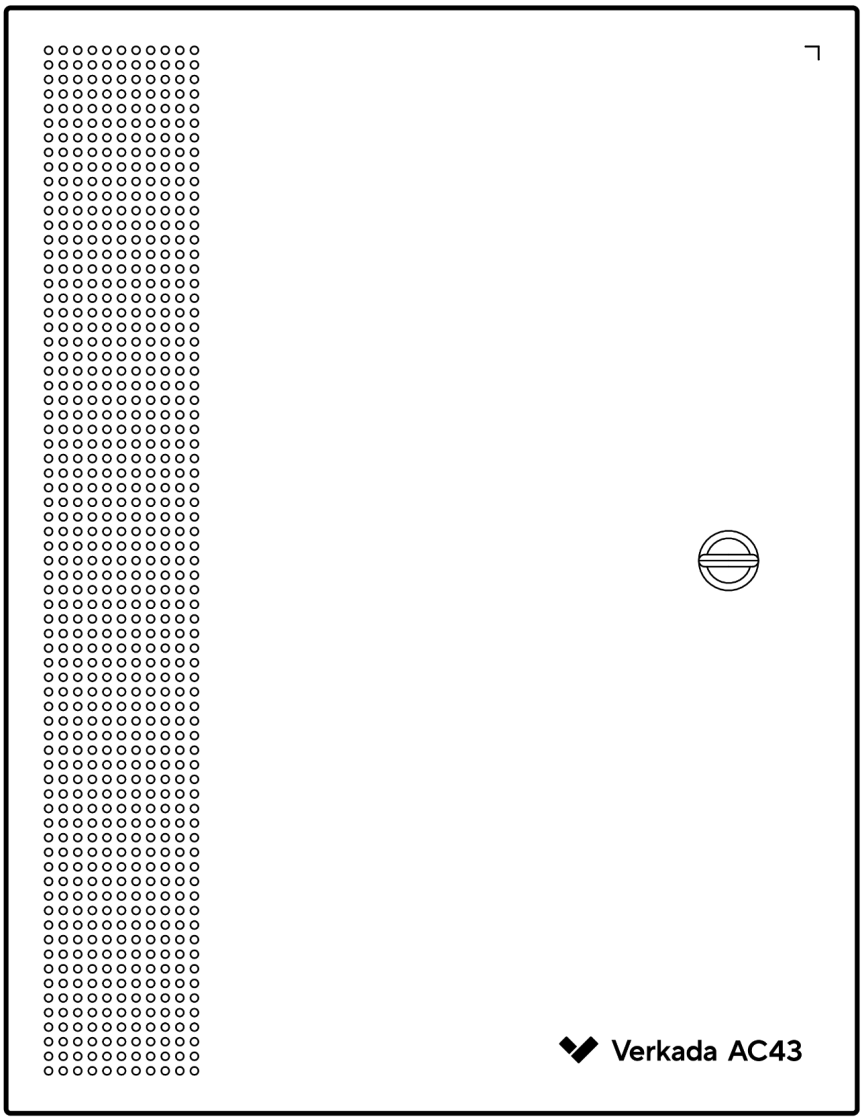
Install Guide

AC43 Four-Door Controller



Document Details

Version

V1.0
(V1.0 published 20260506)
Document ID: AC43 Install Guide

Firmware

Firmware version can be verified on Verkada Command command.verkada.com.

Product Models

This install guide pertains to models AC43-HW and AC43-HW-G

Caution ⚠

Installation and/or maintenance of this product shall be performed by trained professionals only.

Levels of Access Control

- Attack Level/Grade: Level 1
- Endurance Level/Grade: Level 1
- Line Security Level/Grade: Level 1
- Standby Power Level/Grade: Level 1

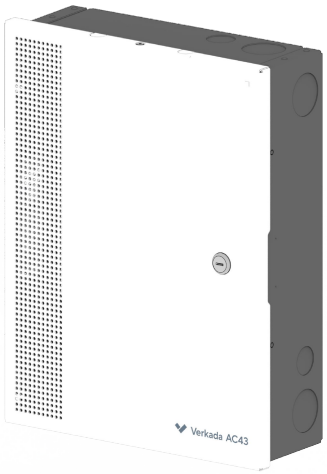
UL294 Performance Levels

- Attack Level: Level I
- Endurance Level: Level I
- Line Security Level: Level I
- Standby Power Level: Level I

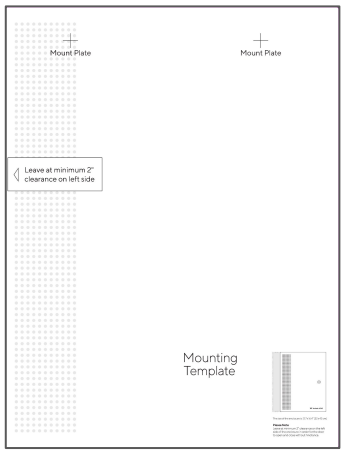
CAN/ULC-60839-11-1

- Grade assignment: Grade I

What's in the Box



Four-Door Controller

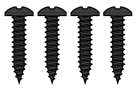


Mount Template

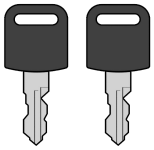
Wall Mount

AC Cable

Screwdriver



Plywood Screws M5 25.4L
(4 pcs)



Keys
(2 pcs)

What you'll need

- A working internet connection
- A smartphone or laptop
- A #2 Phillips head and power drill
- A level

Connect

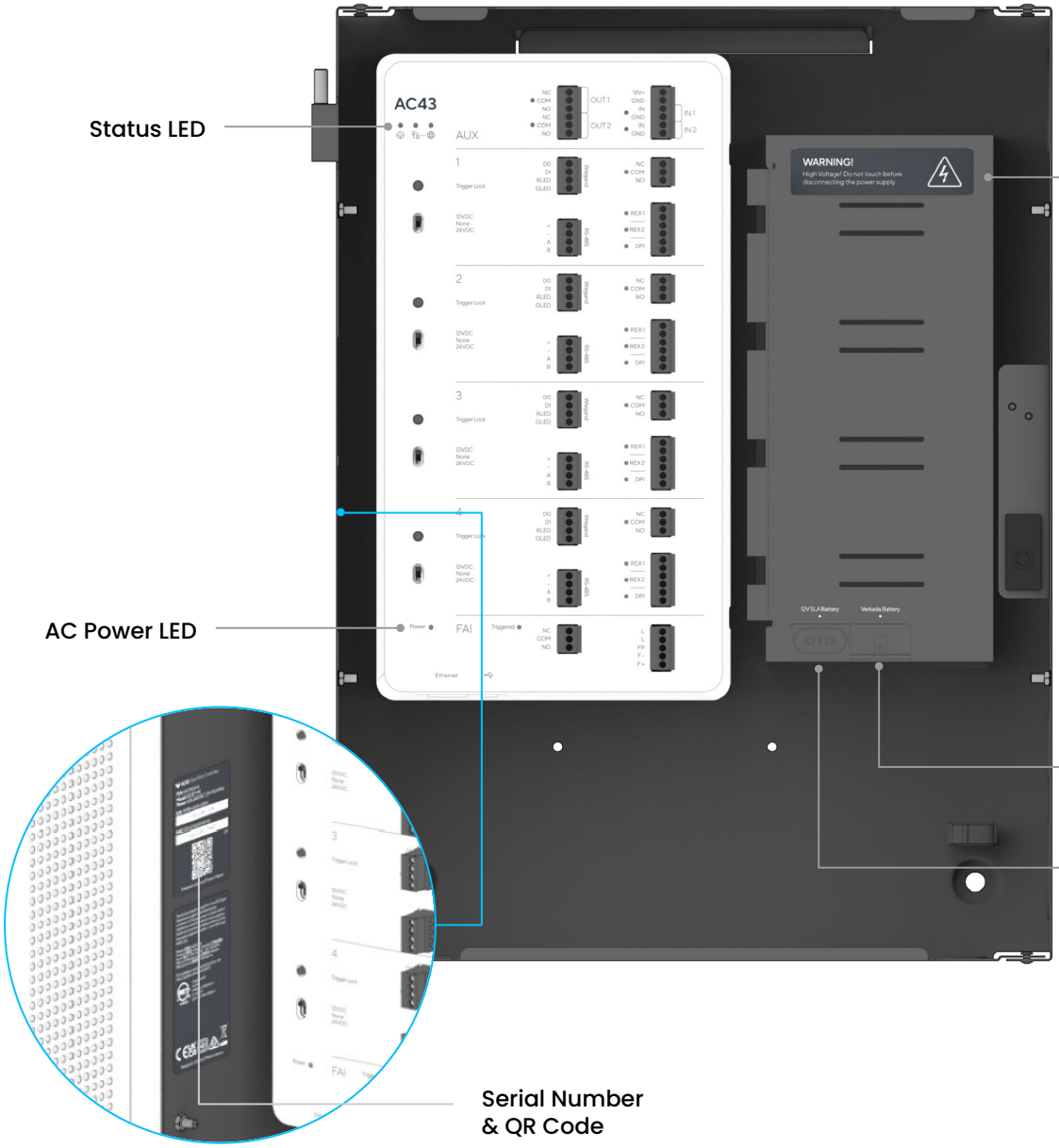
Connect the AC43 to your network using the Ethernet port located at the bottom of the controller. Connect the AC43 power supply into your power outlet.

Supports 100- 240VAC (50/60Hz).

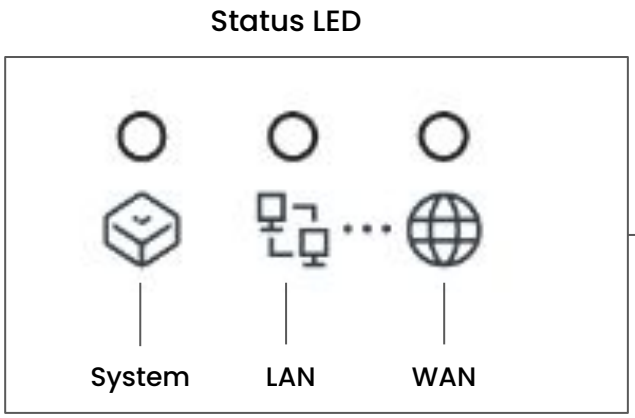
After connecting the AC43 to network and power, visit: verkada.com/start

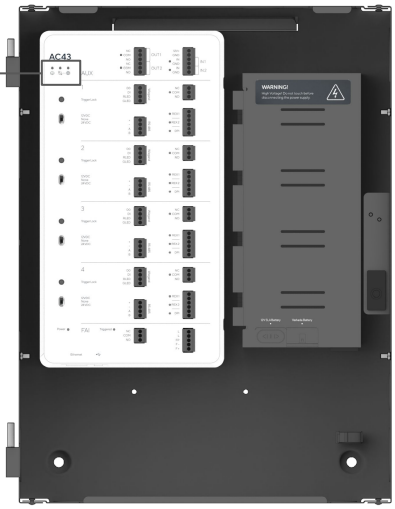
For detailed installation instructions, visit: verkada.com/support

Overview 1/3


Status LED
AC Power LED
Power Supply
AC Input
Do not connect to a receptacle controlled by a switch.
LFP and SLA Battery Port
Not Evaluated for compliance to UL 294 or ULC 60839-11-1
SLA Port not evaluated for compliance to UL/IEC 62368-1
Serial Number & QR Code
AC43
WARNING!

