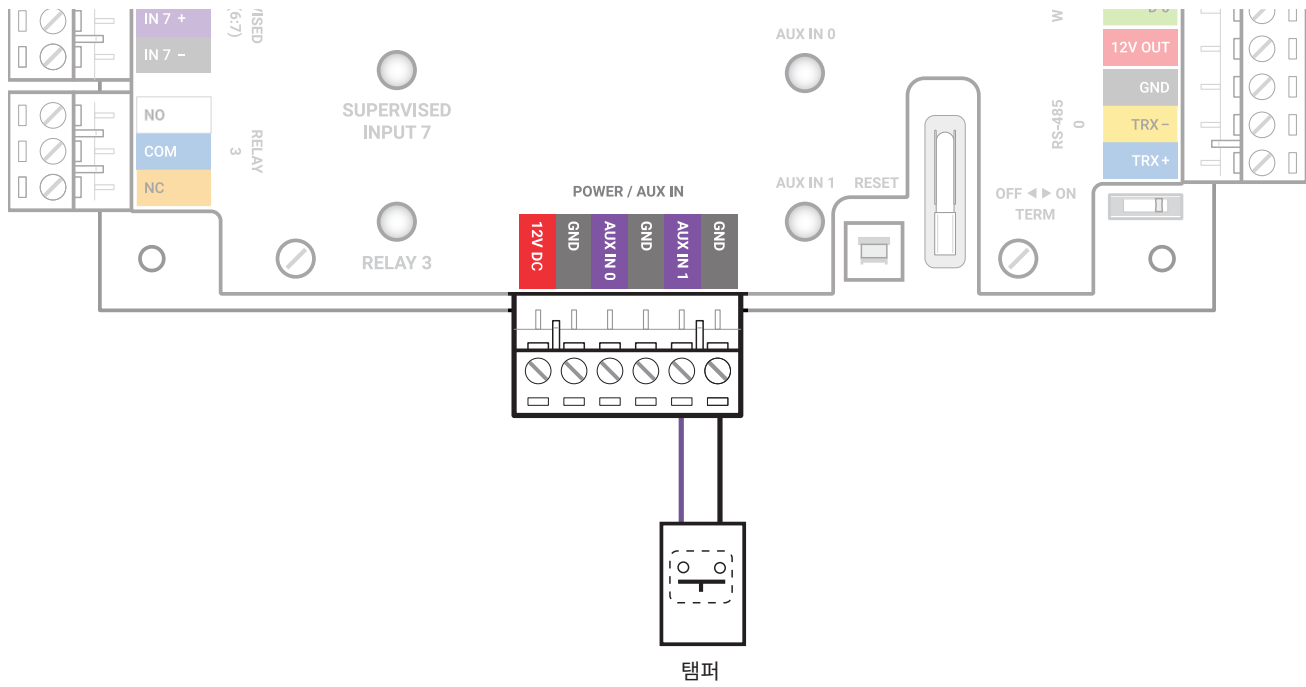
출입문 센서 및 퇴실 버튼 연결

SUPERVISED INPUT 0 ~ 7 단자는 일반적인 TTL 입력으로 사용하거나 Supervised Input으로 사용하도록 설정할 수 있습니다.



AUX 입력 연결

전원 장애 감지거나 탬퍼를 AUX IN 단자에 연결할 수 있습니다.

