Quick Start Guide

AC02-C1XH-U10 Series

Version: 1.0

1. Cautions

⚠ **Please note the following cautions. Mis-operation may lead to any injury or equipment failure:**

1. Do not energize the system before installation is complete; never carry out installation activities when the system is energized.
2. All peripheral devices must be grounded.
3. The conduits of wires under relay must be matched with metaled conduits, other wires can use PVC conduits.
4. It is strongly recommended that the length of the exposed part of any connection cable should not be longer than **4** mm. Professional clamping tools may be used to avoid unintentional contact of exposed wires to avoid short-circuit or communication failure.
5. It is recommended that the card readers and the buttons should be installed at a height of **1.4m-1.5m** above ground.
6. It is recommended to use the power supply for the control panel, and external power supply for each lock.
7. The appliance shall be installed and wired in accordance with the national electrical code and by qualified personnel only.

Description of normal working state:

Connect the system to the power supply. If the system works properly, the POWER indicator (red) is lit constantly and the RUN indicator (green) flashes.

Valve regulated lead-acid battery:

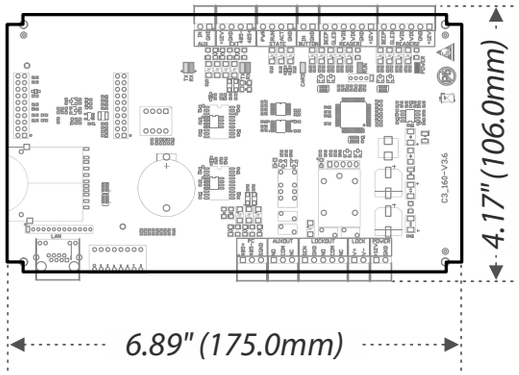
- Constant voltage charge voltage regulation Cycle use: 14.5V to 14.9V(25)
- Initial current: less than 2.88A
- Standby use: 13.6V to 13.8V(25)
- Capacity: 12V, 7.2Ah/20hr
- Battery Type: LC-RA127R2T1

Cautions:

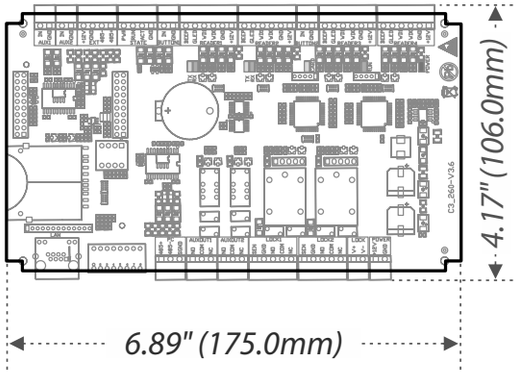
- Do not charge in a gas tight container
- Do not short the battery terminals
- Do not incinerate
- Do not attempt to disassemble the battery
- Flush with water at once if contact is made with electrolyte (Acid).