Overview 2/3





System

Status	Color/Pattern
Running, connected	
On & Booting up	
Updating firmware, connecting	
Error/Issue	

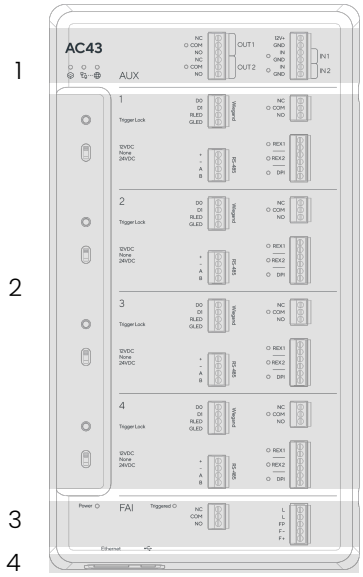
LAN

Status	Color/Pattern
Connected to local	
No IP Address	1x
Duplicate IP	2x
No Gateway	3x
No Switch	4x

WAN

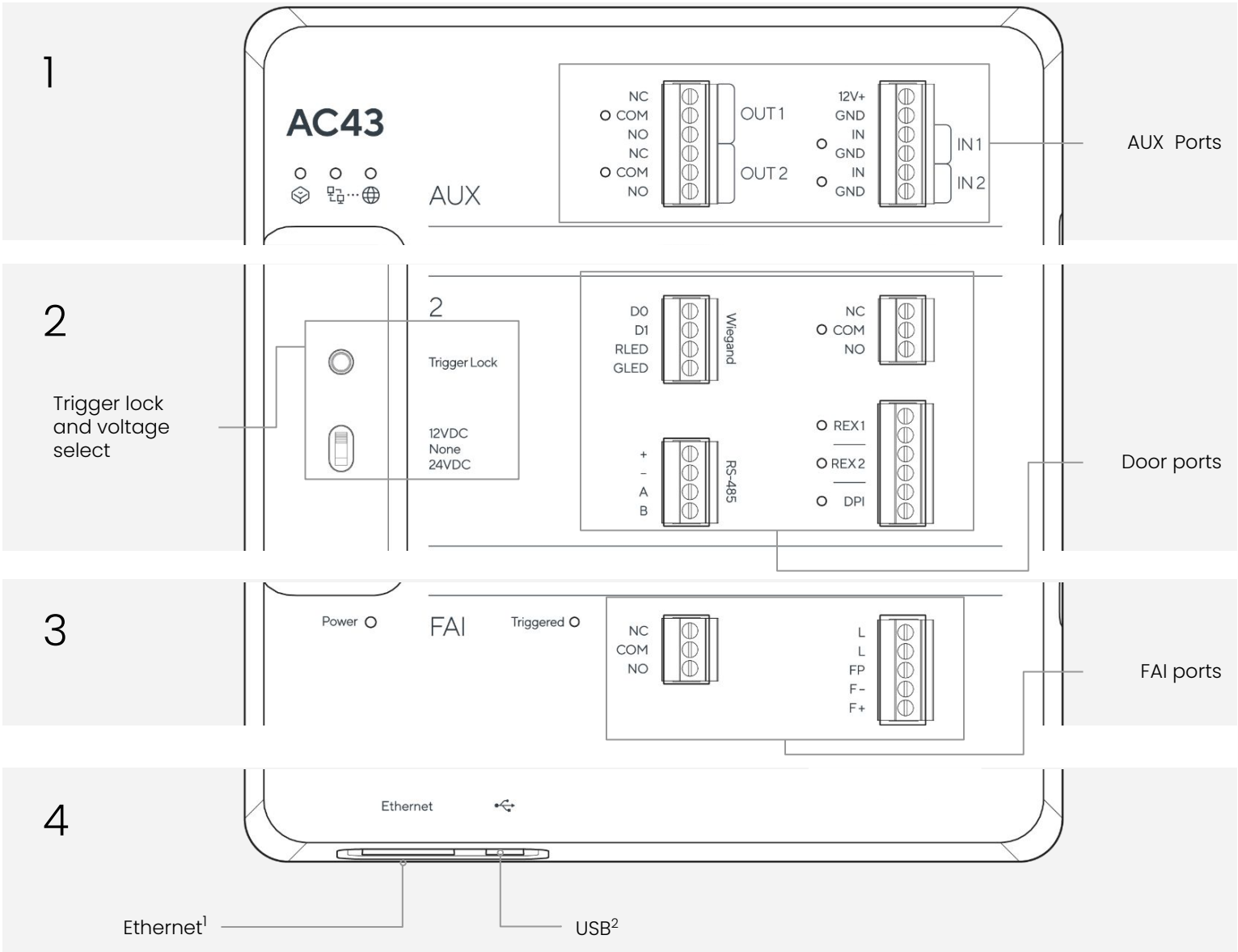
Status	Color/Pattern
Connect to Internet	
DNS Error	1x
NTP Error	2x
Not connected to Command	3x

Overview 2/3



Controller highlights

1 Ports for: AUX.
2 Ports for: Doors 1 to 4. All door ports function the same.
3 Ports for: Fire Alarm Interface(FAI).
4 Ports for: Ethernet, USB, UPS, Door Tamper.



[1] Ethernet is for supplemental monitoring use in accordance with UL 294 and ULC 60839-11-1
[2] USB is not evaluated for compliance to UL294 or ULC 60839-11-1

Recommended Testing

To ensure ongoing functionality of AC43, it is recommended to check the following interfaces every 6 months:

- Short each input to its adjacent GND port and verify that LED illuminates.
- Use multimeter to confirm expected impedance across relay outputs.
  - Closed across NC and COM
  - Open across NO and COM
- Use multimeter to verify correct voltage is supplied at 12V AUX output, Relay Contact outputs, and reader power outputs.
- Check the shielding cables of the readers and other AUX wiring, if any, for proper connection to the grounding screw/s on the chassis.
- If a back-up battery is in use, follow installation, maintenance, and other safety guidelines and recommendations from the battery manufacturer

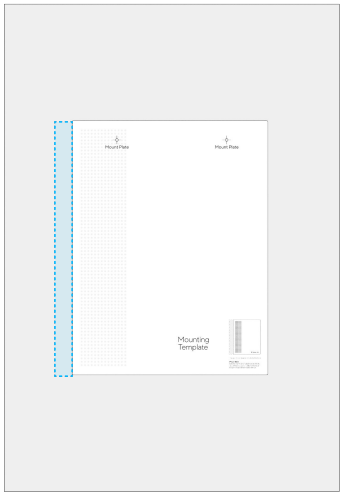
AC43 Technical Specifications

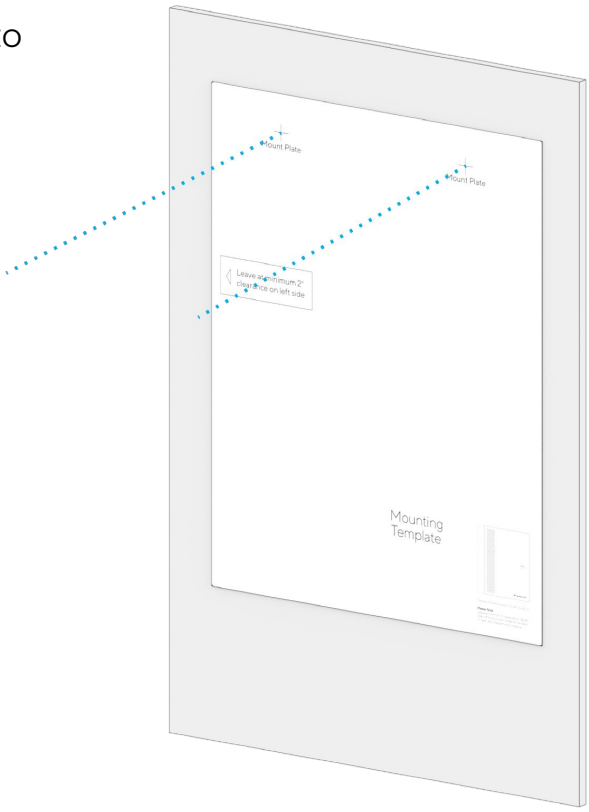
Power Consumption	98W maximum
AC Power Input	100-240VAC 50/60Hz 1.5A maximum
Inputs	2x REX dry inputs per door 1x DPI dry input per door 2x auxiliary dry inputs
Readers	1x reader port (Verkada/RS-485 or Wiegand) per door Reader current consumption must be < 600mA per reader *Note: max of 4 readers can be powered simultaneously*
Relay Outputs	1x wet or dry relay per door Wet relay switch-selectable power: • 12V operation 700mA max • 24V operation 350mA max Dry relay max pass-through power: • 24VDC @ 2A (resistive load) 2x auxiliary dry relays
AUX Power	1x 12V @ 250mA
Dimensions	417 x 321 x 116.25mm
Weight	6.35kg
Operating Temperature	0°C - 50°C, 5-90% humidity
Compliance	FCC Part 15 Class A, ICES-3 Class A, CE, UKCA, RCM, VCCI, UL 294, Class 2 Power Limiting Circuits via UL294, CAN/ULC 60839-11-1, UL 62368-1, CSA C22.2 No. 62368-1, IEC 62368-1, NDAA,
Connectivity	Ethernet: 10/100/1000Mbps RJ-45 for network connection USB 2.0
Included Accessories	Lock key and flat head screwdriver
Mounting Options	Mounting plate and 4 wood screws

Mounting 1/4

Use the paper Mounting Template from the install kit to get a sense of the wall space AC43 will occupy.