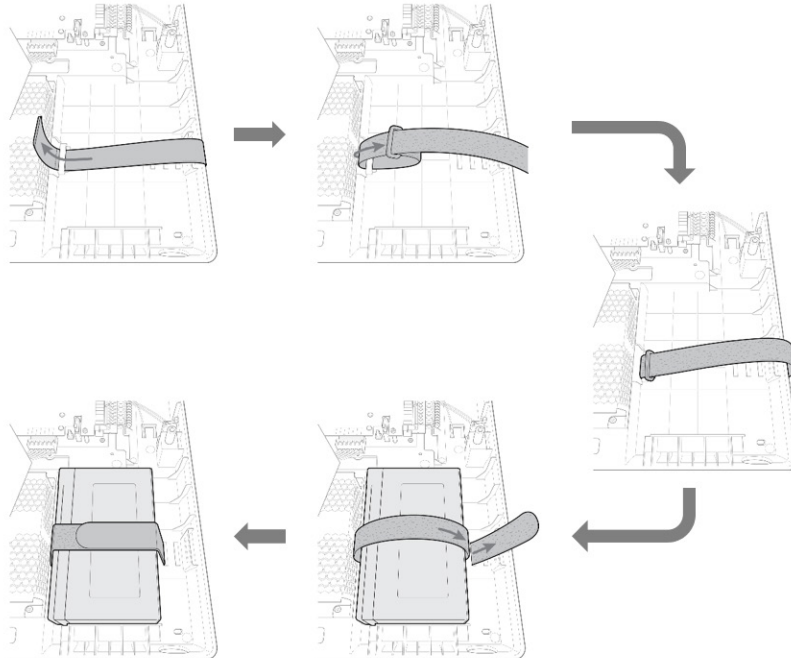


함체 설치

물리적·전기적 보호를 위해 CoreStation을 함체(ENCR-10) 내부에 설치할 수 있습니다. 함체에는 전원 상태 LED 보드, 전원 분배 보드, 전원 공급 장치, 탭퍼가 포함되어 있습니다. 함체는 별매품입니다.

백업 배터리 고정

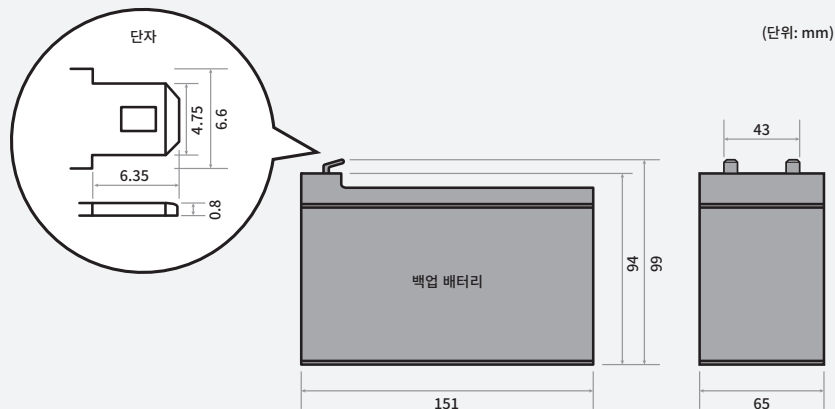
배터리 벨크로 스트랩을 함체에 끼운 뒤 배터리를 고정하세요.



- 백업 배터리는 12 VDC 사양과 7 Ah 이상의 제품을 사용하세요. 이 제품은 'ROCKET'사의 'ES7-12' 제품으로 테스트 되었으며, 'ES7-12'에 준하는 제품을 사용할 것을 권장합니다.