2. Product Dimension

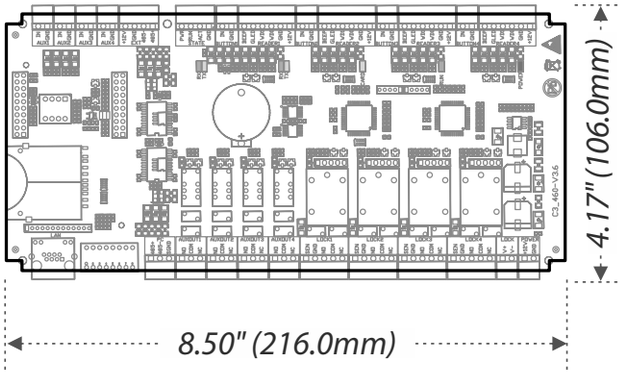
AC02-C11H-U10



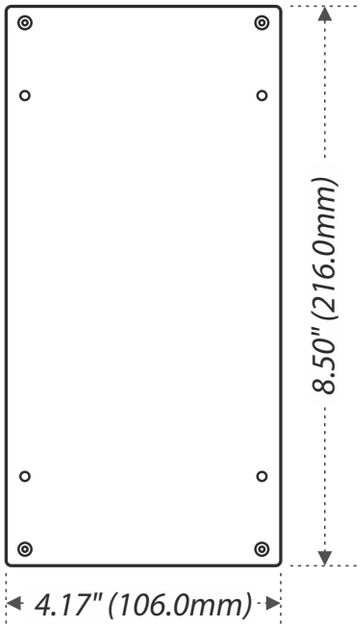
AC02-C12H-U10

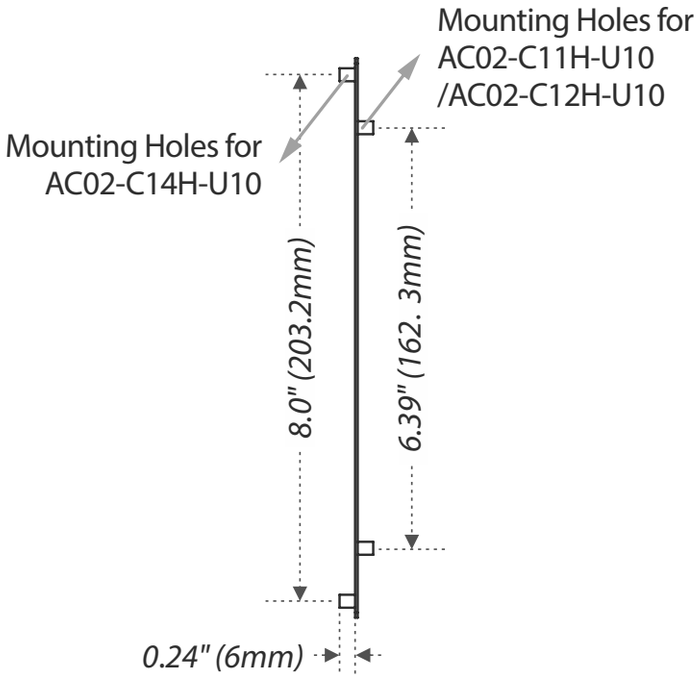


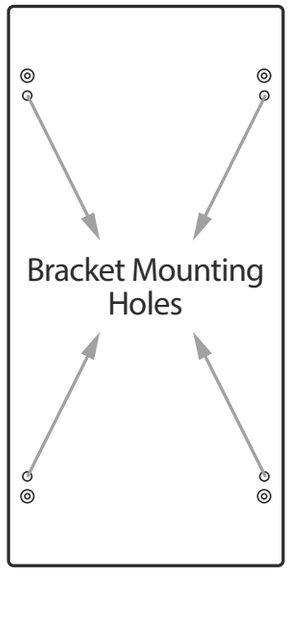
AC02-C14H-U10



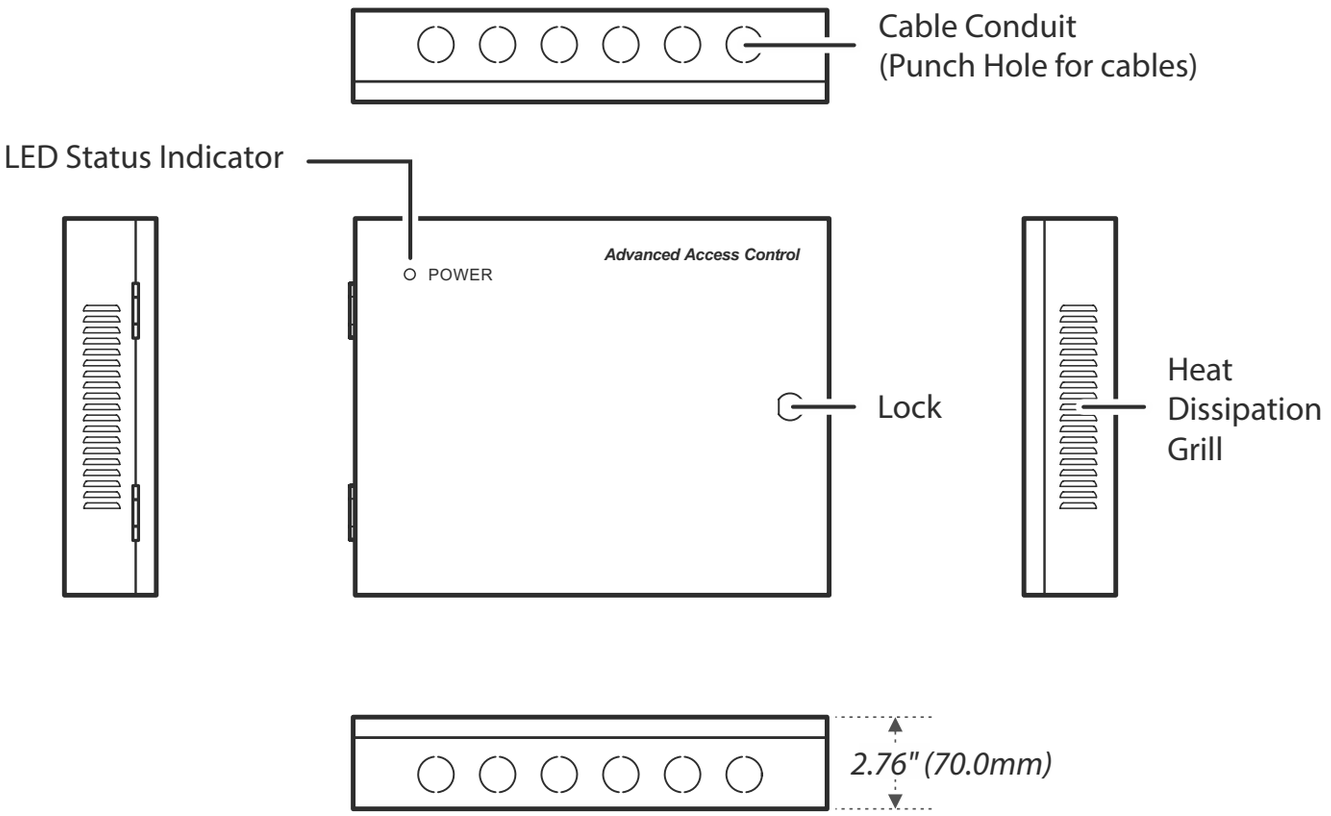
Mainboard Bracket

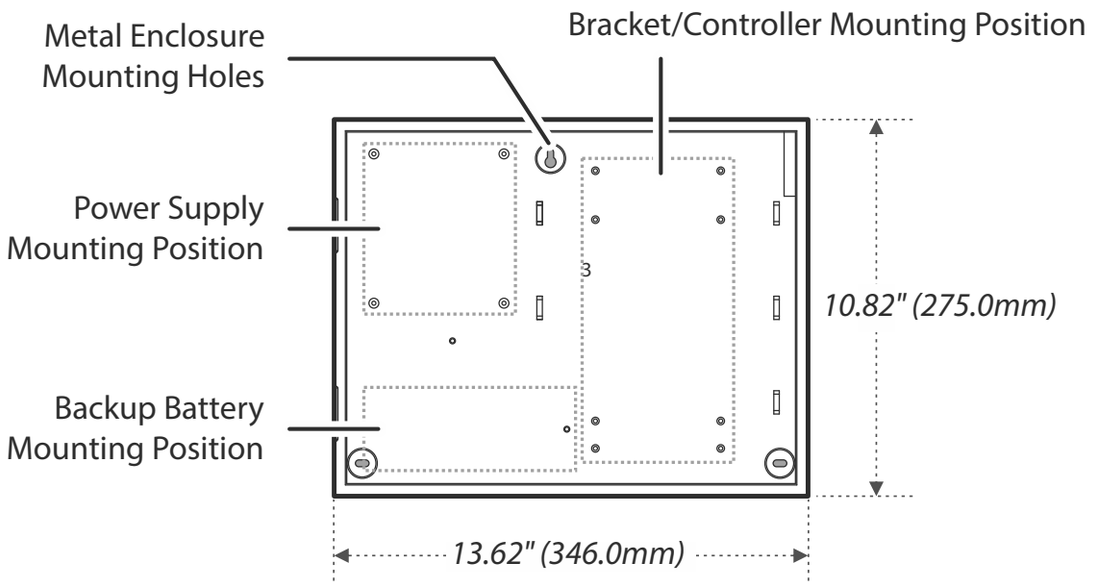






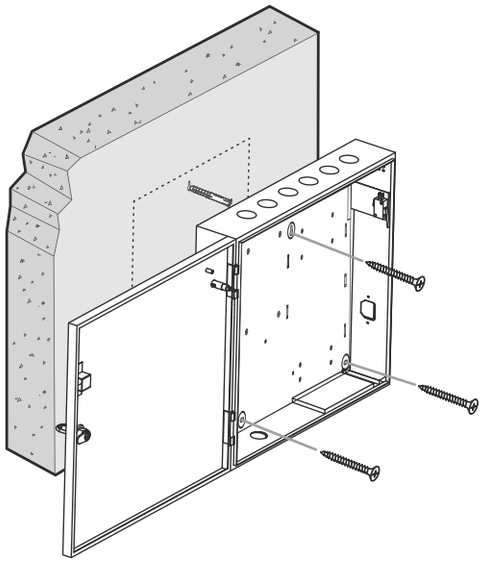
Metal Enclosure

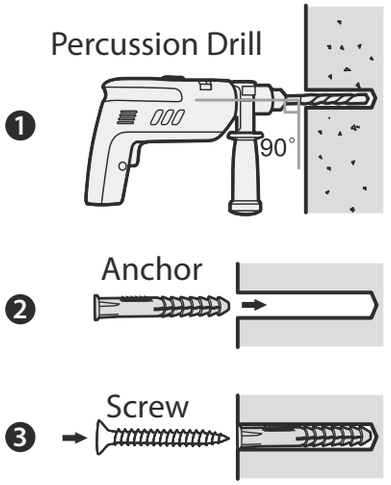


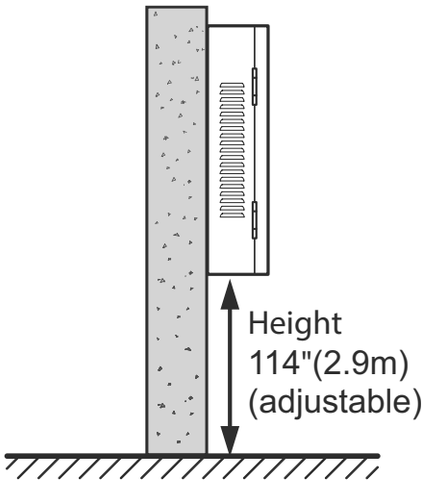


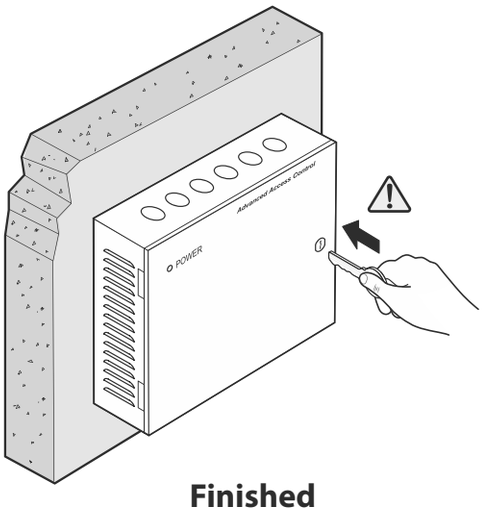
3. Installation of Metal Enclosure on the wall

1. According to the mounting holes position of the metal enclosure. Drill three mounting holes in a suitable spot on the wall and make sure it is about 114 inches (2.9m) above the ground, which can be adjusted according to actual needs. Take care to leave at least 3.937 inches (100 mm) on the left side of the metal enclosure.
2. Place the Anchors in the mounting holes.
3. Then f ix the metal enclosure with the self-tapping screws as shown below.









Finished

Note: The metal enclosure is equipped with an tamper alarm switch. When it is working normally, please keep the enclosure closed.

4. LED indicators, Wires, Auxiliary Input and Output

1) Understanding the LED indicators:

- LINK indicator (green): Always (green) indicates TCP/IP communication is proper.
- ACT indicator (yellow): Flashing indicates data is in transmitting through TCP/IP communication.
- TX indicator (yellow): Flashing indicates it is sending data through RS485 communication.
- RX indicator (green): Flashing indicates it is receiving data through RS485 communication.
- Auxiliary output indicator (green): Always (green) indicates it is in use.
- Lock indicator (green): Always (green) indicates lock is open.
- POWER indicator (red): Always (red) indicates control panel power is on.
- RUN indicator (green): Flashing indicates the system works normally.
- CARD indicator (yellow): Flashing indicates card is punched on reader.

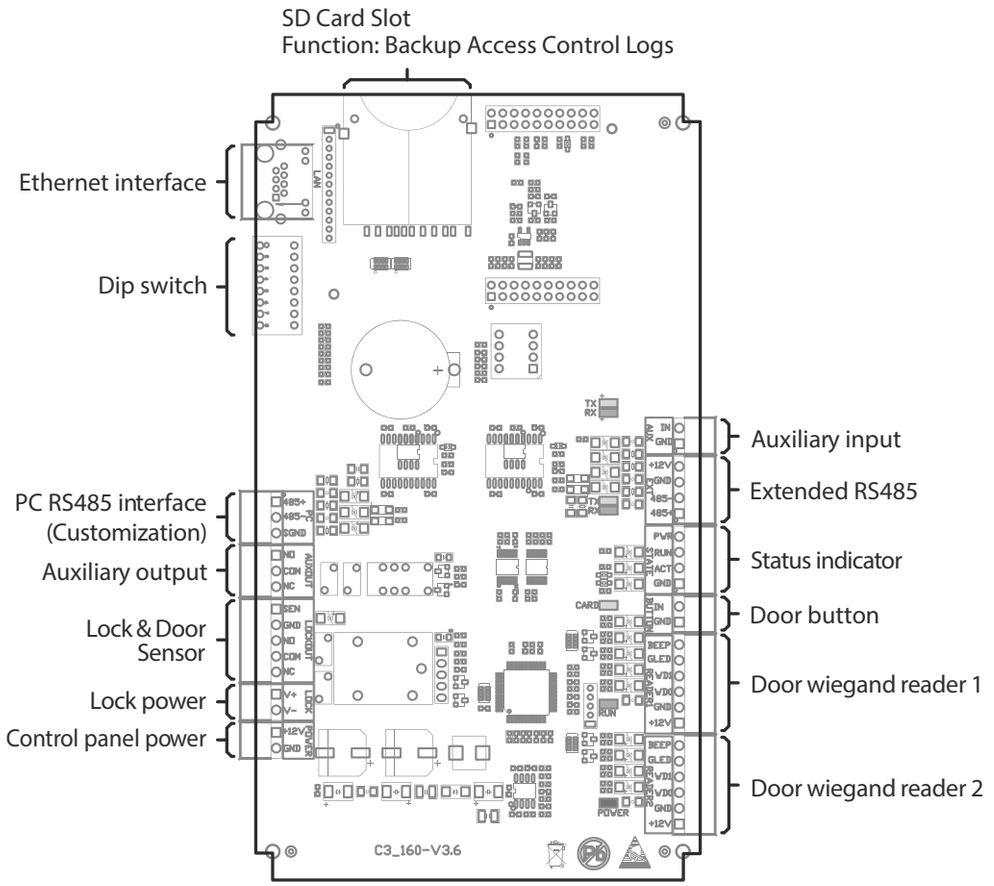
2) Recommended use of wires:

- Use 2-conducotor power cord
- Use 6-conductor wire between wiegand reader and control panel (RVVP 6*0.5mm) (Choose the appropriate cord for the interface you connect, such as 6, 8, 10 cord.)
- Use 4-conducotor lock power cord (RVV 4*0.75mm)
- Use 4-conducotor lock power cord (RVV 4*0.75mm)
- Use 2-conducotor switch power cord (RVV 2*0.5mm)

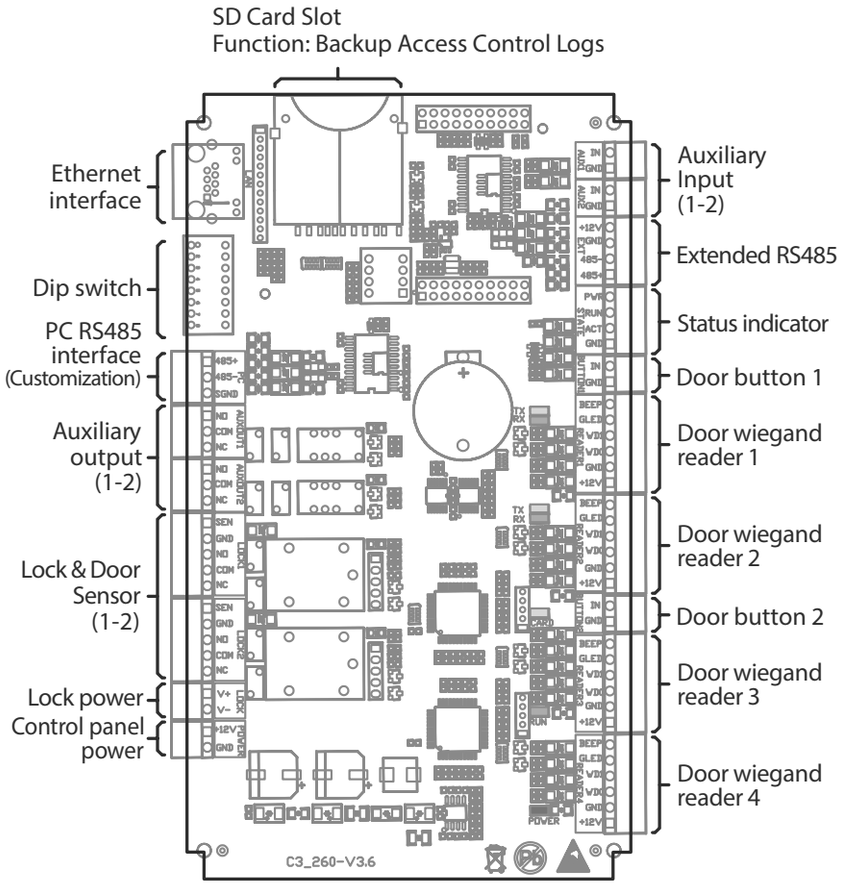
3) The auxiliary input may be connnected to infrared body detectors, alam switches, etc.

4) The auxiliary output may be connected to door bells, alarms, etc.