Use the Mounting Template to drill pilot holes for the Wall Mount.

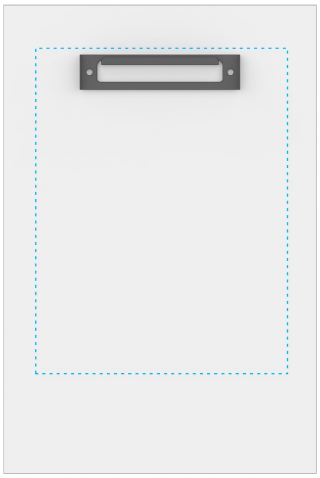


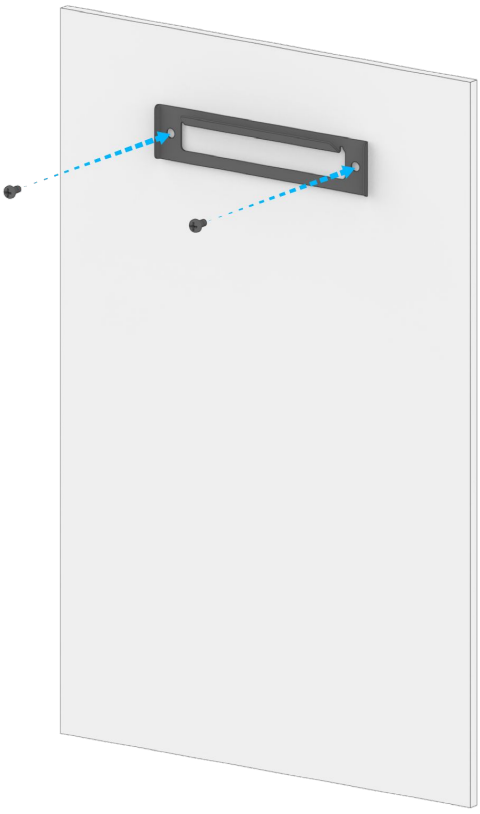


Please Note The enclosure is 417 x 321 x 116.25mm. Leave at minimum 2" clearance on the left side of the enclosure in order for the door to open and close without hindrance.

Use the supplied screws to install the Wall Mount onto the wall.

Once attached, the enclosure will extend down roughly 16" (~40cm), from the top of the Wall Mount.



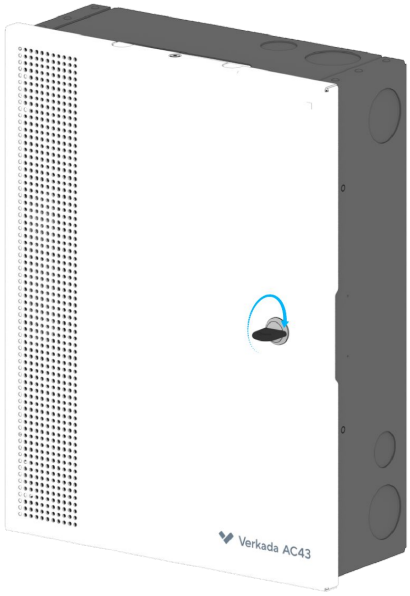


Please Note The supplied screws are intended for plywood installations. For other wall materials, ensure proper load-bearing fasteners are used.

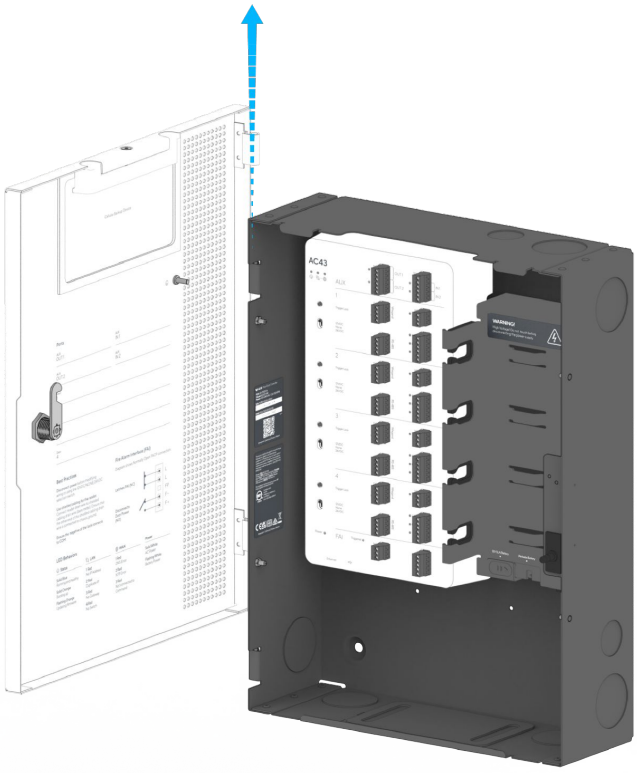
Mounting 2/4

Unlock and open the enclosure door with the supplied key.

Remove the protective cardboard from the inside of the door.

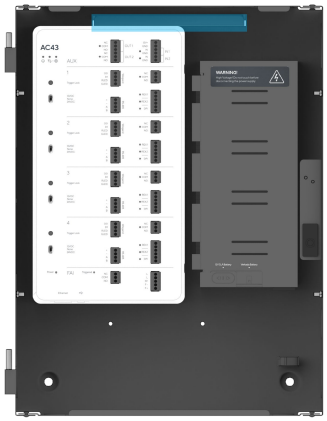


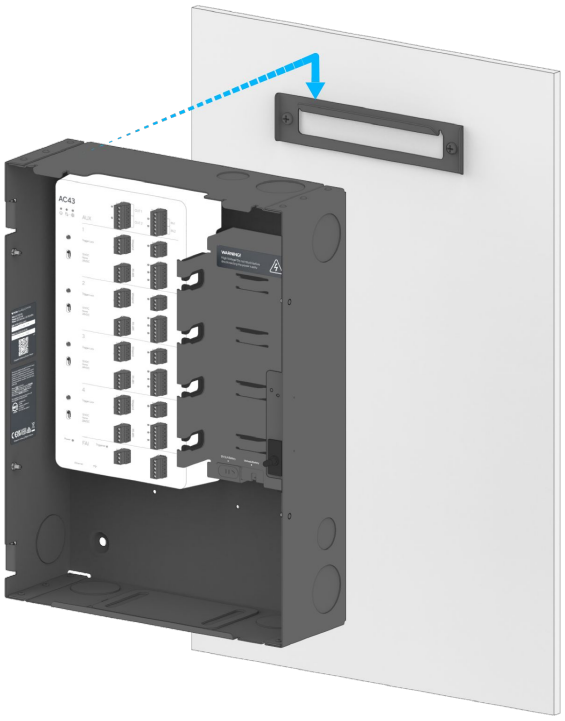
Remove the door by sliding it upwards.



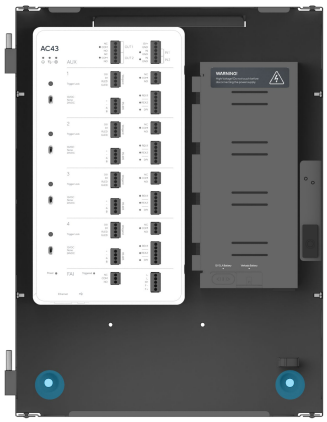
Mounting 3/4

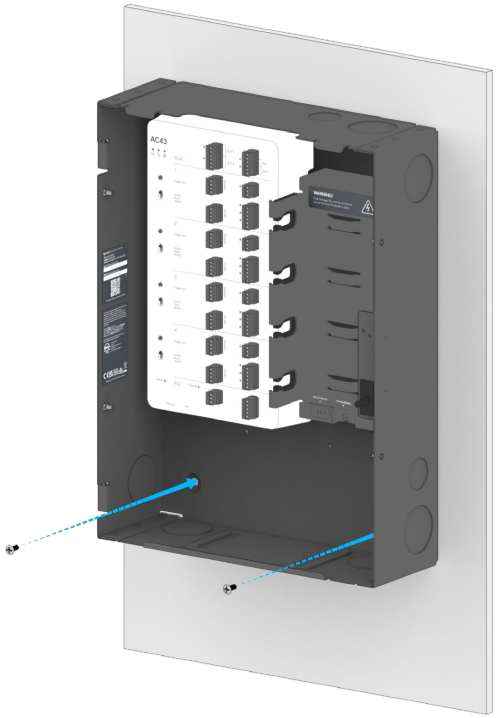
Carefully slot the enclosure onto the Wall Mount.





Secure the enclosure onto the wall using the holes on the bottom of the enclosure.

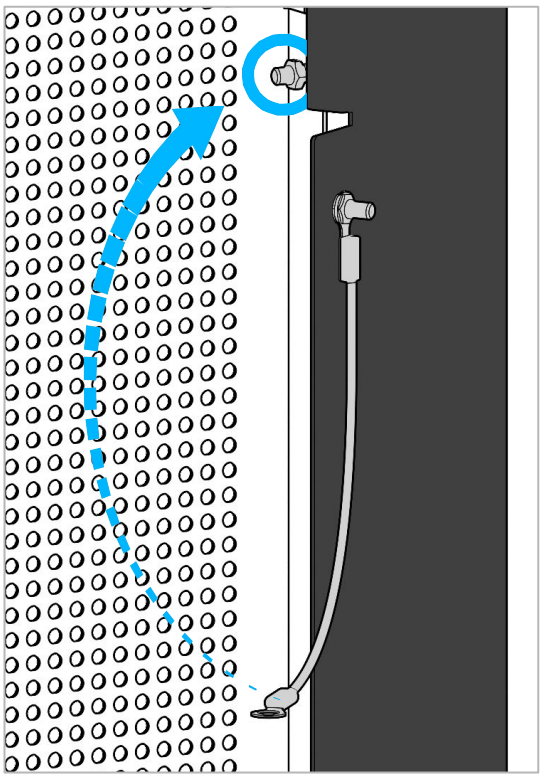




Mounting 4/4

Reattach the door to the enclosure.