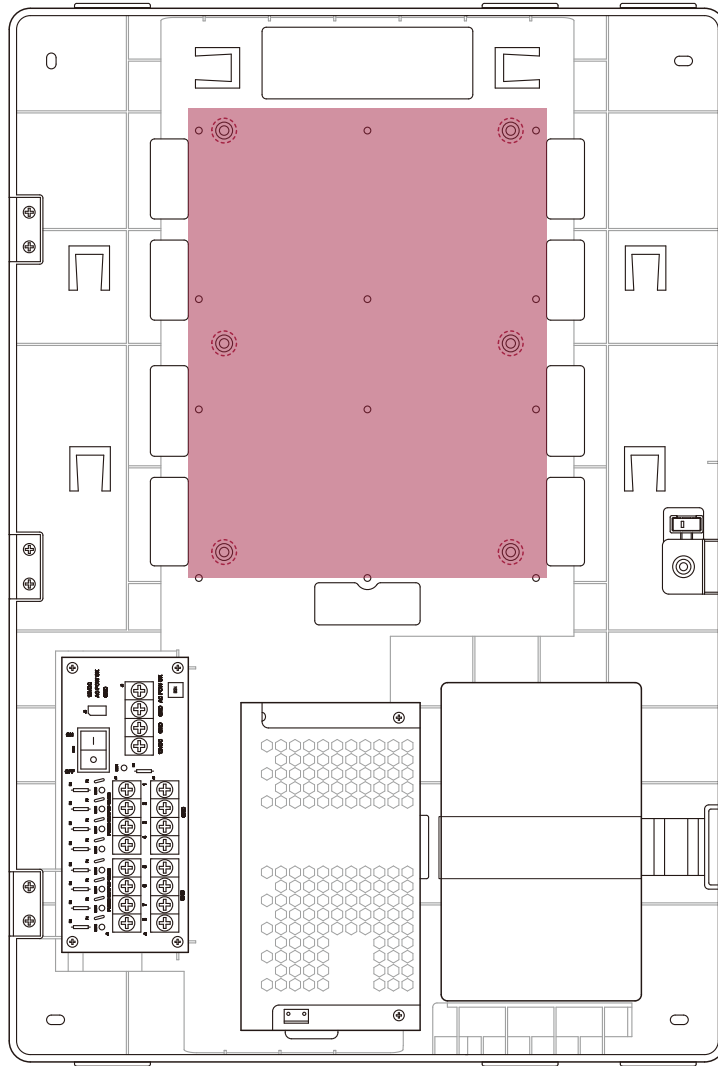


- 백업 배터리는 별매품입니다.
- 백업 배터리의 크기 및 단자의 모양과 크기를 반드시 확인하세요. 백업 배터리의 크기가 권장 사양보다 클 경우 함체에 장착할 수 없거나 장착한 뒤 함체가 닫히지 않을 수 있습니다. 또한 단자의 모양 및 크기가 다를 경우 제공된 케이블을 사용해 배터리를 연결할 수 없습니다.

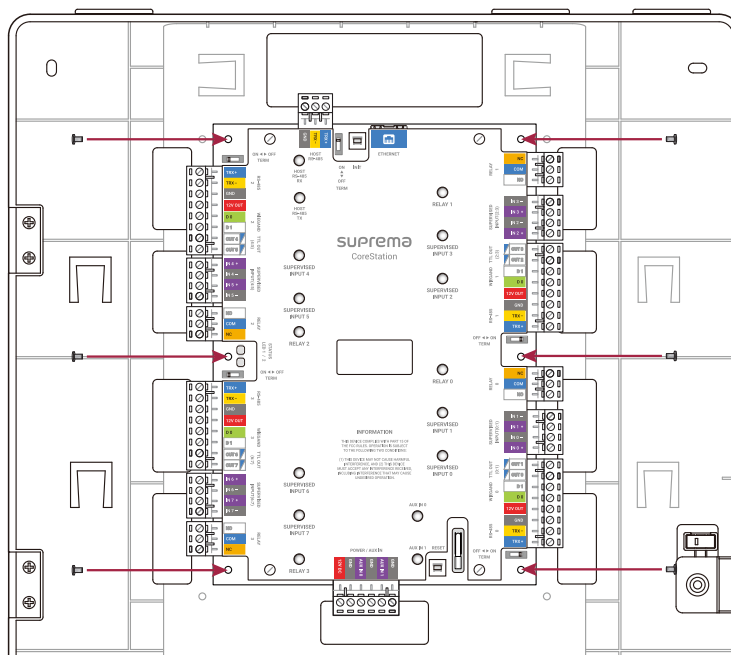


제품 고정

- 1 함체에서 CoreStation을 장착할 위치를 확인하세요.

