Installation Guide

F18

Standalone Fingerprint Reader

&

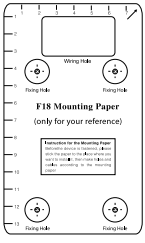
ZKAccess | *Classic* softwear 3.5

ZKAccess®

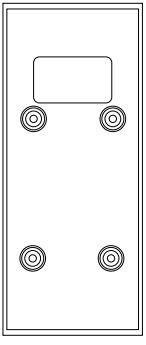
ZKAccess.com

What's in the Box

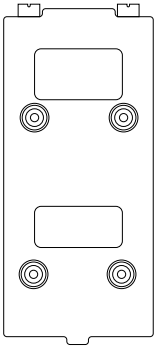
F18



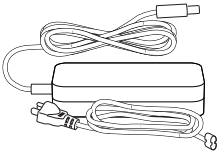
Installation Template



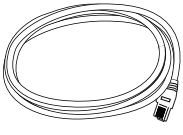
Rubber Gasket



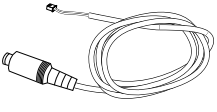
Back Plate



AC Power Adapter

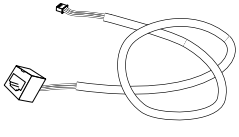


Network Cable



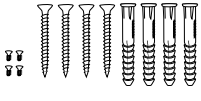
Power Cable Adaptor

Cables

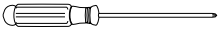


Network Cable Adaptor

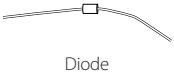
ZKAccess Software



4 Large, Small
Screws & Anchors



Screwdriver



Diode

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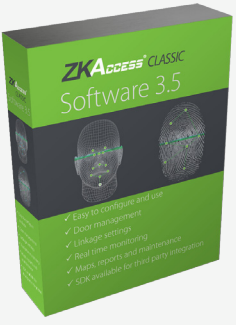

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Software Installation and Setup starts at page 30

Optional accessories

Wiegand Card Reader

Prox Card

FR1200 FP Reader

K1-1 Exit Button

Safety Precautions

The following precautions are to keep user's safe and prevent any damage. Please read carefully before installation

Do not install the device in a place subject to direct sun light, humidity, dust or soot

Do not place a magnet near the product. Magnetic objects such as magnet, CRT, TV, monitor or speaker may damage the device.

Do not place the device next to heating equipment

Be careful not to let liquid like water, drinks or chemicals leak inside the device.

Do not let children touch the device without supervision

Do not drop or damage the device

Do not disassemble, repair or alter the device.

Do not use the device for any other purpose than specified.

Clean the device often to remove dust on it. In cleaning, do not splash water on the device but wipe it out with smooth cloth or towel.

Contact your supplier in case of a problem.

Product PIN Diagram

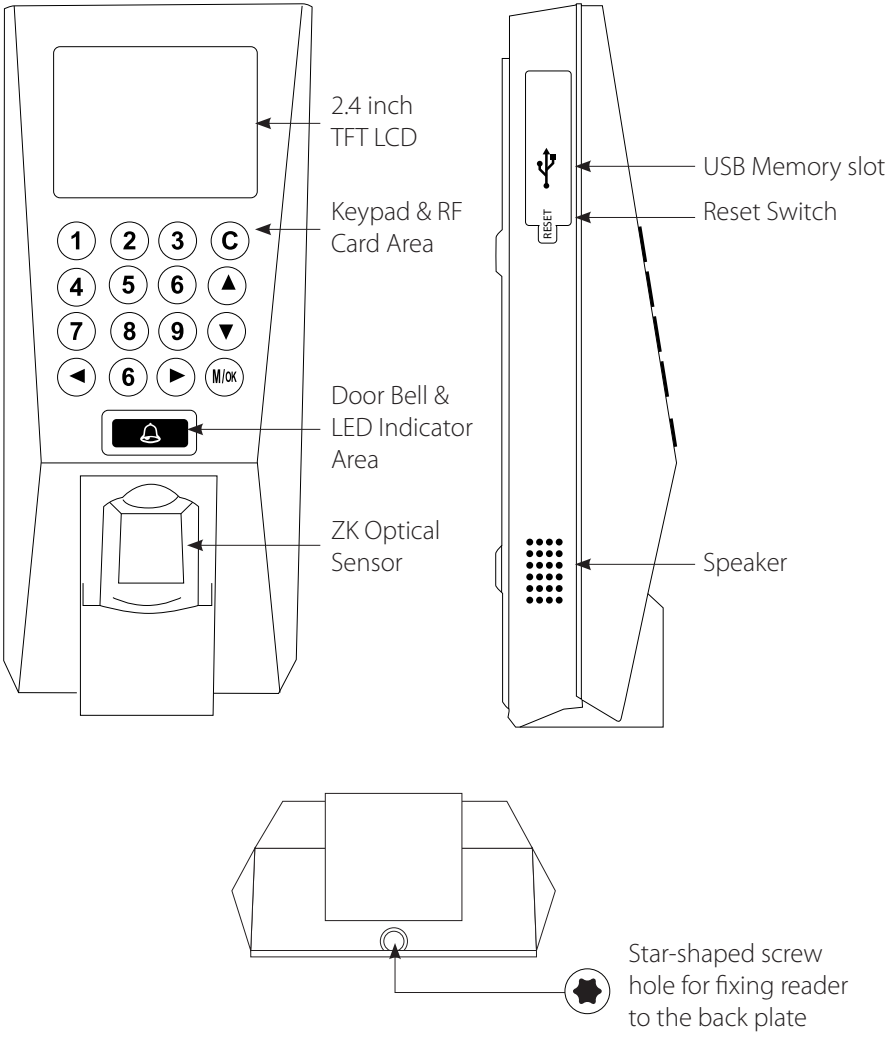
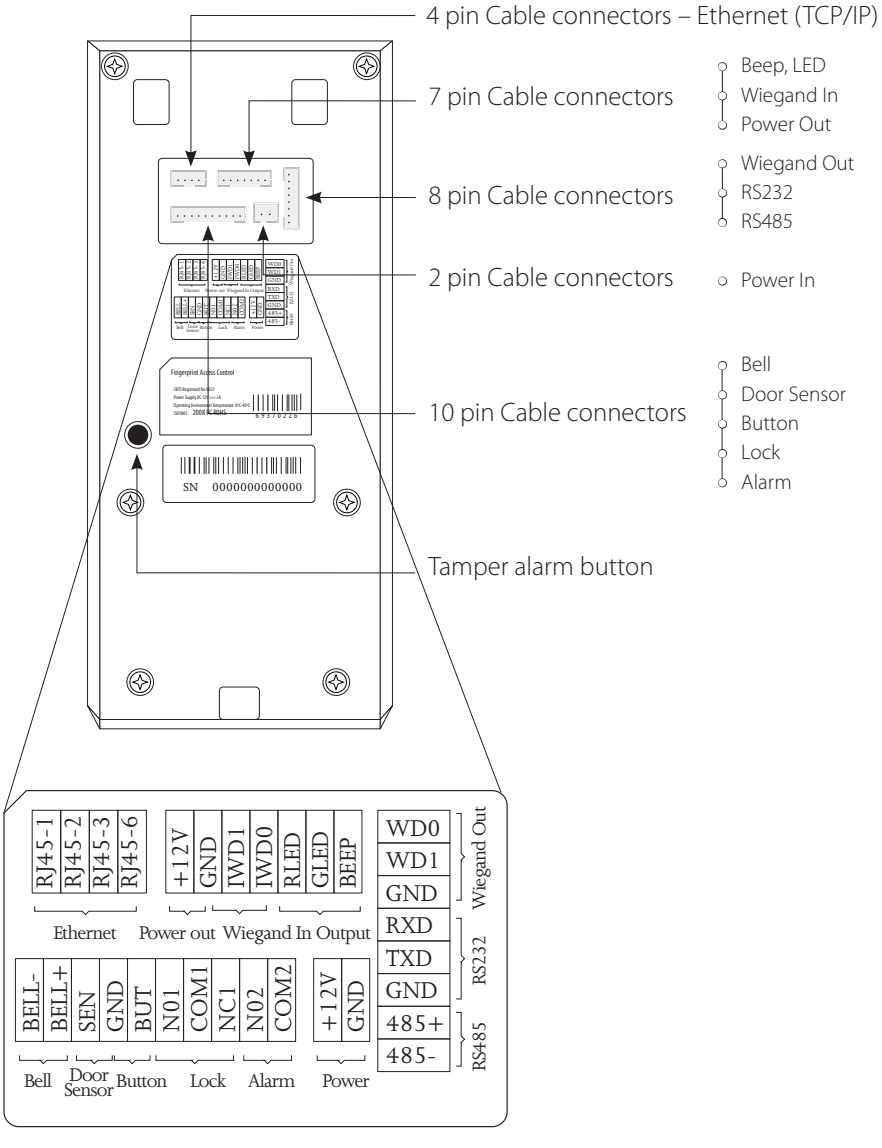
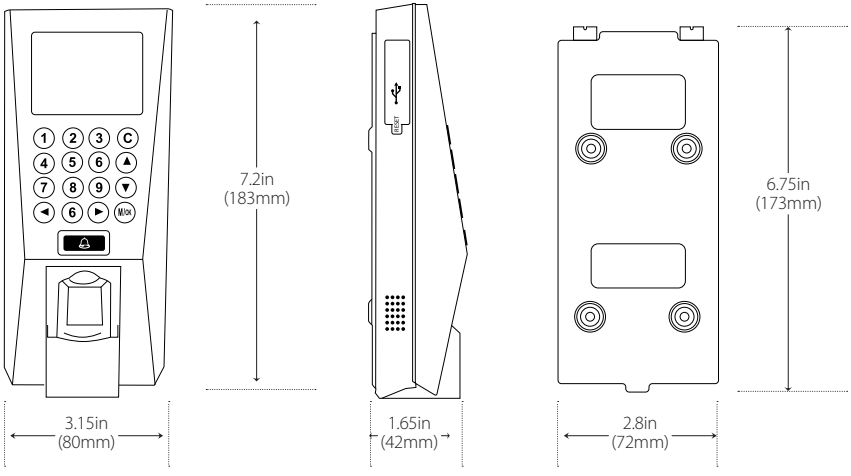