Connect the grounding cable from the enclosure to the door



Recommended Wiring

Verkada AC43 is capable of supporting Verkada Readers and standard OSDP readers over RS-485, as well as standard Wiegand readers. The following diagram shows the wire types that are recommended for use with the Verkada AC43. For optimal performance, shielded twisted pair cabling is required for all readers. We recommend using separate twisted pairs for power (+/-) and for data (RS-485 A/B, Wiegand D0/D1/RLED/GLED). Wiring methods shall be in accordance with National Electrical Code, ANSI/NFPA 70. All Output Circuits are Class 2 Power Limited via UL294.

Connection	AWG	Shielded Twisted Pair Cabling Required?	Length
Verkada Readers (4th generation and later)	22	Yes	Up to 500 ft (150 m)
	20	Yes	Up to 1200 ft(370 m)
	18	Yes	Up to 1350 ft (410 m)
Standard OSDP Readers (RS-485)	22	Yes	Up to 500 ft (150 m)*
	20	Yes	Up to 1200 ft(370 m)*
	18	Yes	Up to 1350 ft (410 m)*
Wiegand Readers	22	Yes	Up to 250 ft (30 m)*
	20	Yes	Up to 300 ft (90 m)*
	18	Yes	Up to 500 ft (150 m)*
DPI/REX/AUX Input	22	NA	Up to 1500 ft (460 m)
	20	NA	Up to 1500 ft (460 m)
	18	NA	Up to 1500 ft (460 m)

* Power requirements for third party readers can vary. Refer to the third party reader's datasheet for voltage and current requirements, and use a voltage drop calculator to ensure that, given 12V output from the ACU, the voltage provided to the reader over the cable run is sufficient for proper operation.

For longer RS-485 cable runs between the AC43 and a Verkada reader (or a high performance third party standard OSDP reader), connectivity with the AC43 can be achieved with a maximum cable run for data (A and B wires) of up to 2000 ft (610 m). Sufficient external power must be provided to the reader.

Refer to the lock's datasheet for voltage and current requirements, and use a voltage drop calculator to ensure that, given 12V or 24V output from the ACU, the voltage provided to the lock over the cable run is sufficient for proper operation.

Shield Wiring and Grounding

You must use shielded cabling with the AC43, particularly for the card reader:

- Connect the drain wire (bare metal) from the reader cable bundle to the drain wire in the shielded cabling. Then, connect the drain wire at the other end of the shielded cabling to Earth ground.
- Improper grounding and shielding may result in unintended product behavior.

Required Network Settings

An Ethernet connection with DHCP must be used to connect the AC43 to the Local Area Network (LAN).
You also need to configure firewall settings to communicate with the AC43.
TCP port 443
UDP port 123 (NTP time synchronization)

Connecting a Door 1/5

The door ports' Form C relays can be driven dry or wet. AC43 is rated to power **12V locks up to 700mA and 24V locks up to 350mA.**

None/Dry
The AC43 does not provide power to the locking hardware (typically used with external power supplies).

Wet
The AC43 provides 12V or 24V power to the locking hardware.

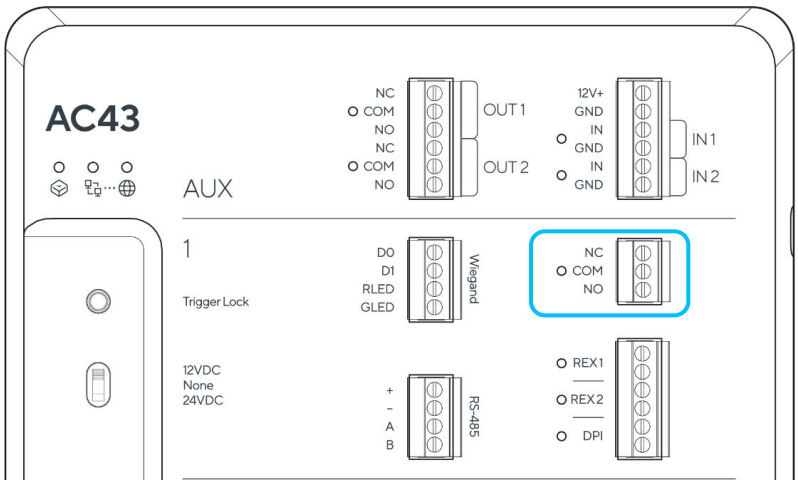
Warning

Ensure power is disconnected from the AC43 and locking hardware before wiring, removing or inserting readers, locks or any other peripherals.

1. Wiring Fail Secure and Fail Safe Locking Hardware

Fail secure and fail safe are ways of configuring locking hardware:

- **Fail secure** hardware **locks** when power is interrupted. Usually uses NO (Normally Open Configuration)
- **Fail safe** hardware **unlocks** when power is interrupted. Usually uses NC (Normally Closed configuration)

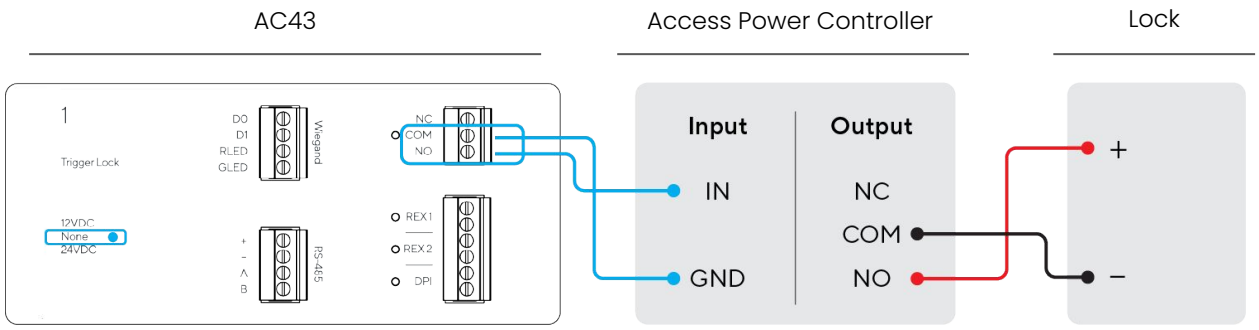


Connecting a Door 2/5

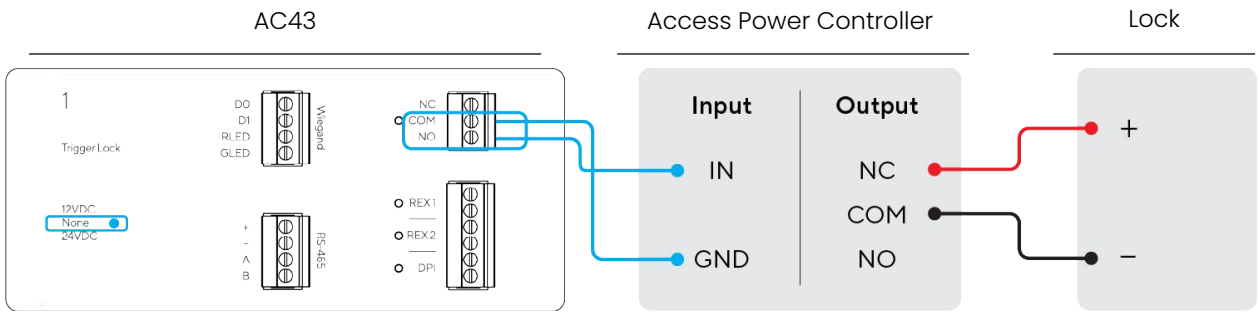
2a. Connect the Lock (Dry)

When using an external power supply which uses a dry contact, ensure that "NONE" is selected on the door power selection switch.

Fail Secure



Fail Safe



2b. Connect the Lock (Wet)

In a Wet configuration, ensure that power selection for each door is set to the correct voltage as outlined by the locking hardware specifications.

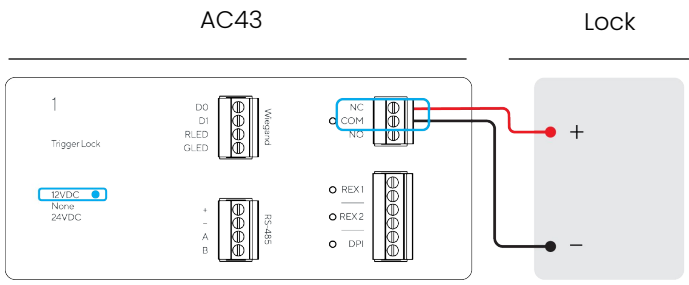
- Set it to "12VDC" for 12 volt locking hardware
- Set it to "24VDC" for 24 volt locking hardware

The AC43 is rated to power:
12V locks up to 700mA and 24V locks up to 350mA.

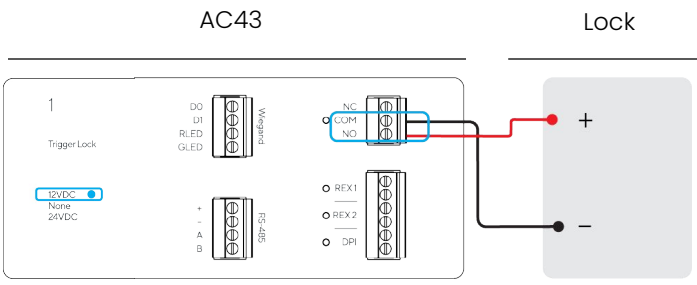
Warning ⚠

When connecting the lock in the WET configuration, ensure the negative of the lock goes into the COM port as shown in the diagrams below.