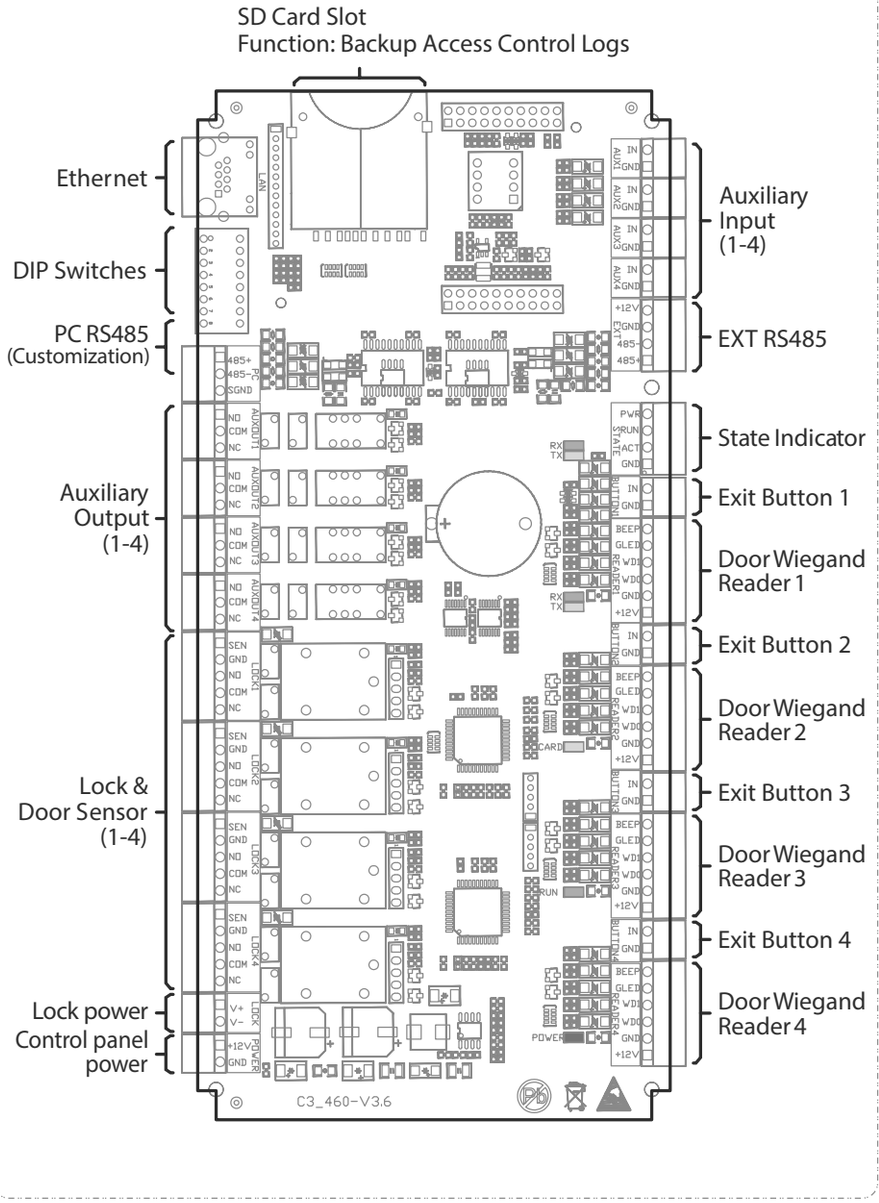
AC02-C11H-U10



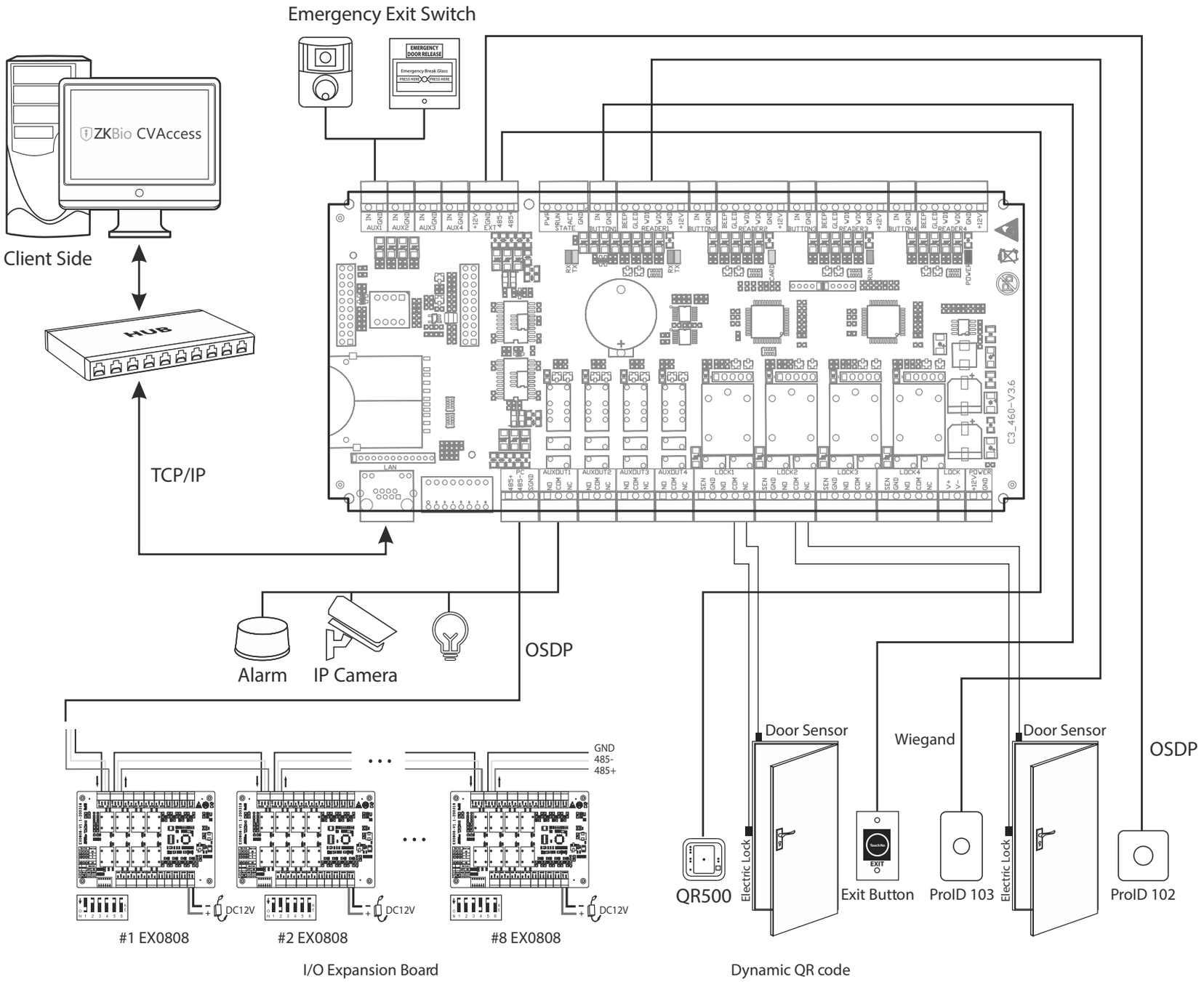
AC02-C12H-U10



AC02-C14H-U10

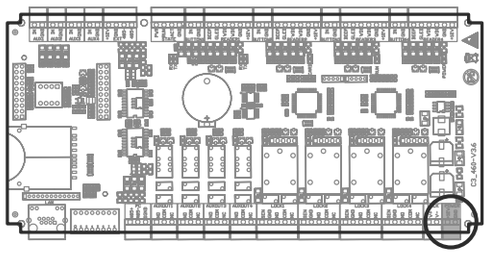


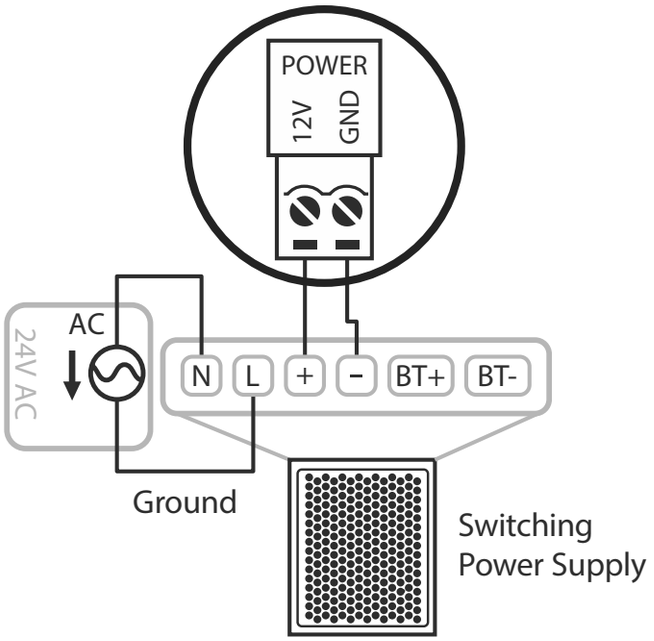
5. Controller System Installation



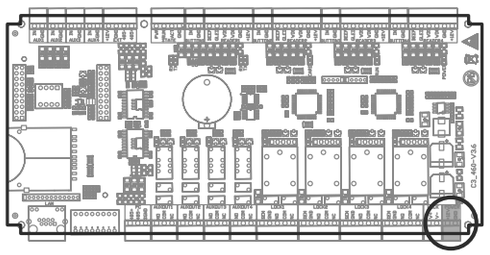
6. Power Connection

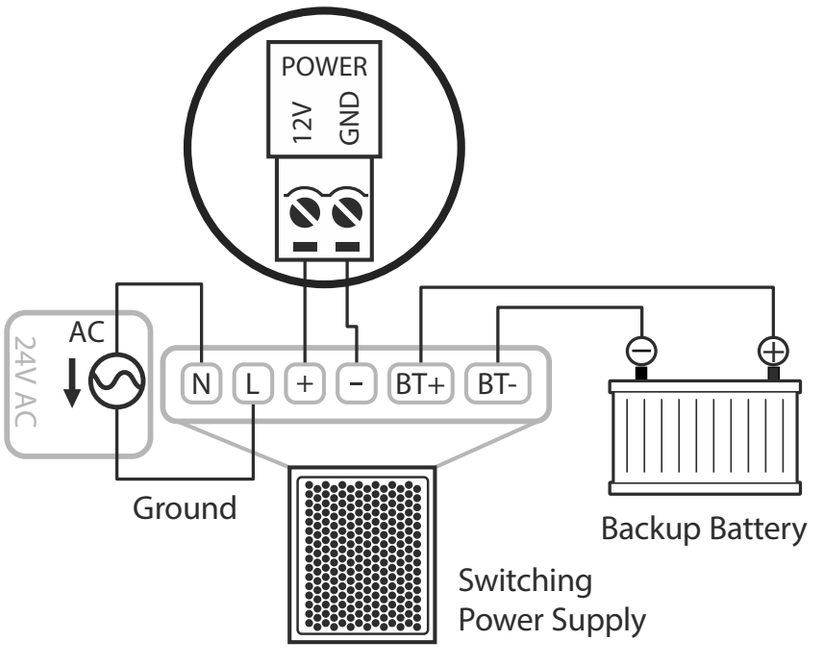
❖ Without Backup Battery





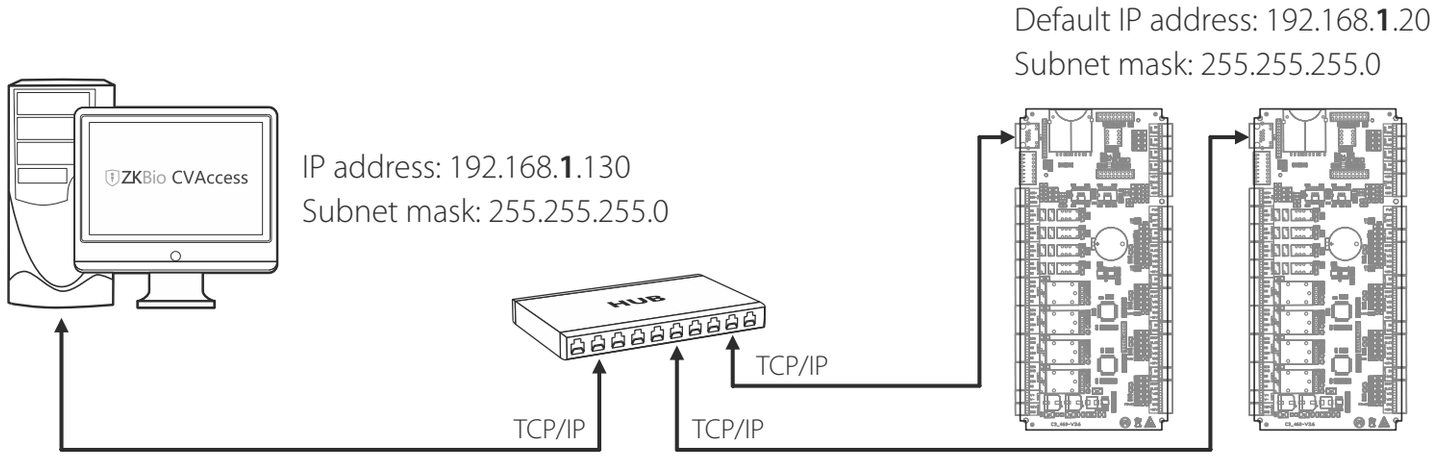
❖ With Backup Battery





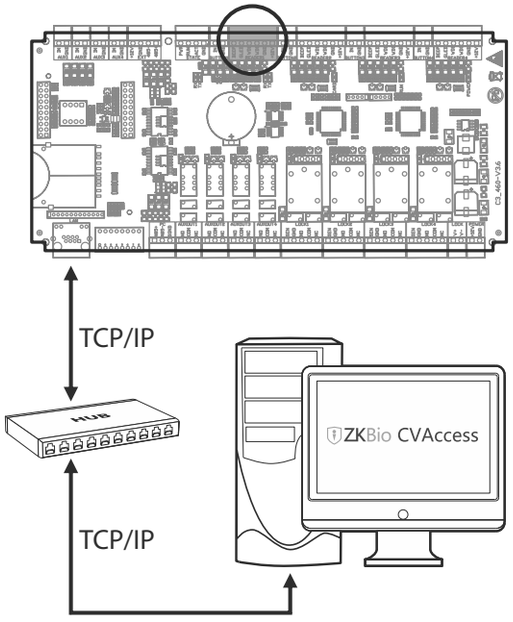
7. Ethernet Connection

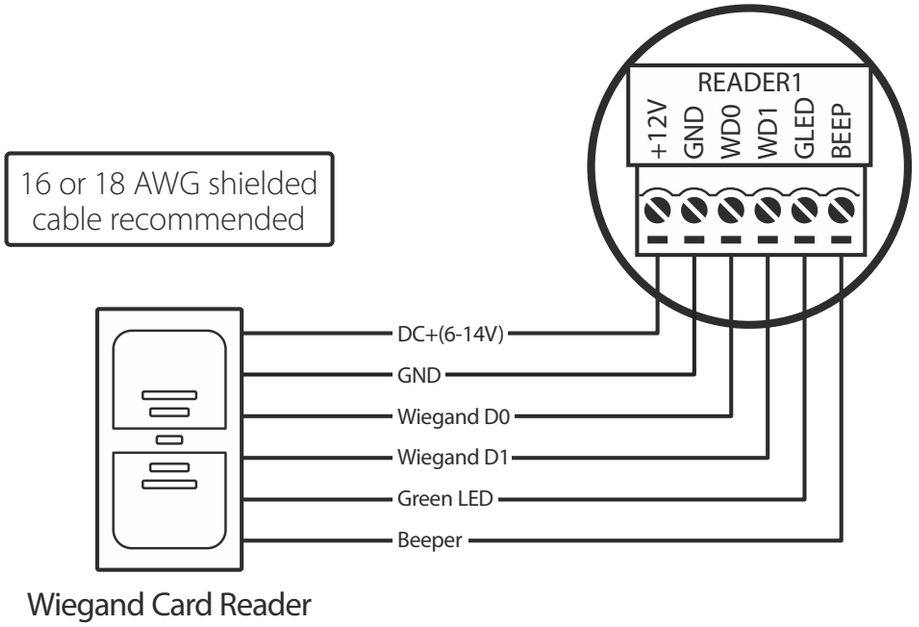
Establish the connection between the device and the software using an Ethernet cable. An illustrative example is provided below:



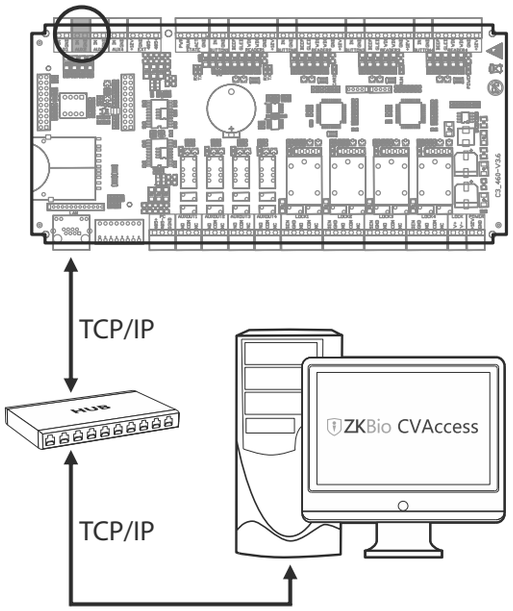
Note: In LAN, IP addresses of the server (PC) and the device must be in the same network segment when connecting to the software.