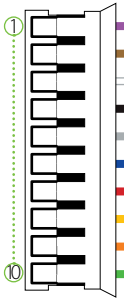
Figure 1


4 pin Cable connectors – Ethernet (TCP/IP)
7 pin Cable connectors
Beep, LED
Wiegand In
Power Out
8 pin Cable connectors
Wiegand Out
RS232
RS485
2 pin Cable connectors
Power In
10 pin Cable connectors
Bell
Door Sensor
Button
Lock
Alarm
Tamper alarm button
SN 0000000000000
RJ45-1
RJ45-2
RJ45-3
RJ45-6
Ethernet
+12V
GND
IWD1
IWD0
RLED
GLED
BEEP
Power out
Wiegand In
Output
WD0
WD1
GND
RXD
TXD
GND
485+
485-
Wiegand Out
RS232
RS485
BELL-
BELL+
SEN
GND
BUT
N01
COM1
NC1
N02
COM2
+12V
GND
Bell
Door Sensor
Button
Lock
Alarm
Power

Product Dimension

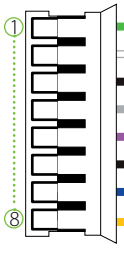


Cables and Connectors



PIN	DESCRIPTION	WIRE
1	Bell-	Purble
2	Bell+	Brown
3	Sensor	White
4	GND	Black
5	Button	Gray
6	NO	Blue
7	COM	Red
8	NC	Yellow
9	Alarm+	Orange
10	Alarm-	Green

- Alarm
- Lock
- Button
- Door Sensor
- Door Bell



PIN	DESCRIPTION	WIRE
1	WD0	Green
2	WD1	White
3	GND	Black
4	232 RX	Gray
5	232 TX	Purple
6	GND	Black
7	485A	Blue
8	485B	Yellow

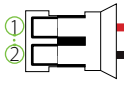
- Wiegand Output
- RS232
- RS485

PIN	DESCRIPTION	WIRE
1	12V	Red
2	GND	Black
3	INWD1	White
4	INWD0	Green
5	RLED	Blue
6	GLED	Gray
7	BEEP	Purple