Fail Safe
LOCK (+) positive goes into NC
LOCK (-) negative and ground wire goes into COM



Fail Secure
LOCK (+) positive goes into NO
LOCK (-) negative and ground wire goes into COM

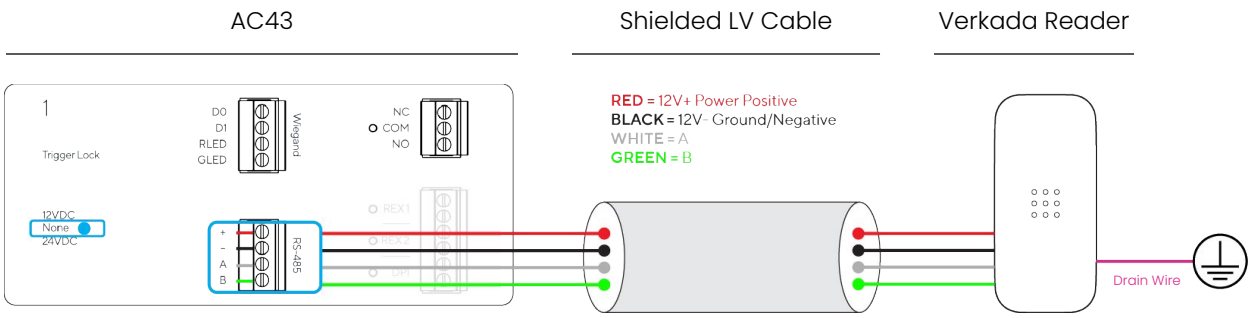


Connecting a Door 3/5

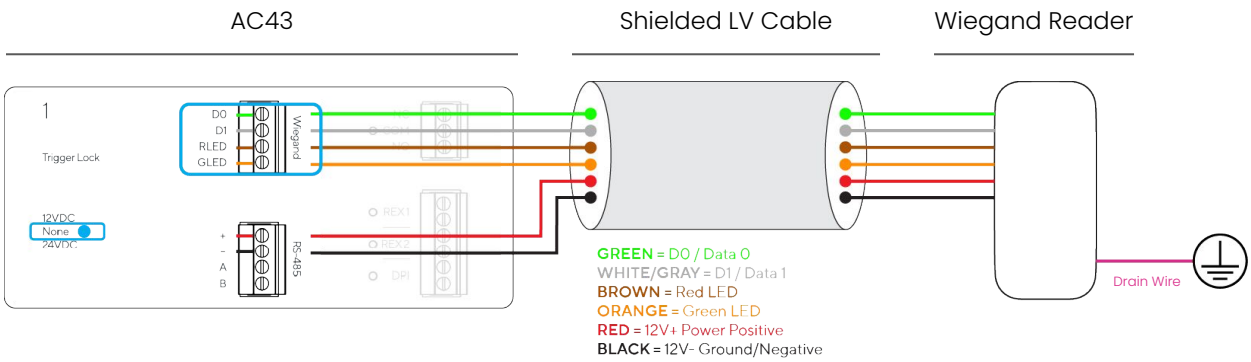
3. Connecting the Reader

The AC43 is rated to power readers at 12V up to 250mA via the + (VIN) and – (GND) connection. Reader power outputs are fuse protected up to 750mA. Standard Wiegand readers use the top 4-port inputs (powered from + and - of the bottom port) while Verkada/RS-485 readers use the bottom 4-port inputs. **The drain wire of the shielded cable should be secured to the nearest AC43 chassis ground.**

Verkada/ RS-485 Reader



Standard Wiegand Reader



Verkada/RS-485 Reader

Wire Color	Signal
Red	12V Power+
Black	12V Power-
White	A
Green	B

Wiegand Reader

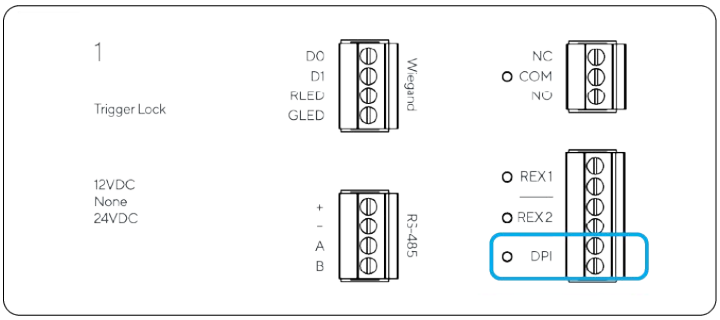
Wire Color	Signal
Red	12V Power+
Black	12V Power-
Green	Data 0
White/Gray	Data 1
Brown	Red LED
Orange	Green LED

Connecting a Door 4/5

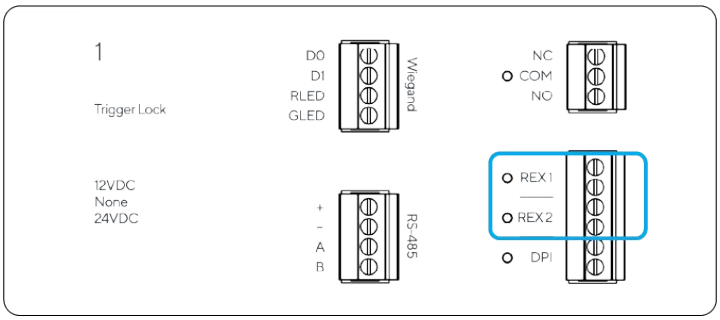
4. Connecting the Inputs

Both the DPI (Door Position Indicator) and the Request-to-Exit (REX) inputs are dry contacts. Installing these inputs is optional. They can be configured in Verkada Command.

Door Position Indicator
Verkada AC43 expects the DPI to be **NORMALLY CLOSED** (NC)



Request-to-Exit (REX)
Verkada AC43 expects the REX to be **NORMALLY OPEN** (NO)



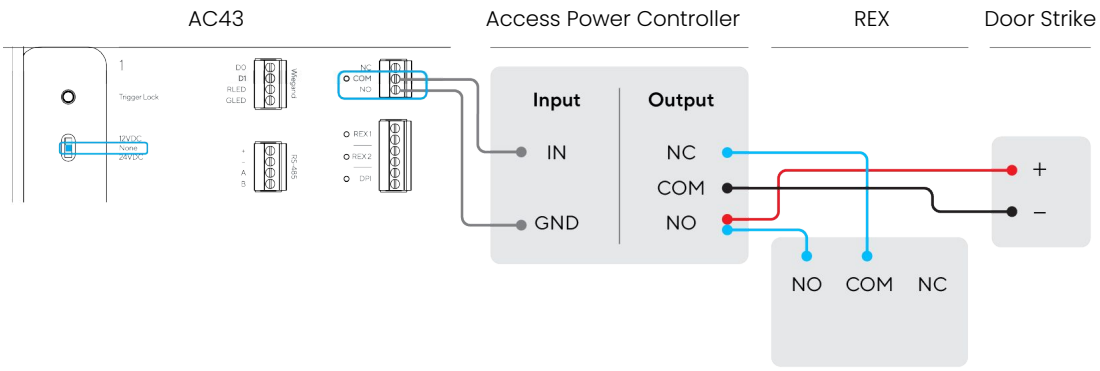
The REX can be configured in Verkada Command to release the lock; this is most commonly seen in electromagnetic locks. The REX unlock time can also be configured.

Connecting a Door 5/5

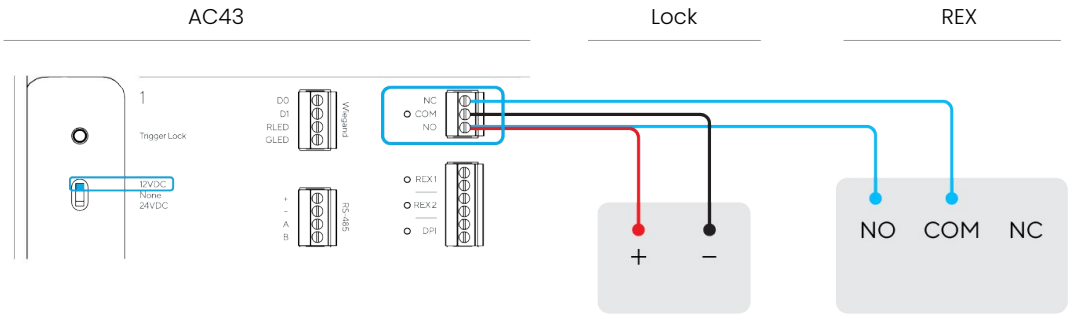
5a. Wiring the REX With the Door Strike

For safety-related applications, wire the REX in parallel with the Door Strike. You can wire additional REX switches and sensors to the door cassette if needed.

DRY Configuration



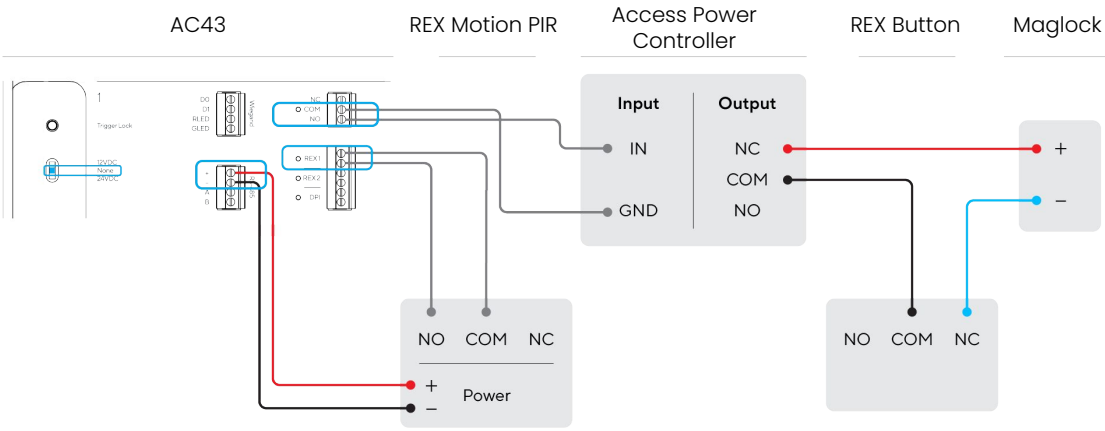
WET Configuration



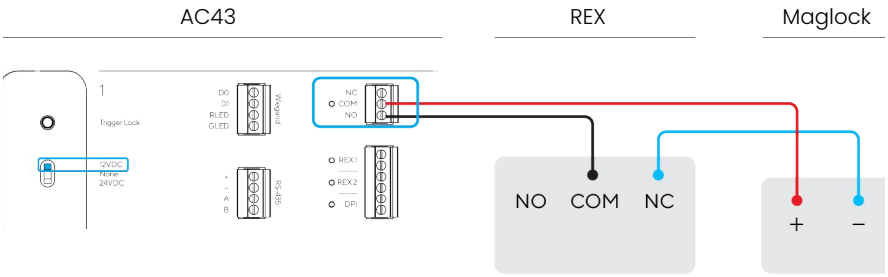
5b. Wiring the REX With an Electromagnetic Lock

For safety-related applications, wire the REX directly to the mag lock. You can wire additional REX switches and sensors to the door cassette if needed.