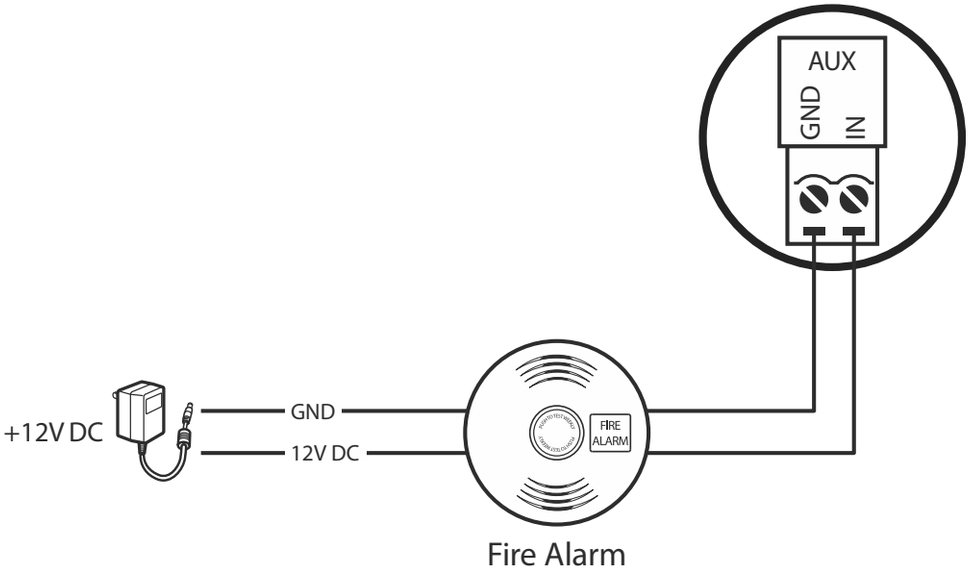
8. Wiegand Connection



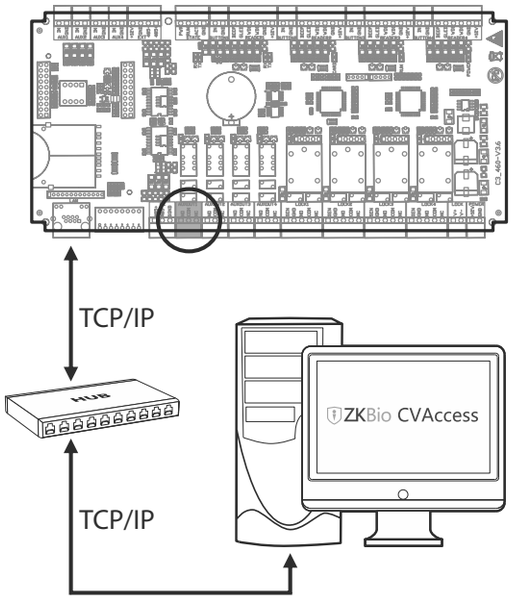


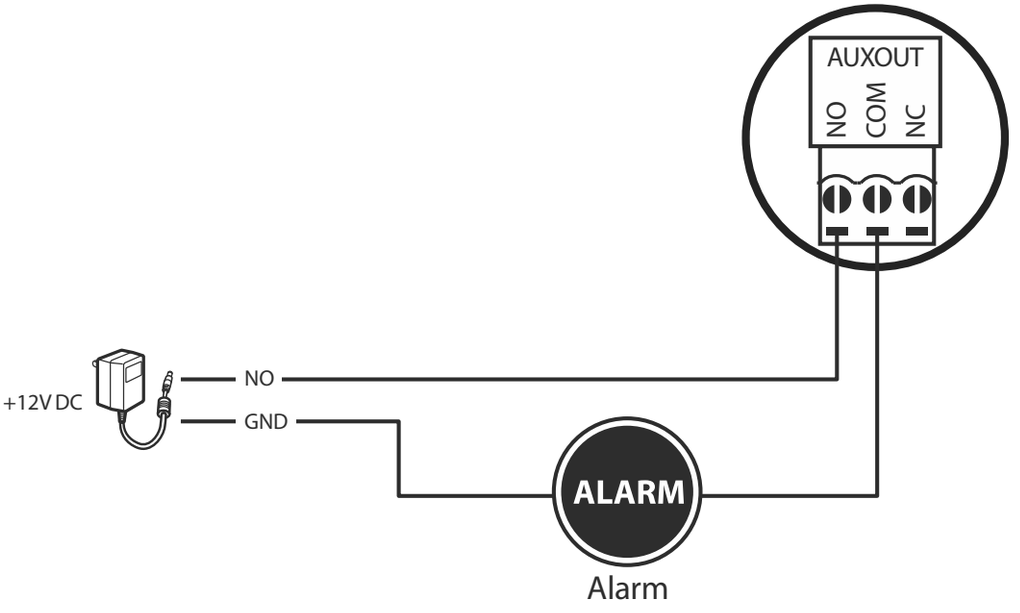
9. Auxiliary Input Connection



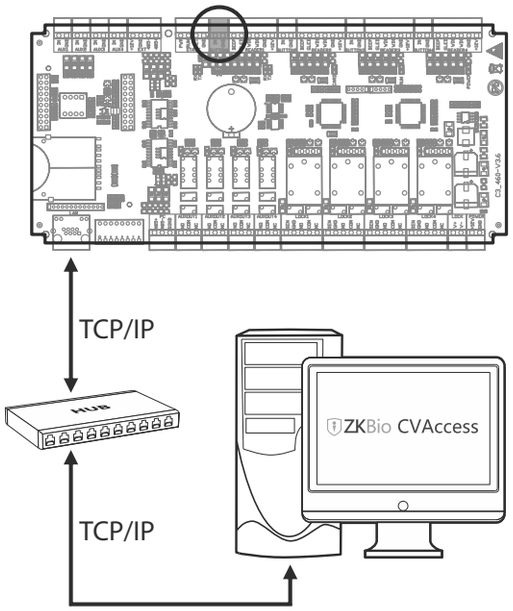


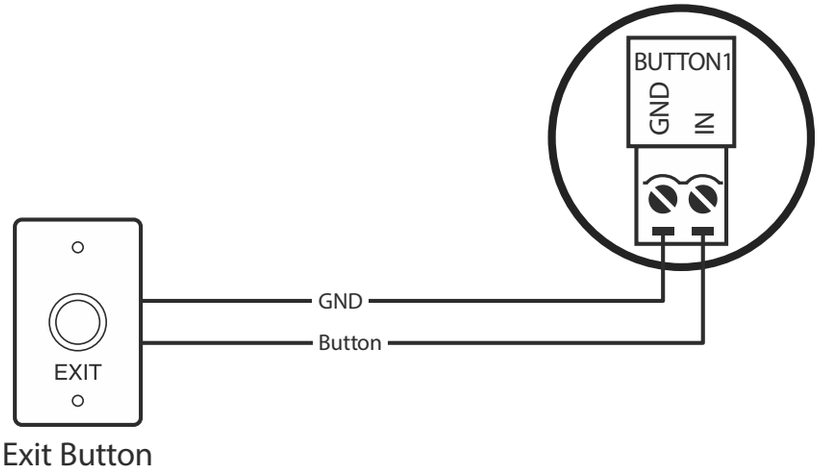
10. Auxiliary Output Connection



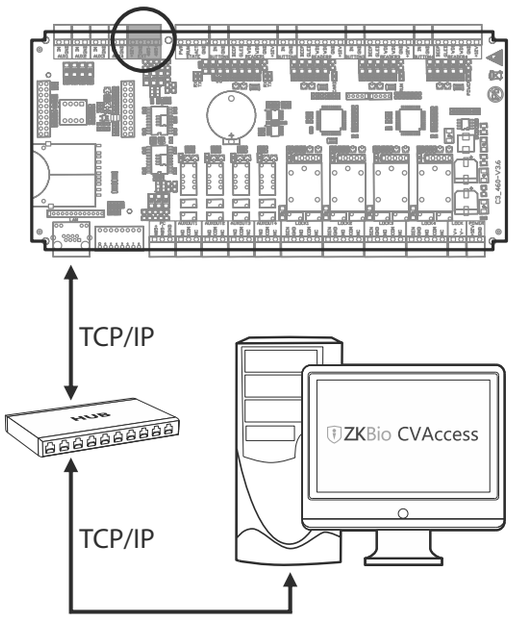


11. Exit Button Connection

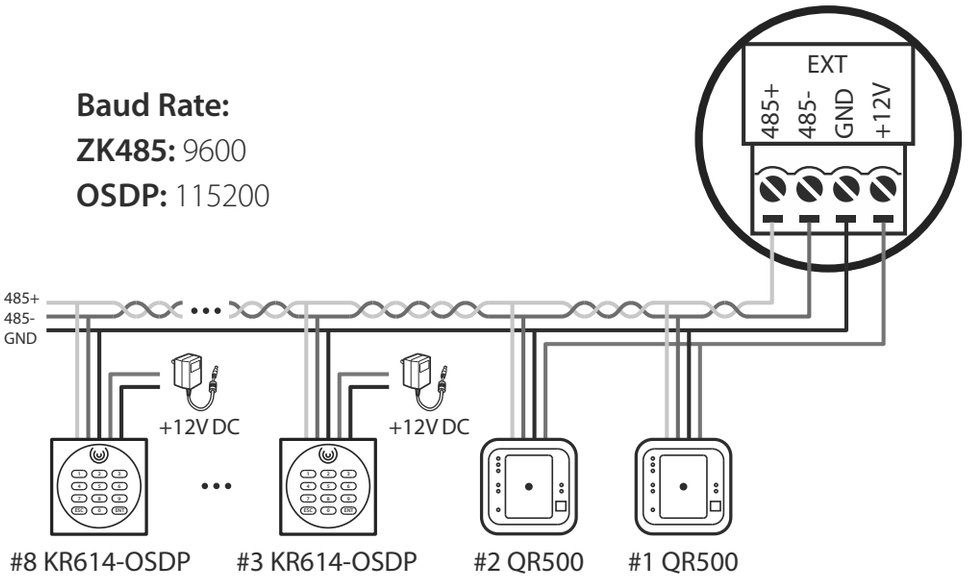




12. RS485 Connection



Baud Rate:
ZK485: 9600
OSDP: 115200



Controller Supported Reader Models:

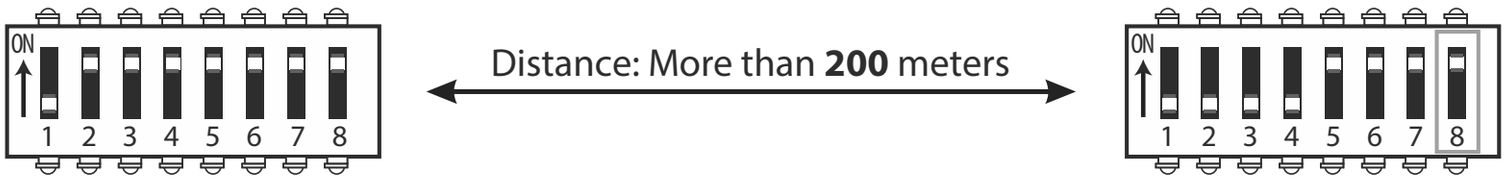
Reader Model	485 Unencrypted	485 Encryption	OSDP Unencrypted	OSDP Encryption
ProID100 Series	✓	✗	✓	✗
QR50/QR500/QR600	✓	✓	✗	✗

Remarks:

1. ✓ means connectable, ✗ means not connectable.
2. In 485 communication encryption mode, the ProID100 reader supports tamper alarm function. When the reader is illegal tampering, it will send a tamper signal to the controller via 485, and the controller will report to the software to form a tamper alarm event. Users can configure the alarm linkage on the software side and connect the alarm to the auxiliary output. Encryption is turned on on the software side via the **Access >Access Device > Reader > Encrypt** path.

Important Notes:

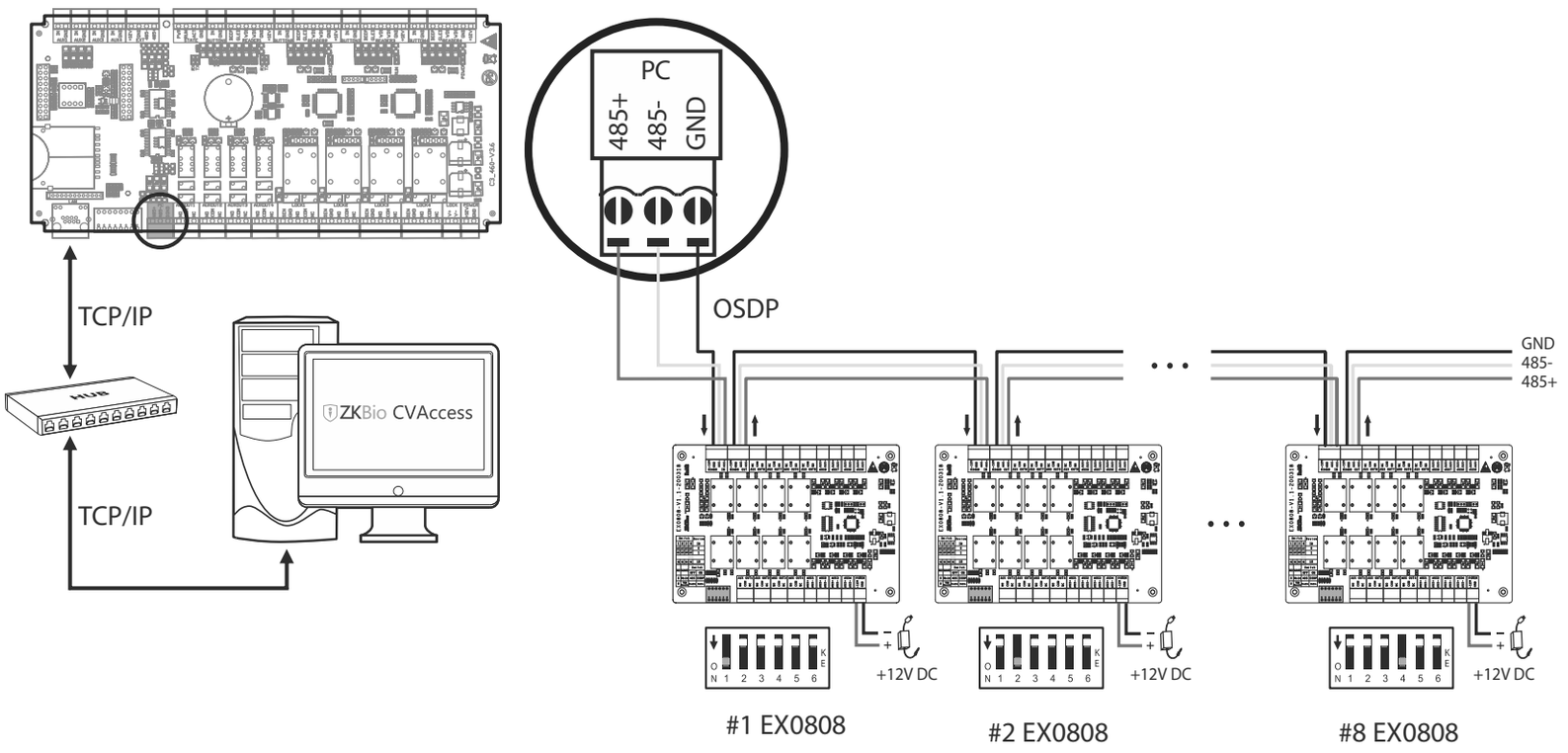
1. RS485 communication wires should be a shielded twisted pair cable. RS485communication wires should be connected in a bus cascade topology instead of a star topology, to achieve a better shielding effect by reducing signal reflection during communications.
2. A single RS485 bus can connect up to 63 access control panels, but preferably 32 is recommended maximum.