- Wiegand Output
- LED
- Power Out
- Beep

PIN	DESCRIPTION	WIRE
1	RJ45-1	Yellow
2	RJ45-2	Green
3	RJ45-3	Red
4	RJ45-6	Black

- TCP/IP

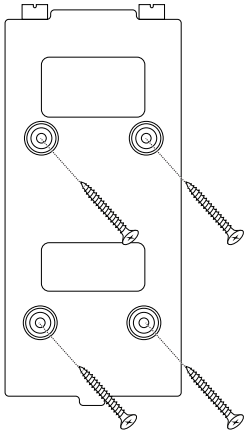


PIN	DESCRIPTION	WIRE
1	12V DC	Red
2	GND	Black

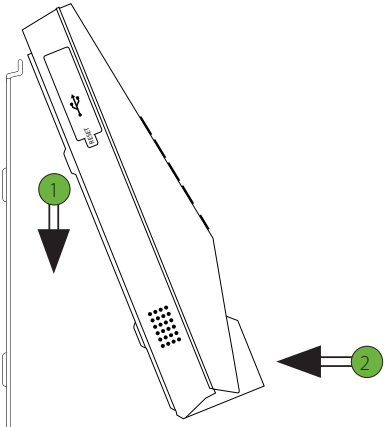
- Power In

Mounting the reader on the Wall

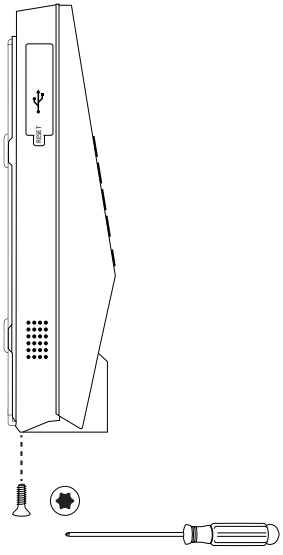
Fix back plate to the wall using wall mounting screws



We recommend drilling the mounting plate screws into solid wood (i.e. stud/beam). If a stud/beam cannot be found, then use the supplied drywall plastic mollies (anchors).



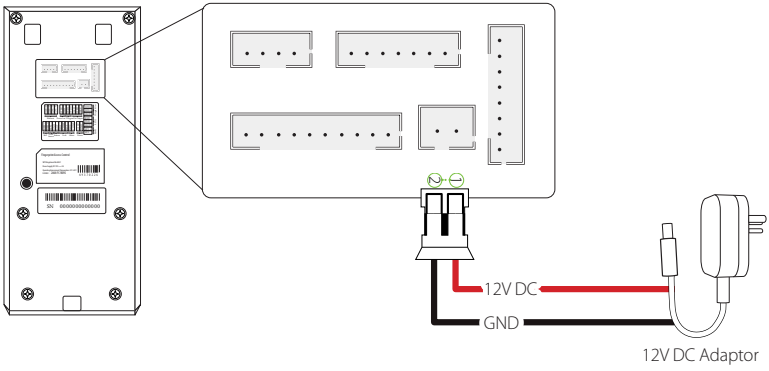
Inserting Reader to backplate



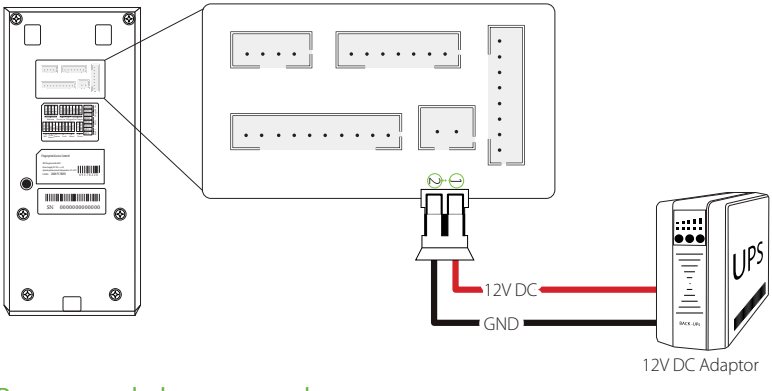
Use star-shaped screw to mount it

Power Connection

Without UPS



With UPS (Optional)

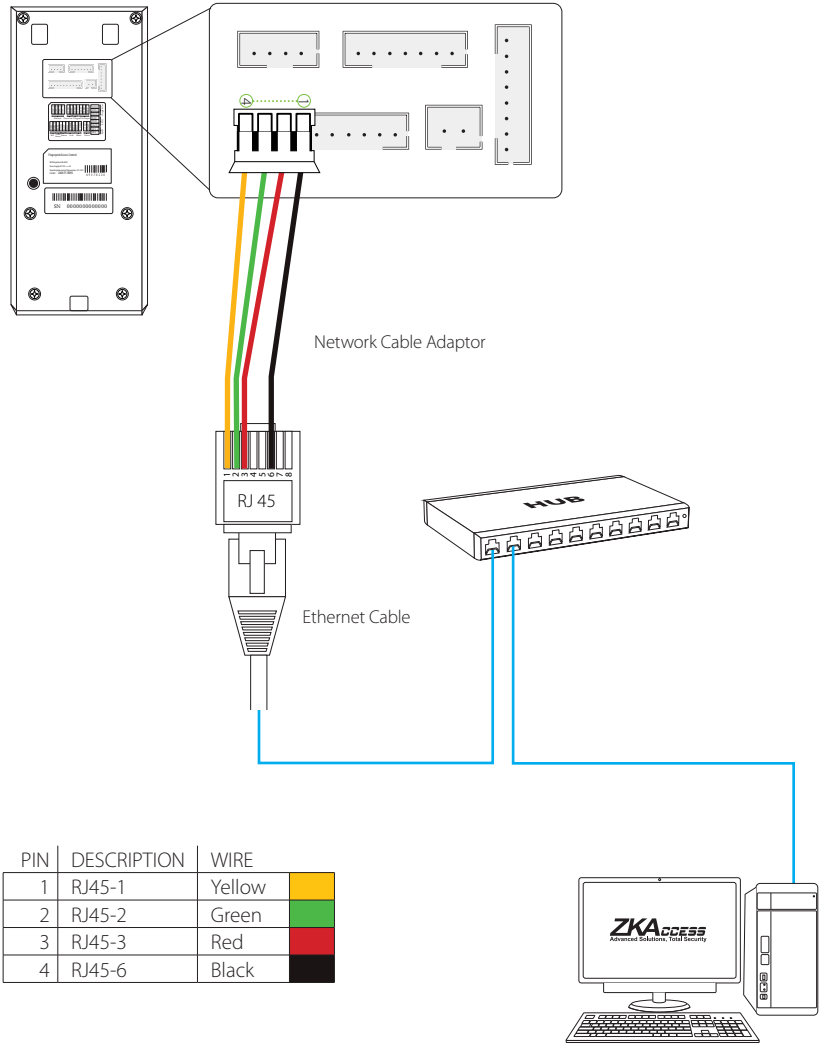


Recommended power supply

- 12V ± 10%, at least 500mA.
- Comply with standard IEC/EN 60950-1.
- To share the power with other devices, use a power supply with higher current ratings