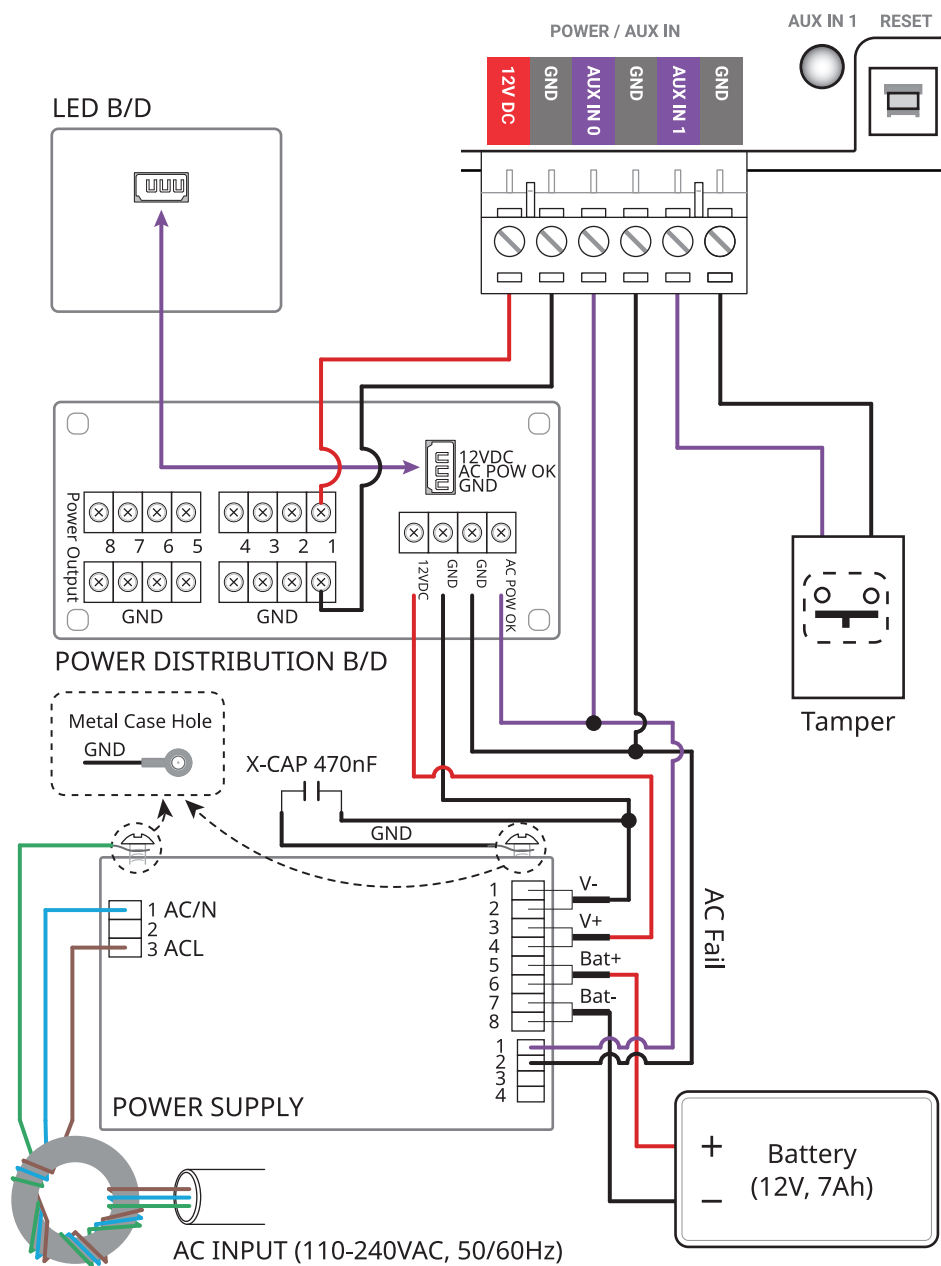


- 2 장착할 위치에 맞추어 CoreStation을 함체에 올린 뒤 고정용 나사로 고정하세요.



POWER / AUX IN 연결

전원 장애를 막기 위해 무정전 전원 장치(UPS)를 연결하여 사용할 수 있으며, 전원 장애 감지거나 다른 장치의 접점 출력을 AUX IN 단자에 연결할 수 있습니다. 또한 탬퍼와 연결하여 외부 요인에 의해 함체가 열릴 경우 경보를 올리거나 이벤트 로그를 남길 수 있습니다.



- 출입 통제 장치와 CoreStation에 연결하는 전원은 반드시 분리하여 사용하세요.
- 전원 어댑터는 IEC/EN 62368-1 승인을 받은 제품으로 단말기의 소모 전력 이상의 제품을 사용하세요. 전원 어댑터에 다른 기기를 연결하여 사용하려면 단말기의 소모 전력과 다른 기기에 필요한 소모 전력을 합한 전류 용량 이상의 어댑터를 사용해야 합니다.
 - 최대 소모전류 규격은 제품 사양의 **전원**을 참고하세요.
- 전원 어댑터를 사용할 경우 전원 케이블의 길이를 임의로 연장하지 마세요.
- 백업 배터리는 12 VDC 사양과 7 Ah 이상의 제품을 사용하세요. 이 제품은 'ROCKET'사의 'ES7-12' 제품으로 테스트 되었으며, 'ES7-12'에 준하는 제품을 사용할 것을 권장합니다.