3. To eliminate signal attenuation in communication cables and suppress interference, if the bus is longer than 200 meters, set the number **8** DIP switch to the **ON** position. The number 8 DIP switch is for setting the RS485 termination resistance. This is equivalent to a parallel connection of one 120ohm resistance between the 485+ and 485- lines.



SINGLE AC02-C1XH-U10

MULTI AC02-C1XH-U10

13. Connecting EX0808 through PC485

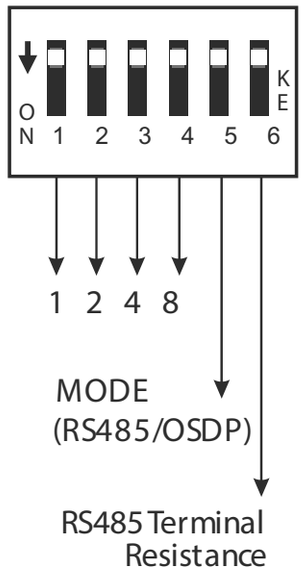
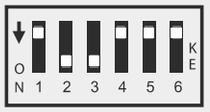
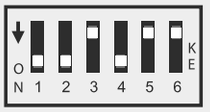
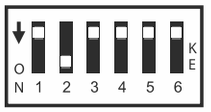
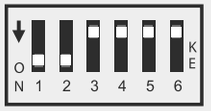
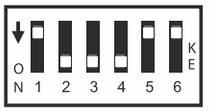
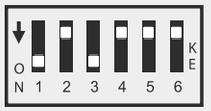
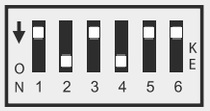
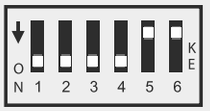


Important Notes:

1. Configure the **ZK485** protocol through the PC485 port to connect up to eight EX0808 expansion boards to expand a certain number of auxiliary inputs and auxiliary outputs.
   Note: *Set DIP switch **#5** of the expansion board to the **OFF** position.*
2. Configure the **OSDP** protocol through the PC485 port to connect up to eight EX0808 expansion boards to expand a certain number of auxiliary inputs and auxiliary outputs.
   Note: *Set DIP switch **#5** of the expansion board to the **ON** position.*
3. The RS485/OSDP address of each EX0808 is set via the DIP switch before power is applied.
4. Each EX0808 requires a separate power supply. Up to eight auxiliary input devices and eight auxiliary output devices can be connected to one EX0808.