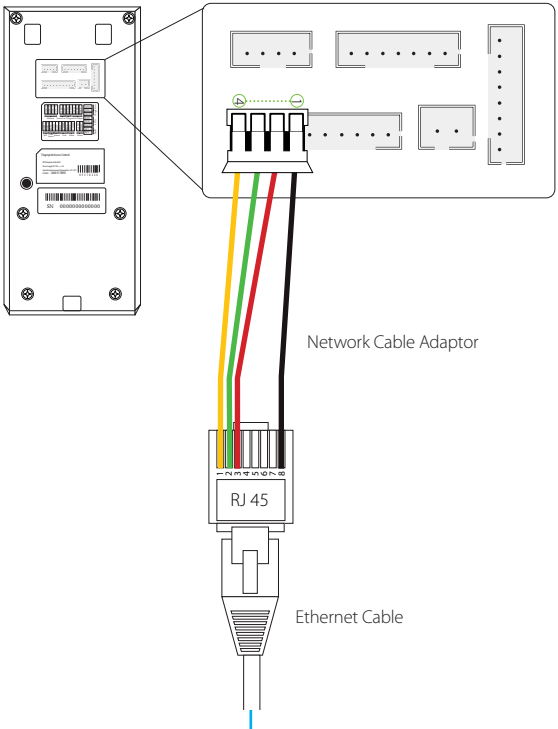
Ethernet Connection

LAN Connection



PIN	DESCRIPTION	WIRE
1	RJ45-1	Yellow
2	RJ45-2	Green
3	RJ45-3	Red
4	RJ45-6	Black

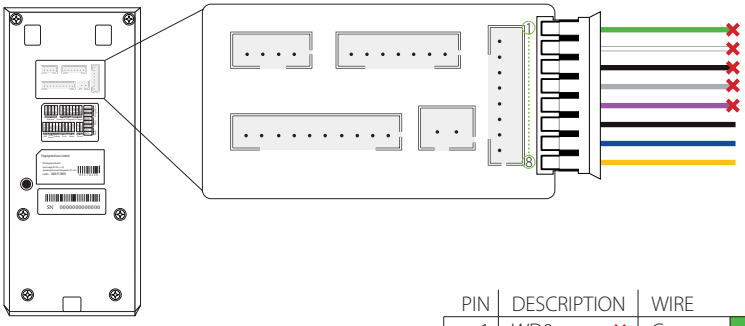
Direct Connection



PIN	DESCRIPTION	WIRE
1	RJ45-1	Yellow
2	RJ45-2	Green
3	RJ45-3	Red
4	RJ45-6	Black

RS485 Connection

PC Connection

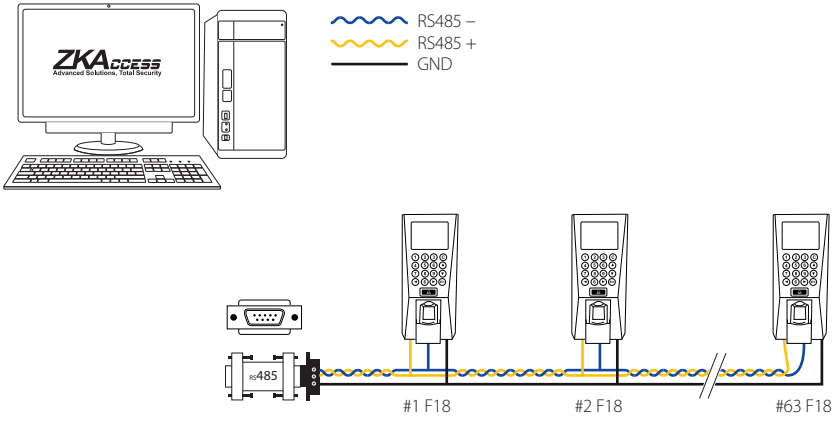


PIN	DESCRIPTION	WIRE
1	WD0 ✖	Green
2	WD1 ✖	White
3	GND ✖	Black
4	232 RX ✖	Gray
5	232 TX ✖	Purple
6	GND	Black
7	485A	Blue
8	485B	Yellow

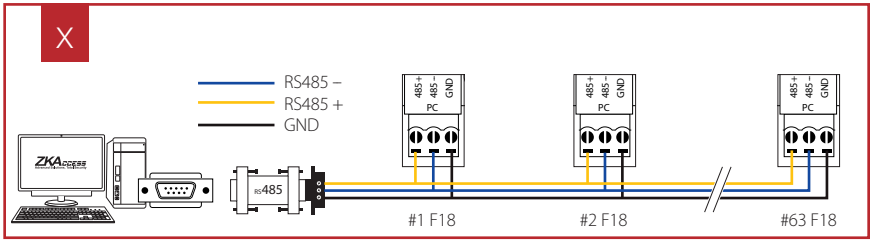
✖ Do not use

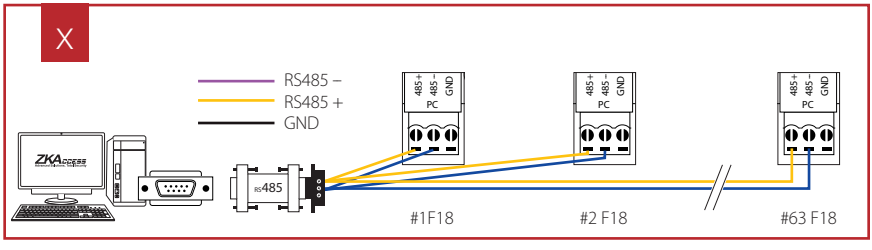
Important Notes:

1. RS485 communication wires should be a shielded and twisted pair cable.
2. RS485 communication wires should be connected in a bus cascade instead of a star form, to achieve a better shielding effect by reducing signal reflection during communications.
3. Adjust the communication speed as needed. The signal quality vary depending on wiring conditions, and it maybe necessary to lower the baudrates.
4. The GND Signal may be omitted **if and only if** the GND potential difference is less than ±5V