DRY Configuration



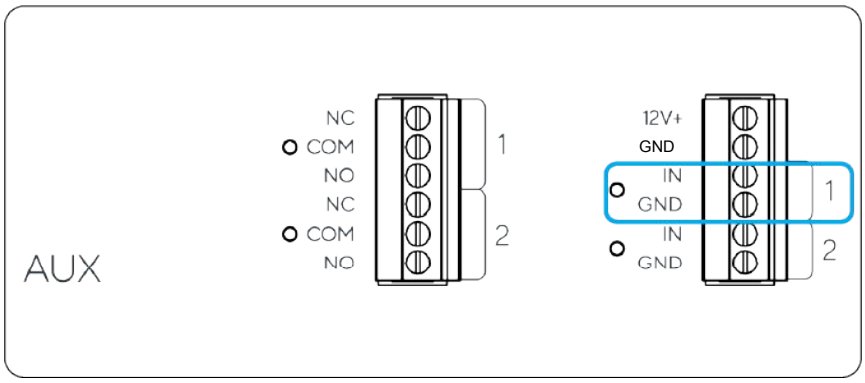
WET Configuration



AUX

AUX Inputs

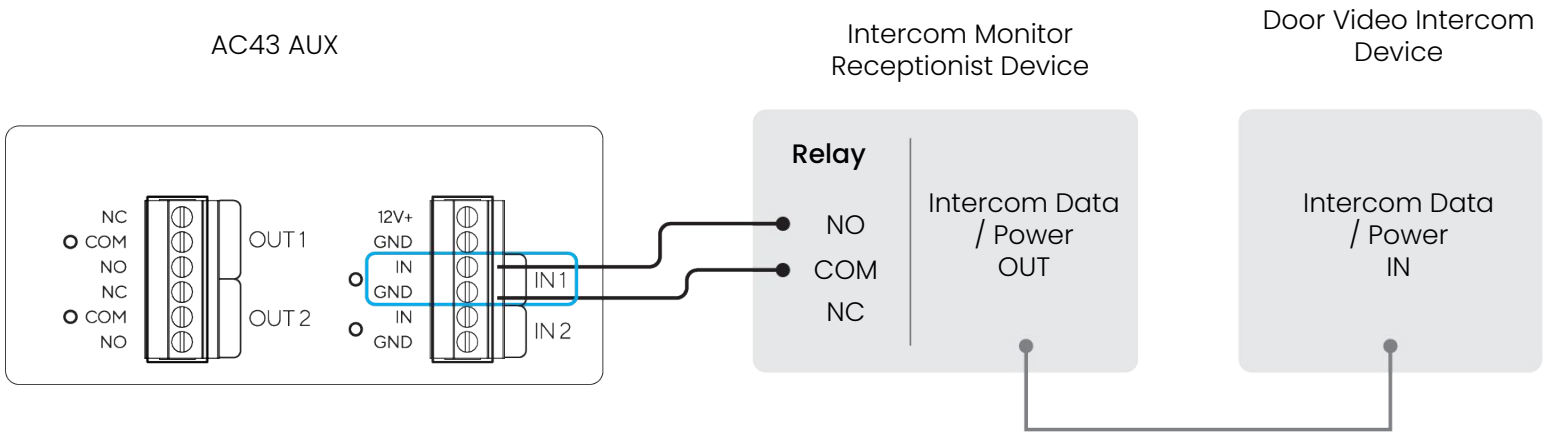
The Verkada AC43 has two AUX inputs. The AC43 expects by default both AUX inputs to be **NORMALLY OPEN (NO)** however this behaviour can be changed to **NORMALLY CLOSED (NC)** in command



With the AC43's AUX inputs you can hook up devices such as intercoms and panic buttons. All associated events will be logged in Command.

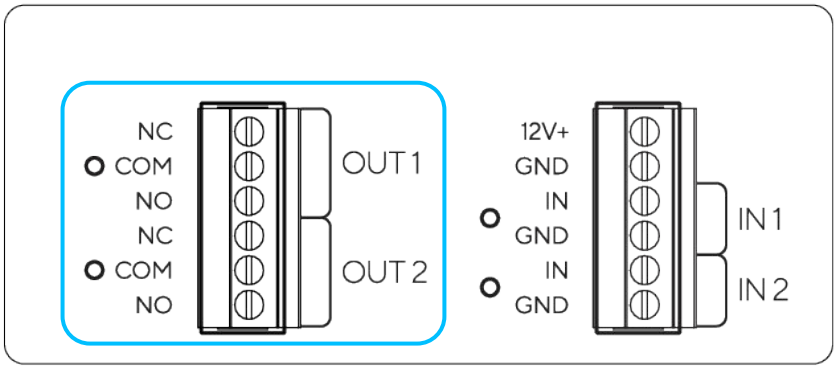
The AUX Inputs can be programmed in Command to initiate a lockdown or unlock a door (or a set of doors). We will be expanding support for more auxiliary devices in the future.

Example AUX 3rd Party Intercom Wiring Diagram



AUX Outputs

Additionally, the AC43 has two AUX Form C relays. These two AUX relays can be programmed to trigger an output during a lockdown. This allows you to activate a dialer, strobe light, sounder, etc. when a lockdown is initiated.



FAI Setup 1/2

Normally Closed Input

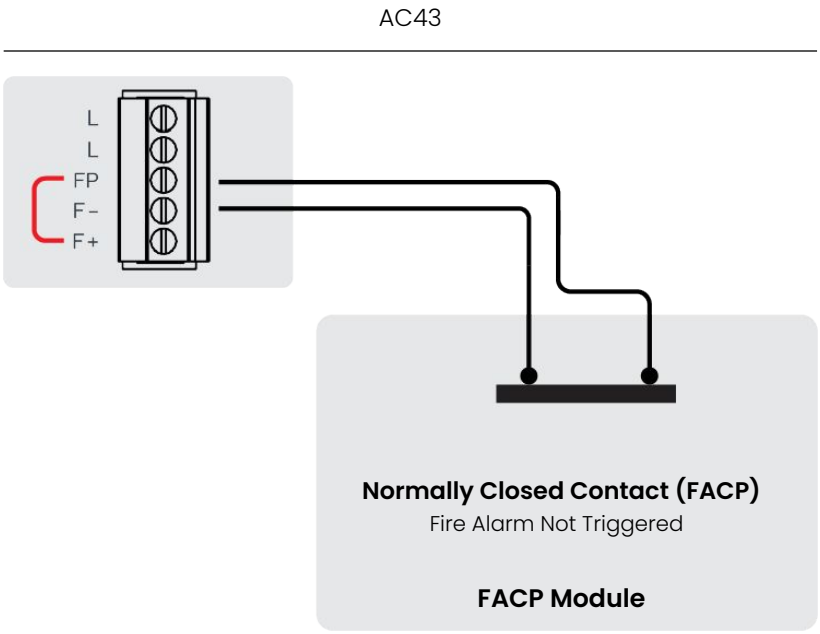
A normally closed fire alarm input from an FACP should be wired across FAI- and FAI_P.

A jumper wire must be connected across FAI- and FAI P.

When the contact is open, this activates the FAI in the AC43 which disables 12V/24V power to all 4 relay outputs. In other words all wet locks will be effectively dry while the FAI is triggered.

Important ⚠

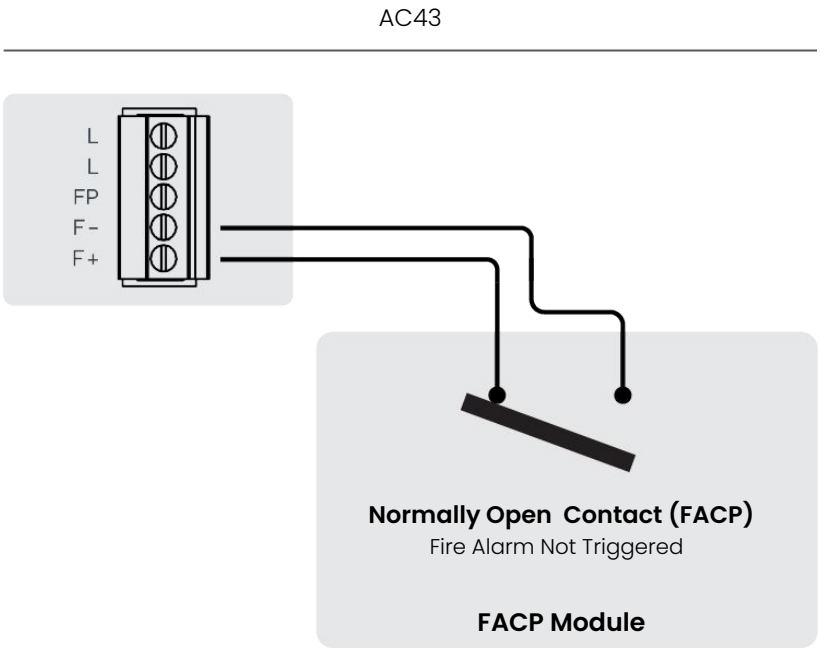
FAI+ and FAI_P must be locally jumpered in this configuration.



Normally Open Input

A normally open fire alarm input from an FACP should be wired across FAI+ and FAI-.

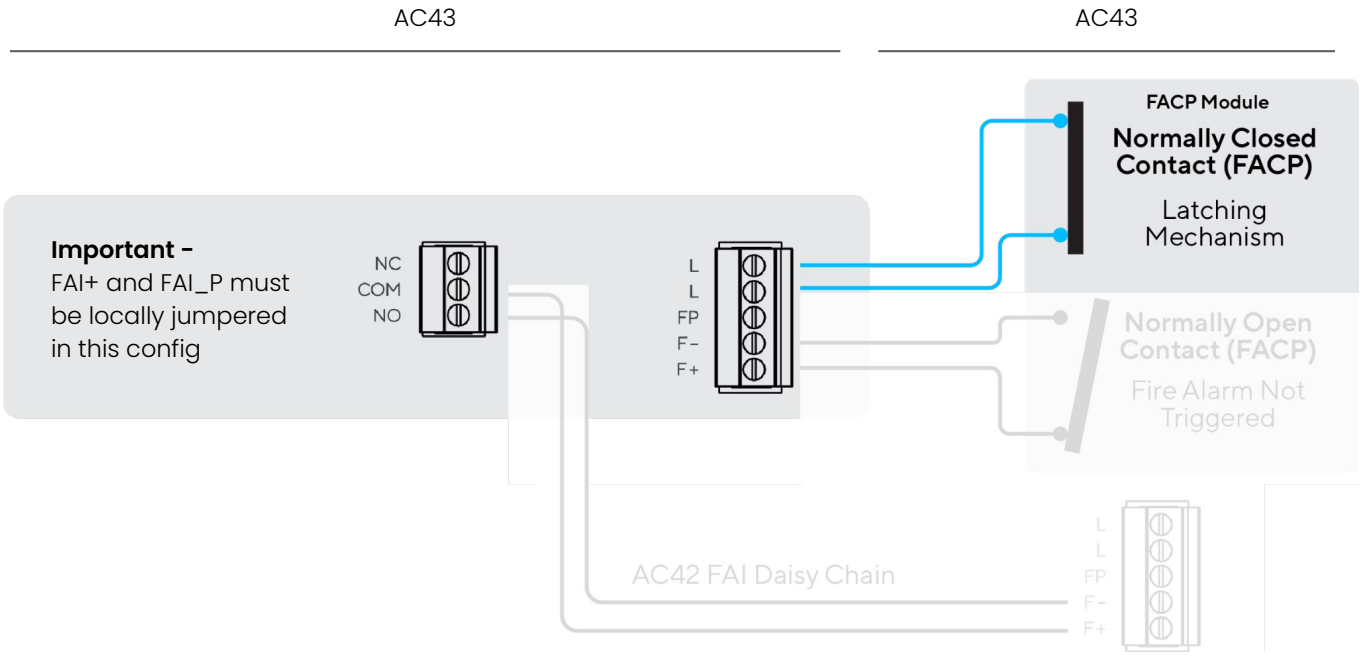
When the contact is closed, this activates the FAI in the AC43 which disables 12V/24V power to all 4 relay outputs. In other words all wet locks will be effectively dry while the FAI is triggered.