공장 초기화

CoreStation SETUP Manager에서 CoreStation 공장 초기화를 진행할 수 있습니다.

1 CoreStation SETUP Manager에 접속한 뒤 **CONFIGURE**를 클릭하세요.

2 **Factory Default**를 클릭하세요.



- 장치에 저장된 루트 인증서가 존재하지 않을 경우 공장 초기화를 진행할 수 없습니다.
- CoreStation Setup Manager에 접속해 CoreStation의 네트워크 설정을 관리하거나 슬레이브 장치, 입력 및 출력 포트, Wiegand 포트의 연결 상태를 확인할 수 있습니다.
- CoreStation Setup Manager는 CoreStation 펌웨어 1.3.1 버전 이상에서 지원됩니다. 1.3.1보다 낮은 버전의 펌웨어를 사용할 경우 BioStar 2에 접속하여 펌웨어를 최신 버전으로 업그레이드하세요.
- CoreStation Setup Manager에 대한 자세한 내용은 사용자 가이드를 참고하세요. 사용자 가이드는 슈프리마 홈페이지 (<https://www.supremainc.com>)에서 내려받을 수 있습니다.
- BioStar 2 최신 버전은 CoreStation이 네트워크에 연결되어 재설정이 가능할 때 확인할 수 있습니다.
- 더 자세한 내용은 슈프리마 기술 지원팀(CS@suprema.co.kr)에 문의하세요.

제품 사양

구분	항목	규격
일반	모델명	CS-40
	CPU	1.4 GHz 옥타코어
	메모리	8 GB Flash + 1 GB RAM
	크립토 칩	지원
	LED	다중 색상 • STATUS - 2개 • HOST RS-485 TX - 1개 • HOST RS-485 RX - 1개 • SUPERVISED INPUT - 8개 • RELAY - 4개 • AUX IN - 2개
	동작 온도	0 °C ~ 50 °C
	보관 온도	-40 °C ~ 70 °C
	동작 습도	0 % ~ 80 %, 비응축
	보관 습도	0 % ~ 95 %, 비응축
	동작 환경 조건	0 °C ~ 49 °C
	치수 (W x H x D)	150 x 214 x 21 (mm)
	무게	415 g
	인증	CE, UKCA, KC, FCC, RCM, RoHS, REACH, WEEE
저장 용량	최대 사용자 수	500,000 ¹⁾
	최대 크리덴셜 수 (1:1)	• 지문: 500,000²⁾ • 얼굴: 30,000 • 카드: 500,000 • PIN: 500,000
	최대 크리덴셜 수 (1:N)	• 지문: 500,000²⁾ • 얼굴: 4,000
	최대 텍스트 로그 수	5,000,000
인터페이스	이더넷	지원 (10/100 Mbps, 자동 MDI/MDI-X)
	RS-485	5 채널
	RS-485 통신 프로토콜	OSDP V2 호환
	Wiegand	4 채널
	릴레이	4개
	Supervised 입력	8 채널 (TTL 입력 선택 가능)
	TTL 출력	8 채널
	AUX 입력	2 채널 (AC POWER FAIL, 탬퍼 연결 지원)

구분	항목	규격
전기 규격	전원	CoreStation - 전압: 12 Vdc - 전류: 최대 3 A
		전원 장치 (SMPS) AC INPUT 110 ~ 240 VAC, 50/60 Hz
	전원 출력	- 전압: 12 Vdc - 전류: 최대 1.5 A
	스위치 입력 VIH	- 최대: 5 V - 최소: 3 V
	스위치 입력 VIL	최대 1 V
	릴레이	5 A @ 30 VDC Resistive load

- 제품 사양은 성능 개선을 위해 예고 없이 변경될 수 있습니다.
 - 얼굴 인식 장치는 FaceStation 2, FaceLite만 지원됩니다.
- 1) 크리덴셜 없이 등록된 사용자 기준입니다.
 - 2) 지문 센서가 있는 장치를 슬레이브로 연결하면 슬레이브 장치를 사용하여 지문을 인증할 수 있습니다.