Incorrect RS 485 connections





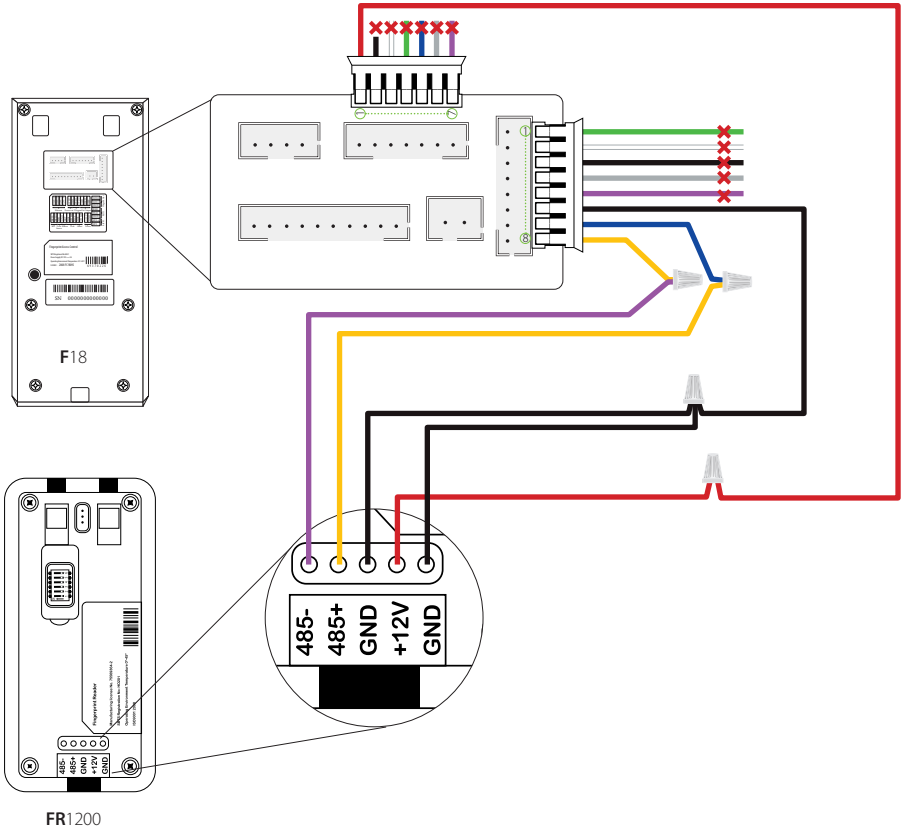
RS485 Connection

FR1200 Connection

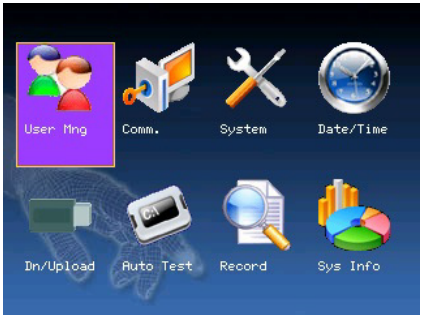
PIN	DESCRIPTION	WIRE
1	12V	Red
2	GND ✖	Black
3	INWD1 ✖	White
4	INWD0 ✖	Green
5	RLED ✖	Blue
6	GLED ✖	Gray
7	BEEP ✖	Purple

✖ Do not use

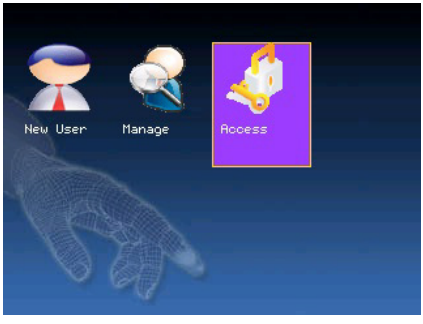
PIN	DESCRIPTION	WIRE
1	WD0 ✖	Green
2	WD1 ✖	White
3	GND ✖	Black
4	232 RX ✖	Gray
5	232 TX ✖	Purple
6	GND	Black
7	485A	Blue
8	485B	Yellow



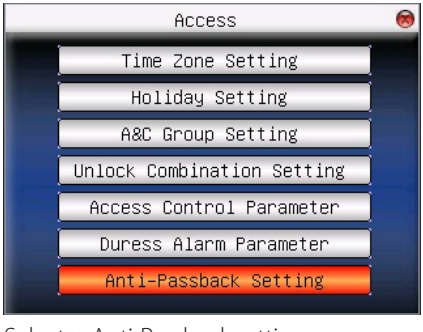
System Settings



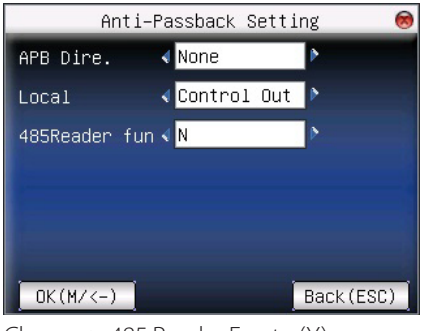
Select > User Management



Select > Access Setting



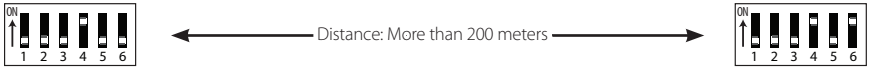
Select > Anti-Passback setting



Change > 485 Reader Fun to (Y)

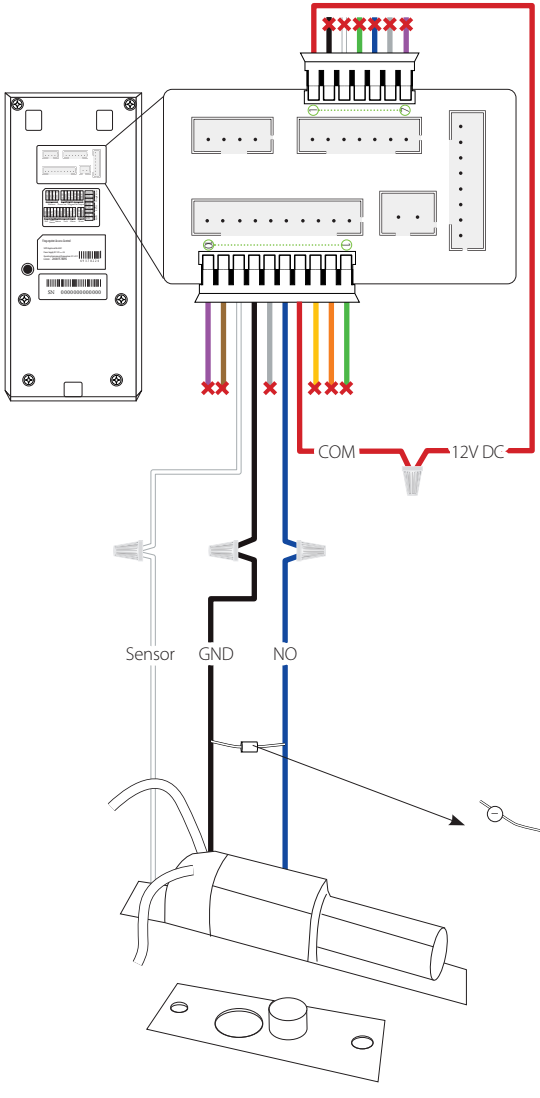
DIP Settings

1. There are six DIP switches on the back of FR1200, switches 1-4 is for RS485 address, switch 5 is reserved, switch 6 is for reducing noise on long RS485 cable.
2. If FR1200 is powered from F18 terminal ,the length of wire should be less than 100 meters or 330 ft.
3. If the cable length is more than 200 meters or 600 ft., the number 6 switch should be ON as below