Note: *PC485 communication function is a customized function, not standard, please contact your dealer if you need it.*

❖ DIP Switch Setting for RS485/OSDP Communication

Description	RS485 Address	DIP Switch	RS485 Address	DIP Switch	RS485 Address	DIP Switch
	1		6		11	
	2		7		12	
	3		8		13	
	4		9		14	
	5		10		15	

Important Notes:

There are six DIP switches on the EX0808 expansion board and their functions are:

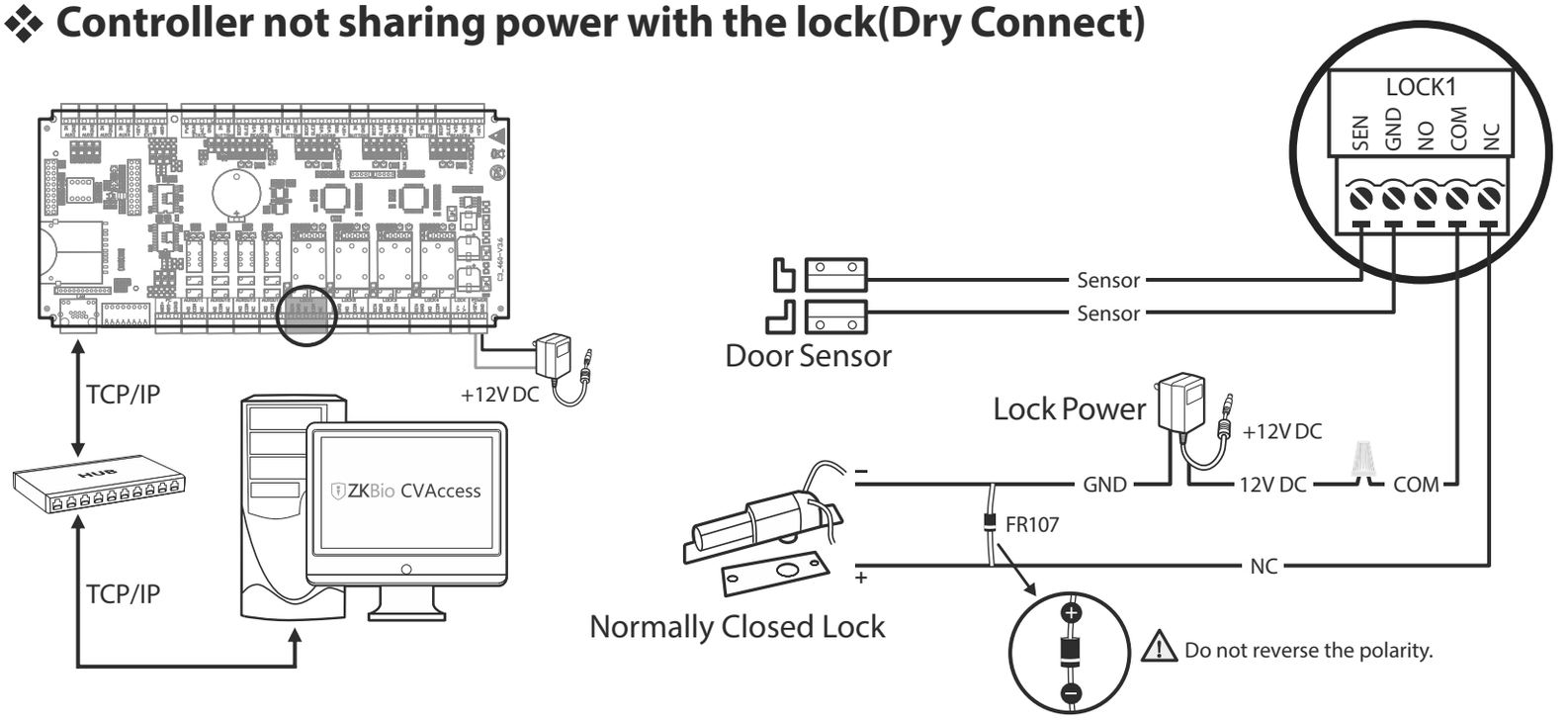
1. Switches 1-4 are used to set the RS485/OSDP addresses.

2. Switch 5 is for RS485/OSDP mode switching. When set to **OFF**, RS485 mode is used, and when set to **ON**, OSDP mode is used.

3. If the cable length is more than 200 meters, the switch 6 should be **ON** for noise reduction on long RS485 cables.

14. Lock Relay Connection

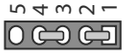
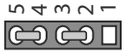
❖ Controller not sharing power with the lock(Dry Connect)

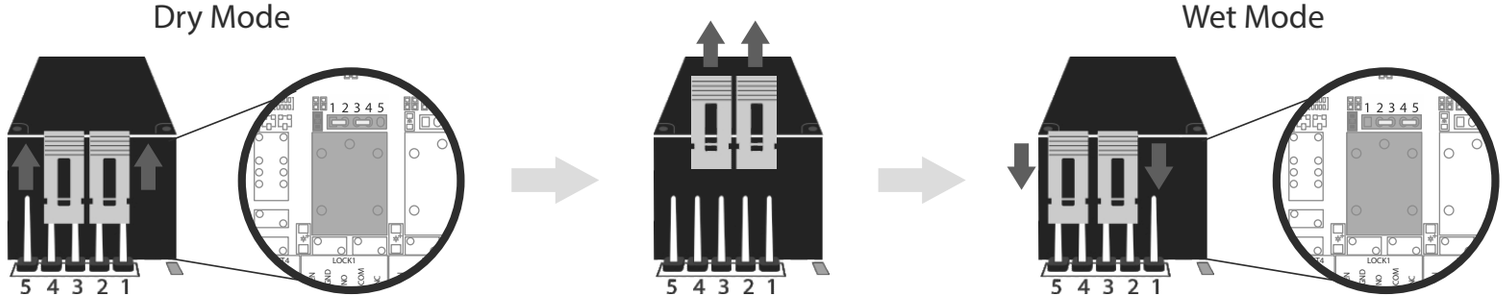


❖ Switching dry and wet modes

Important Notes:

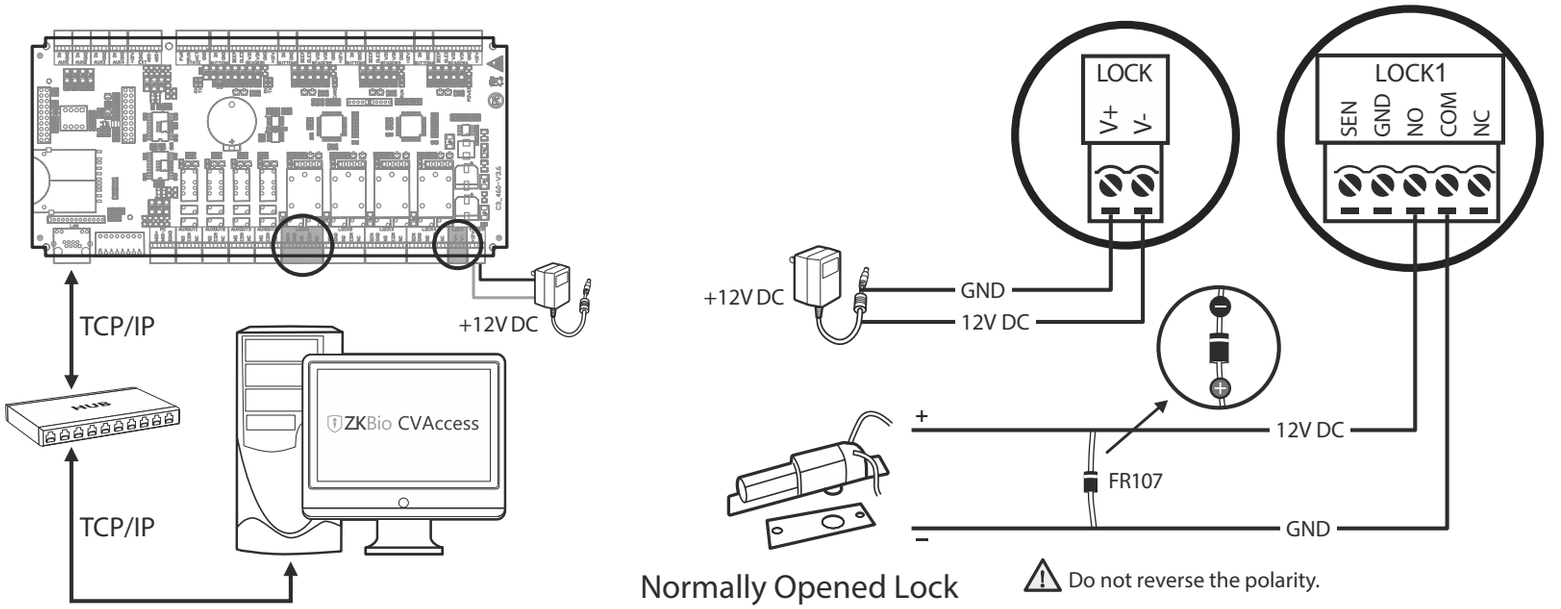
Dry Mode supports separate power supply for the lock using an external independent power supply.
Wet Mode supports the lock sharing power with the controller. The factory default jumper setting is dry mode. Switch between wet and dry mode by following the steps below.

1. Select the appropriate lock relay and locate its jumper on the controller.
2. Remove the jumpers and change the jumper from  to  .
3. Once this is done you can follow the wiring of the controller sharing power with the lock.