FAI Setup 2/2

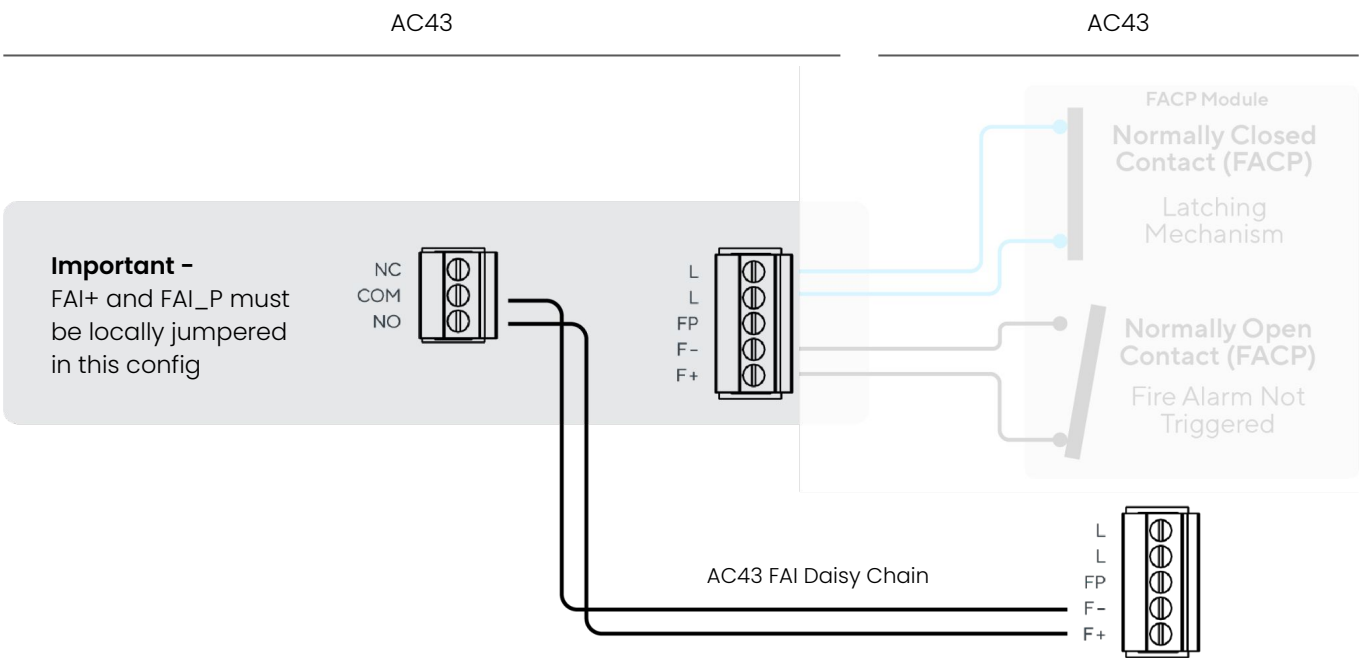
Latching

An optional latching input from the FACP may be connected in a normally closed configuration across L and L. When latching is enabled, FAI is active; it will remain active until reset. A reset is achieved if FAI is deactivated and the latching input is temporarily open.



Daisy Chaining

Two AC43 FAI may be daisy chained. The FAI (and latching states) from the primary AC43 will be repeated in the secondary (daisy chained) unit.

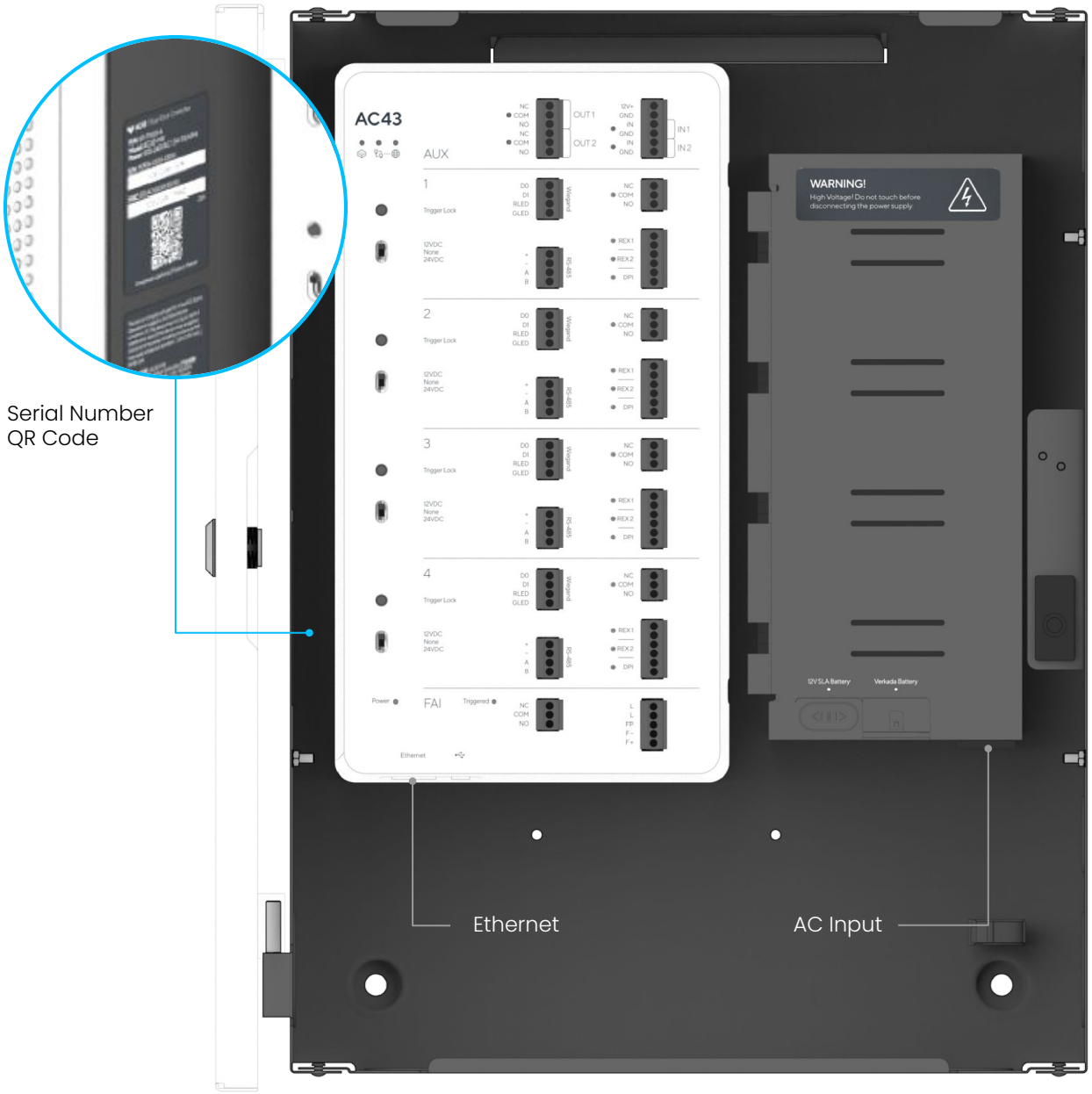


Connect

Connect the AC43 to your network using the Ethernet port located at the bottom of the controller.

Connect the AC43 power supply to grounded power outlet using the provided AC cord (100-240VAC). For strain relief, a ¾" (19mm) or 1 ¼" (32mm) bushing shall be used depending on the knockout selected for AC cord routing.

To add the AC43 to your Verkada Command account, enter the serial number printed on the AC inlet (or the order number) to the "Add Device" page: command.verkada.com/add-device



Anti-Passback

The AC43 supports anti-passback, allowing you to increase the security of an area by ensuring that a user properly enters the area before exiting, and properly exits the area before entering again.

Using anti-passback, you can prevent a user from entering an area and then passing their badge back to someone else to use to enter the same area. Additionally, anti-passback can help enforce a badge-out policy, whereby a user must badge when exiting an area or else they will violate anti-passback when they try to re-enter.

Anti-passback rules are based on the configuration of an access control area. An access control area is configured for a site, and is defined by a set of entrance doors and exit doors.