Lock Relay Connection

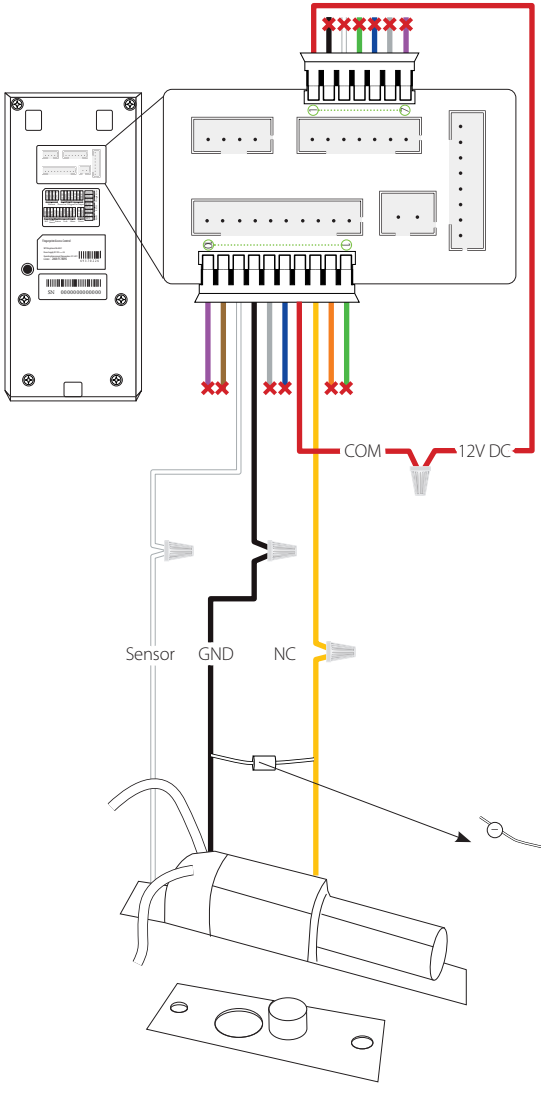
Normally Open Lock



PIN	DESCRIPTION	WIRE
1	Bell- ✖	Purple
2	Bell+ ✖	Brown
3	Sensor	White
4	GND	Black
5	Button ✖	Gray
6	NO	Blue
7	COM	Red
8	NC ✖	Yellow
9	Alarm+ ✖	Orange
10	Alarm- ✖	Green