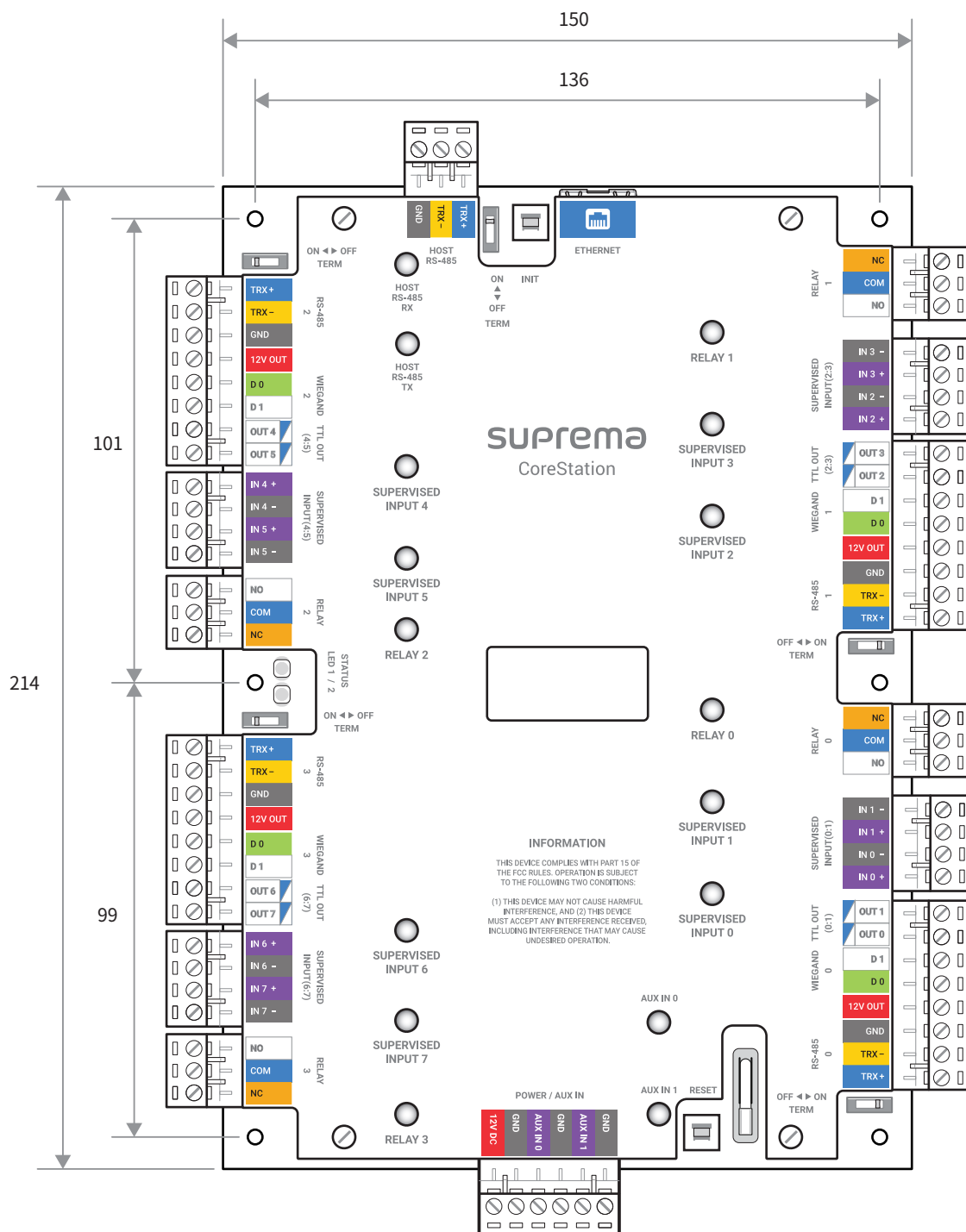


- CoreStation 제품이나 문제 해결을 위한 자세한 정보는 다음 링크를 참고하세요.
http://kb.supremainc.com/knowledge/doku.php?id=en:14_subjects_of_corestation_faq

제품 치수

(단위: mm)

* 치수 공차는 ± 0.3 mm입니다.



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 해결하세요.

- 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 마세요.
- 사용자(또는 근처의 다른 사람)와 제품의 안테나간에 최소 20cm의 거리를 유지하세요.

면책 조항

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Version 3, 29 June 2007

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