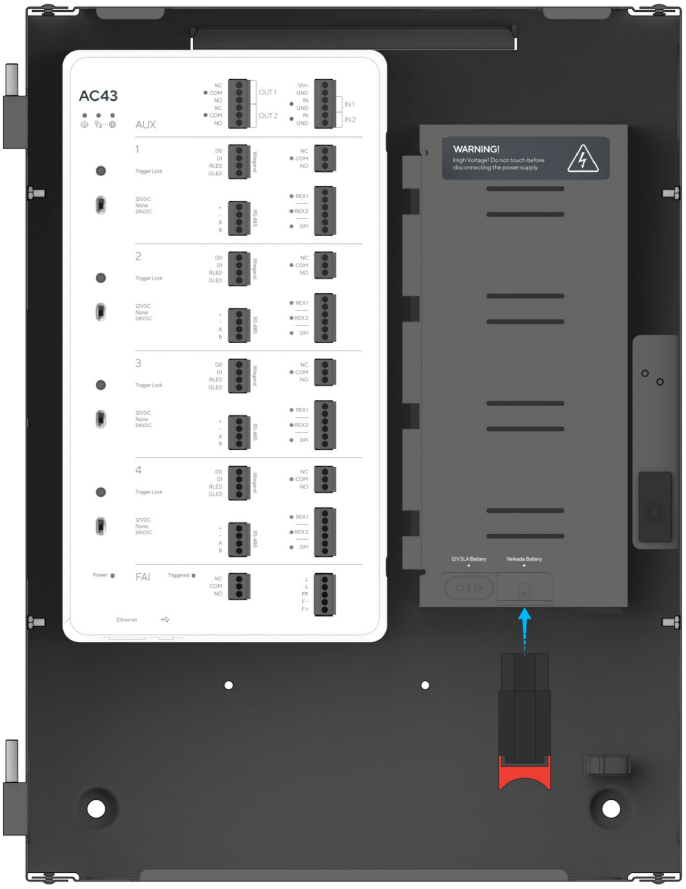
To set up anti-passback, follow the guides below in this order:

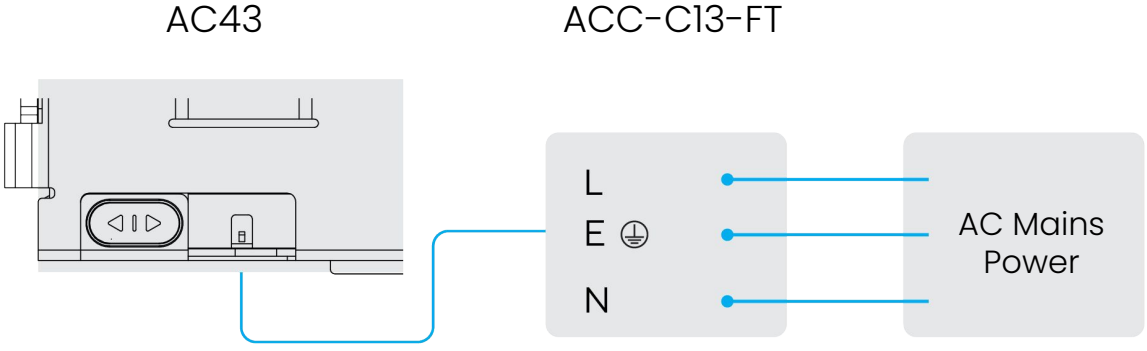
1. Configure an access control area.
2. Secure the access control area with anti-passback.

ACC-C13-FT Field Wiring Accessory (Optional)

Verkada ACC-C13-FT allows for field wiring optionality.

- Unscrew the head of the ACC-C13-FT and attach power cables to respective terminals. Screw the head back on.
- Plug the ACC-C13-FT into the C13 inlet.





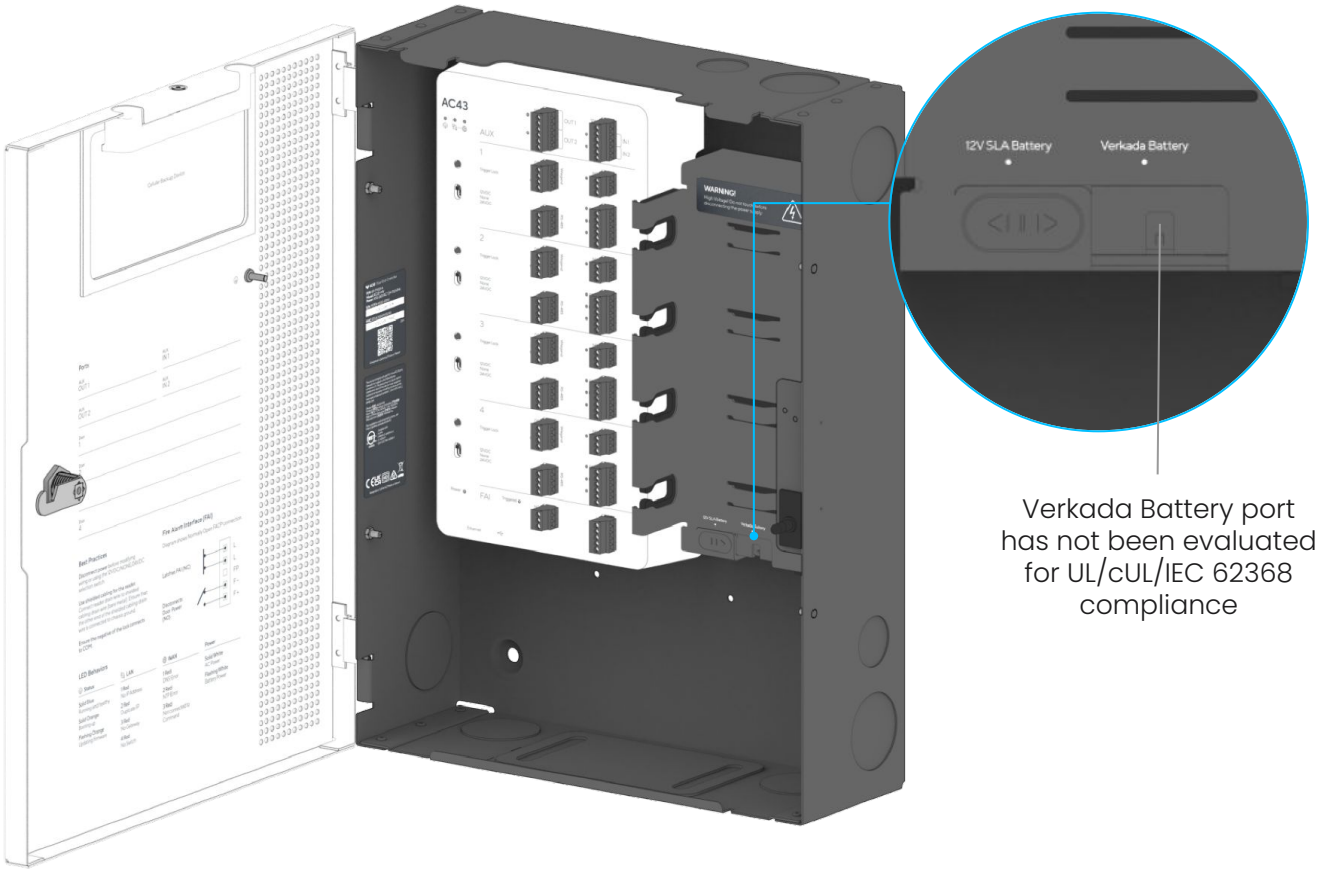
Battery backup* (Optional)

A 12 volt Lead Acid battery can be connected to the connectors located in the AC43 for backup power. We recommend using a 4.5Ah sealed lead acid rechargeable battery that is UL1989 recognized. We offer such a battery, ACC-BAT-4AH, which can fit in the bottom of the enclosure and can be connected using the included SLA Connector. If desired, up to 2 batteries can fit simultaneously.

Only use 12V SLA batteries. If more than one battery is used, they must be wired in parallel.

Important

Failure to properly connect the battery may damage the device.



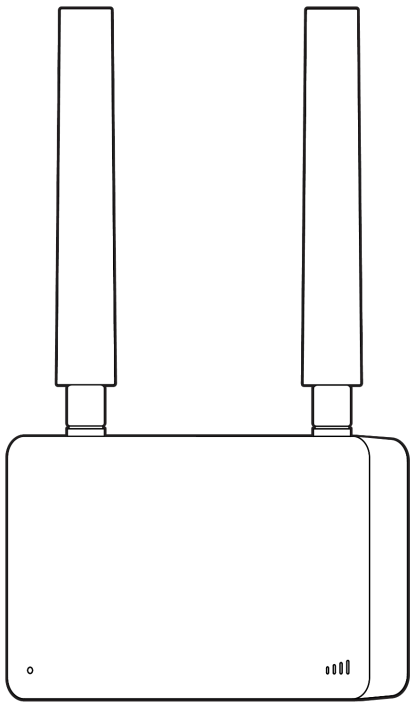
Verkada Battery port has not been evaluated for UL/cUL/IEC 62368 compliance

* Not Evaluated for compliance to UL 294 or ULC 60839-11-1

ACC-CEL-LTE-2 Cellular Backup Communicator* (Optional)

Verkada ACC-CEL-LTE-2 Cellular Backup Communicator is compatible with AC43. The Install Guide for this device can be found here.

- Using the T10 screwdriver that came with ACC-CEL-LTE-2, remove the plastic insert from the door.
- Remove the ACC-CEL-LTE-2 Wall Mount.
- Insert the USB cable that came with ACC-CEL-LTE-2 into the USB port on ACC-CEL-LTE-2.
- Install ACC-CEL-LTE-2 into the BP52 door. Magnets will temporarily hold the unit in place until the security screw has been tightened.
- Install the USB cable into the main panel.
- Zip tie the USB cable to the cable management features inside BP52



* Not Evaluated for compliance to UL 294 or ULC 60839-11-1

Appendix

AC43 **Compliance**

Caution	This device is only to be connected to power sources located within the building without routing to outside plants
Note	This equipment is for use in an indoor and a restricted access area.
FCC Statement	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. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. **FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
IC Statement	This device complies with ISED's licence-exempt RSSs. 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. Le présent appareil est conforme aux CNR d' ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.
UL 294 **ULC 60839-11-1**	Troubleshooting: If connected accessories are not operating properly there may be a problem between the accessory connection and panel. Refer to the Recommended Wiring and Recommended Testing sections of this document for guidance. Electronic authorization details - Mobile device operating system requirements: Apple iOS 16.0 or later, Google Android 3.1.6 or later - Mobile app requirements: Verkada Pass App 4.7.13 or later - User verification method: User ID and password - Credential details: authentication/digital signature keys received from wireless electronic credential Tested for compliance using 26bit Wiegand reader and firmware versions listed below AC43-HW: ac43.2026.2.9 AC43-HW-G: fips-ac43.2026.2.9 All connected accessories must be UL Listed for compliance to UL294 and ULC 60839-11-1.

Appendix

Support

Thank you for purchasing this Verkada product. If for any reason you're experiencing issues or need assistance, please contact our 24/7 Technical Support Team immediately.

Sincerely,
The Verkada Team
verkada.com/support