✖ Do not use

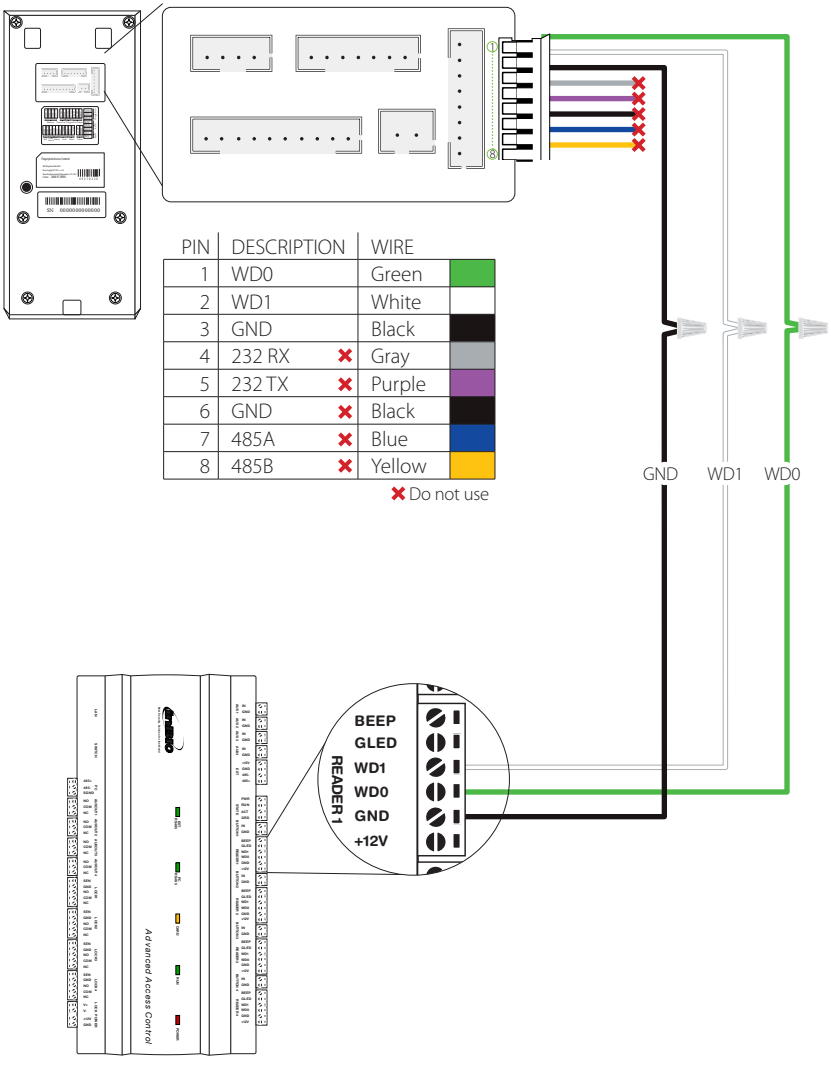
Normally Closed Lock



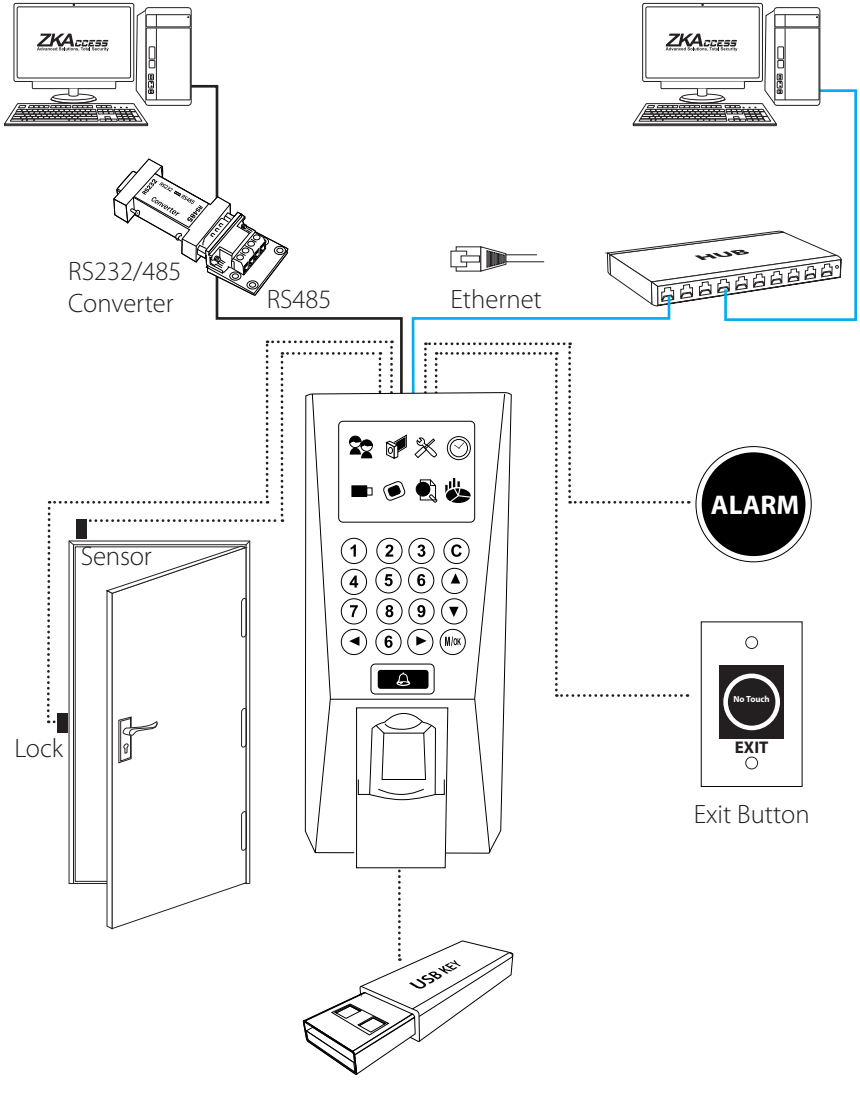
PIN	DESCRIPTION	WIRE
1	Bell- ✖	Purple
2	Bell+ ✖	Brown
3	Sensor	White
4	GND	Black
5	Button ✖	Gray
6	NO ✖	Blue
7	COM	Red
8	NC	Yellow
9	Alarm+ ✖	Orange
10	Alarm- ✖	Green