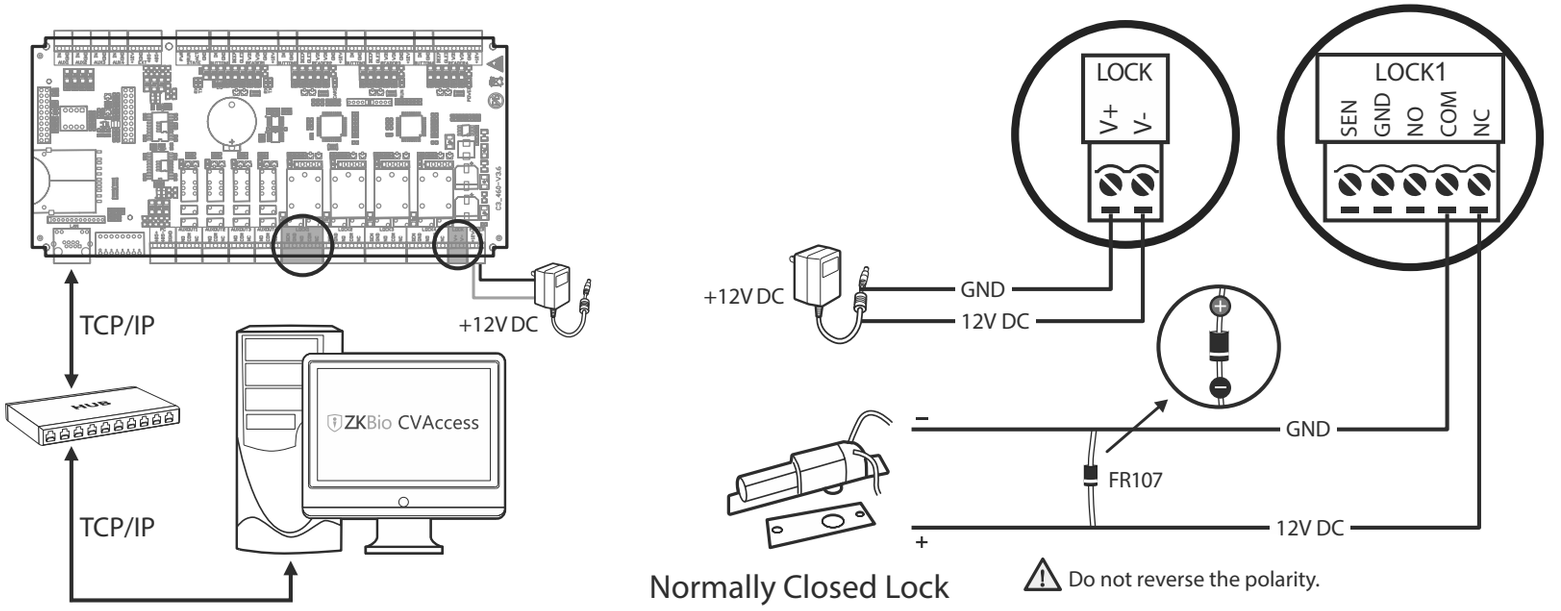


❖ Controller sharing power with the lock(Wet Connect)

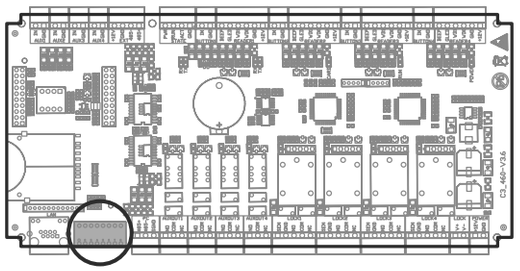
Normally Opened Lock Powered From Lock Terminal:

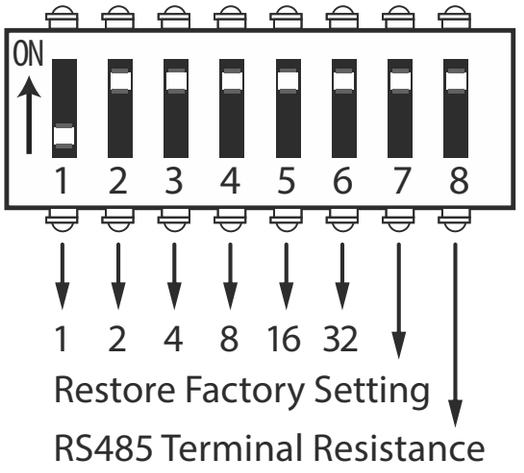


Normally Closed Lock Powered From Lock Terminal:



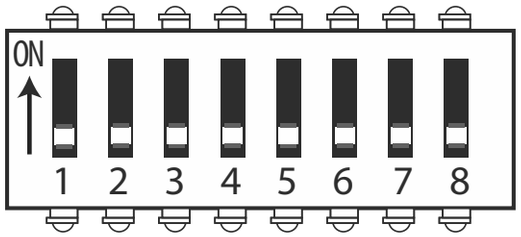
15. DIP Switch Setting



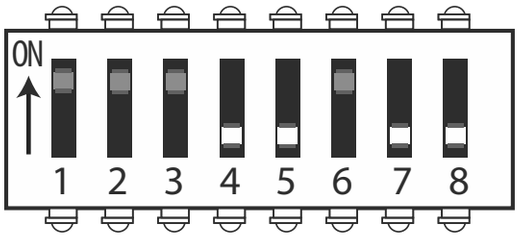


1. Number 1-6 are reserved to set the device number for RS485 communication. The code is binary, and the numbering starts from left to right. When the switch is set to ON position, it indicates 1 (on); when the switch is set downwards, it indicates 0 (OFF).

2. For example, to set a device number 39=1+2+4+32, which corresponds to the binary code 111001, put number 1, 2, 3, and 6 to ON position, as illustrated below.

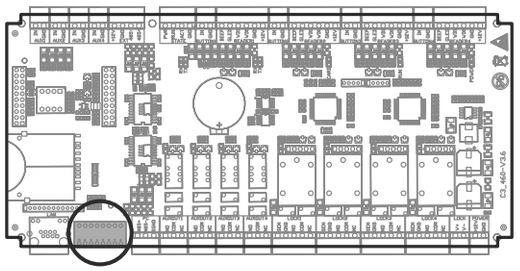


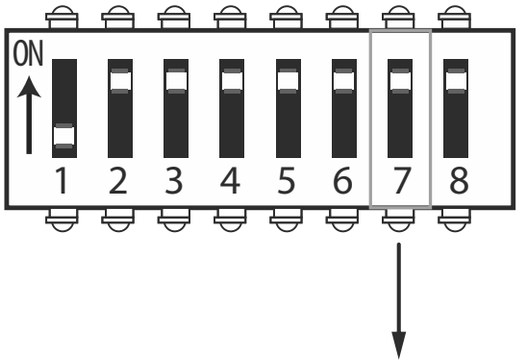
000000



111001

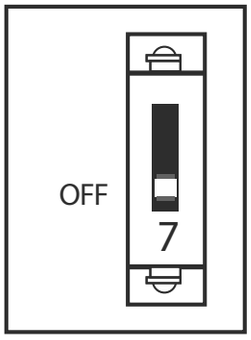
16. Restore Factory Setting



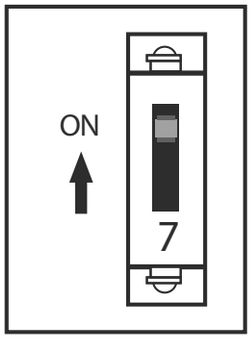


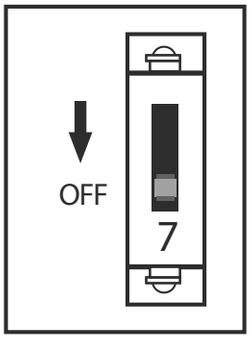
Restore Factory Setting

1. If you forget the IP address of the AC02-C1XH-U10 series panel or the device does not work normally, you can use the number 7 DIP switch to restore it to factory default settings. The parameters which gets reset are device IP address, communication password, gateway, and subnet mask.
2. The switch is OFF by default. When it is moved up and down for three times within 10 seconds and finally returned to OFF position, the factory settings will be restored after the access control panel is restarted.
3. The procedure is shown below.



Default Position





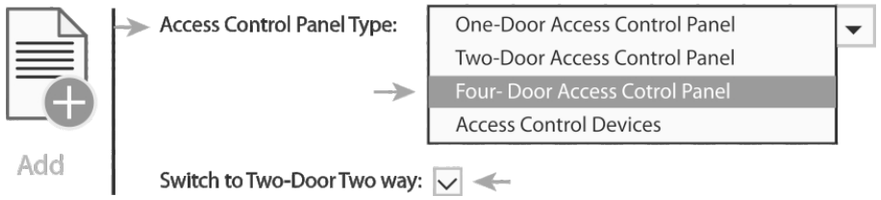
Final Position

To reset factory settings
Turn #7 switch ON and OFF
Repeat process **3** times

17. Troubleshooting

1. How to switch four door one way to two door two way?

- Connect four readers from reader 1 to reader 4.
- Connect two door locks, one connected to LOCK1, another connected to LOCK3.
- In the software conf igure reader 1-Indoor, and reader 2-Outdoor.



2. Can we integrate IP Camera and NVR?

- Currently ZKBiosecurity software supports ZKTeco's IP Cameras and NVR.
- You can associate a camera to the door and setup a linkage for the same.

3. What does it mean when I get a "Wiegand Format Error"?

- Your WD0 and WD1 wiring is reversed.

4. How do I connect a third party reader or a stand-alone reader to a AC02-C1XH-U10 panel?

- Connect the wiegand output to the WD0 and WD1 of the stand-alone readers on the panel's reader port.
  Note: The board can only supply 12 V DC, 300mA power so an external power supply may be required.

5. What is the SD card slot used for?

- SD card, stores transactions from the panel and creates a back up in additional to internal memory.

6. What kind of wire is recommended for the panel?

- 16 or 18 AWG twisted shielded wire is recommended.

7. What is the default IP of the panel?

- 192.168.1.201

8. How long is the device under warranty?

- 2 Years from original purchase date, replacement/repair of hardware under ZK standard warranty requires an evaluation of the failed system by a ZK Technical Support specialist, and the issuance of a Technical Support RMA number.