✖ Do not use

Wiegand Output Connection

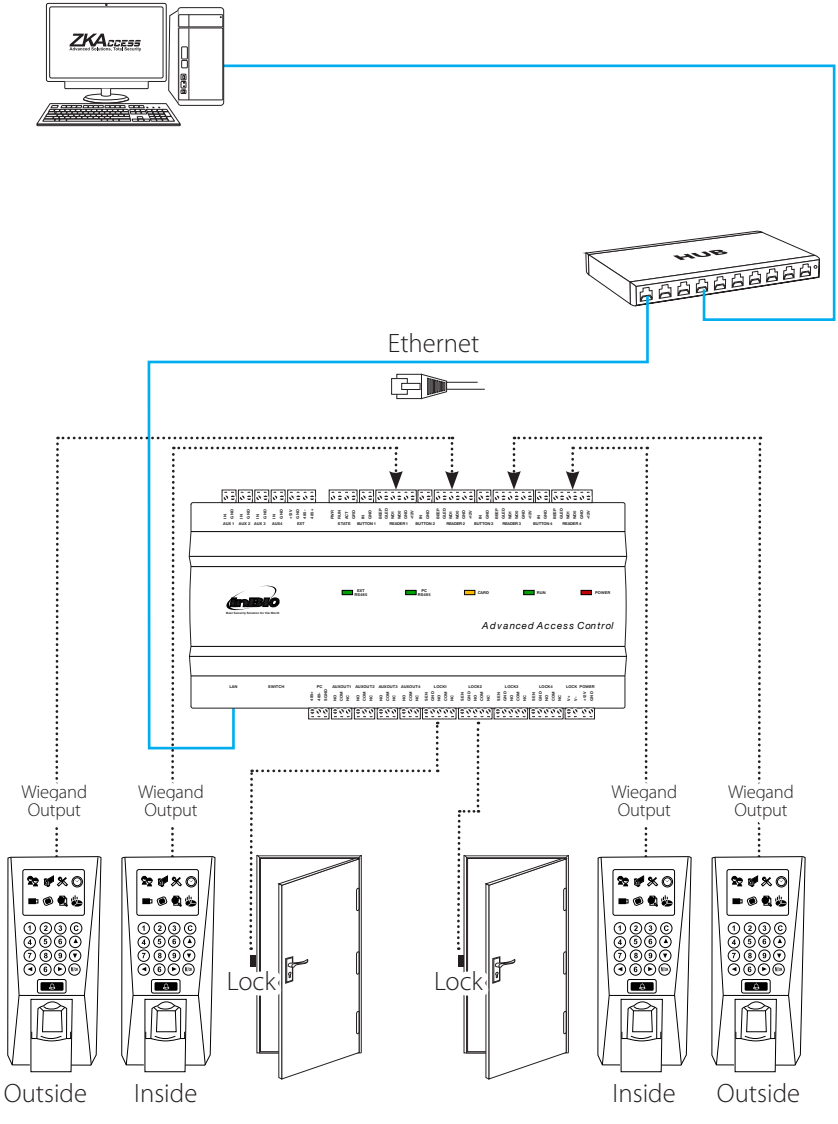


Standalone Installation

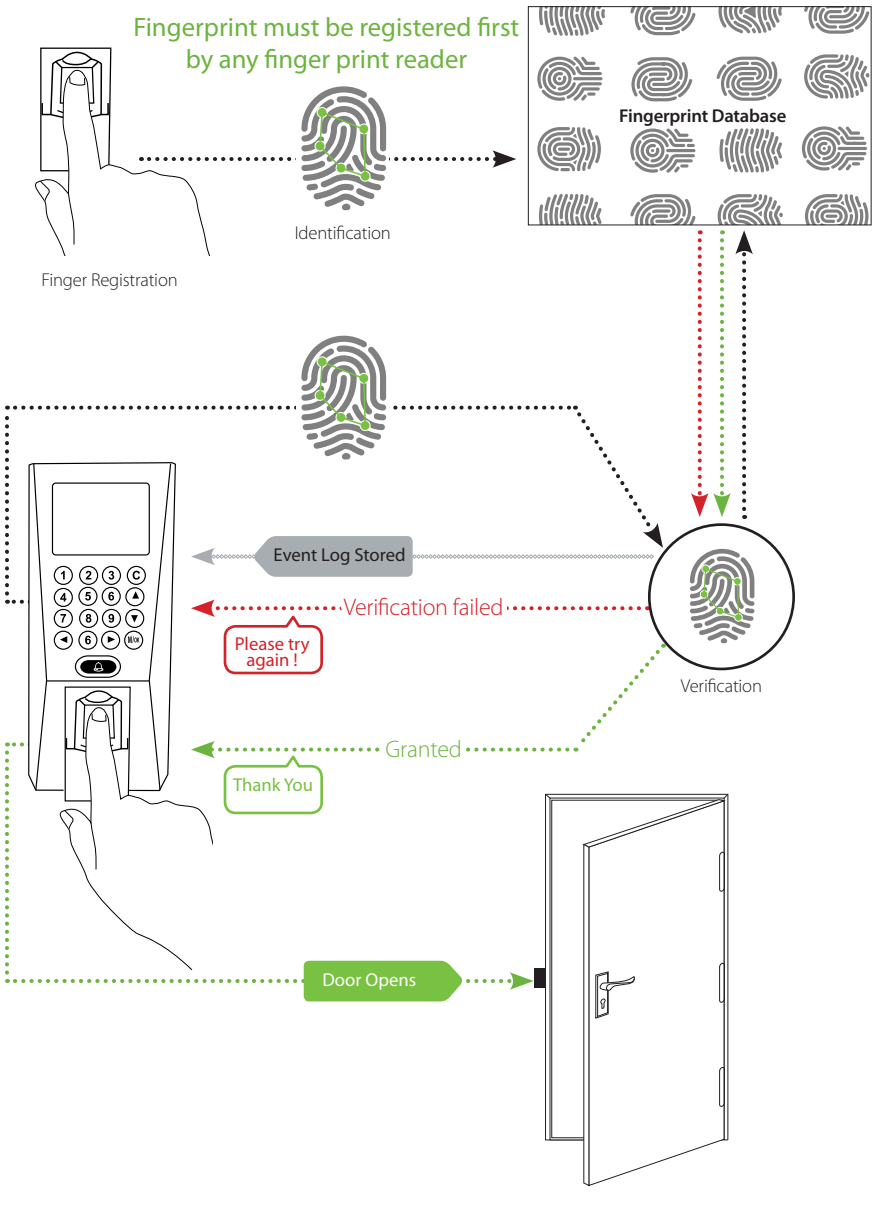


Third Party Controller

Wiegand Output Connection



How Does F18 Work

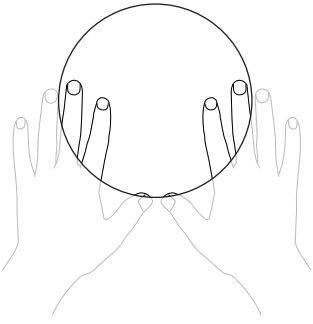


How to Place a Finger on Scanner

ZKTeco's fingerprint readers will give optimal results for fingerprint matching if the following recommendations and suggestions are followed.

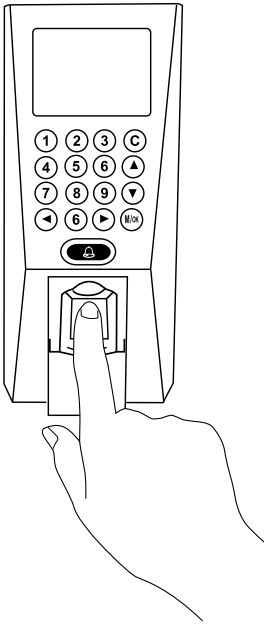
Select a finger to enroll

- It is recommended to use an index finger or a middle finger.
- Thumb, ring or little finger are relatively difficult to place in the correct position

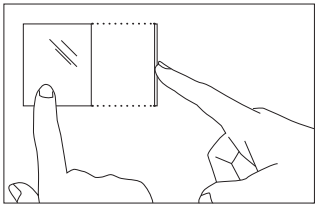


How to place a finger on a sensor

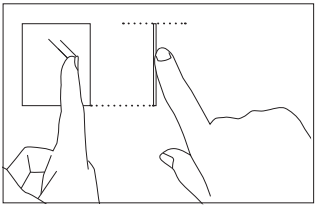
- Place a finger such that it completely covers the sensor area with maximum contact.
- Place core of the fingerprint at the center of the sensor. *The core of a fingerprint is a center where the spiral of ridges is dense.* (*Usually core of fingerprint is the opposite side of the lower part of a nail.)*
- Place a finger such that the bottom end of a nail is located at the center of a sensor.



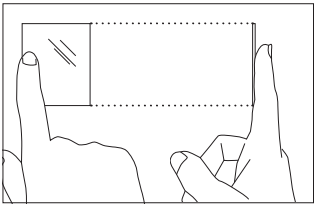
DO NOT place the finger in the following positions



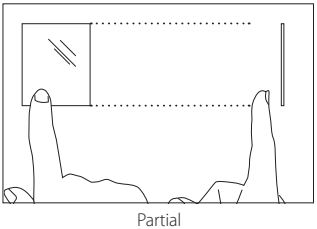
Upright



Skewed



Sideways



Partial

If a finger is placed as shown on the left, only a small area of a finger is captured. So it is recommended to place a finger as shown on page 24.

Tips for different fingerprint conditions

- ZKTeco's fingerprint products are designed to verify fingerprints with highest security irrespective of the conditions of the skin of the finger. However, in case a fingerprint is not read on the sensor, please refer to the followings tips.
  - › If a finger is stained with sweat or water, scan after wiping moisture off.
  - › If a finger is covered with dust or impurities, scan after wiping them off.
  - › If a finger is way too dry, please blow some warm air from your mouth on the finger tip.

Tips for fingerprint enrollment

- In fingerprint recognition, enrollment process is very important. When enrolling a fingerprint, please try to place the finger correctly with utmost care.
- In case of low acceptance ratio, the following actions are recommended.
  - › Delete the enrolled fingerprint and re-enroll the finger.
  - › Try another finger if a finger is not easy to enroll due to scar or cuts.
- In case of an enrolled fingerprint cannot be used due to injury or if the hand is full, it is recommended to enroll more than two fingers per user.

Troubleshooting

1. Fingerprint can not be read or it takes too long.

- Check whether a finger or fingerprint sensor is stained with sweat, water, or dust
- Retry after wiping off finger and fingerprint sensor with dry paper tissue or a mildly wet cloth.
- If a fingerprint is way too dry, blow on the finger and retry.

2. Fingerprint is verified but authorization keeps failing.

- Check whether the user is restricted by group or time zone.
- Check with administrator whether the enrolled fingerprint has been deleted from the device for some reason.

3. Authorized but door does not open.

- Check whether the lock open duration is set to appropriate time, which opens the lock.
- Check whether anti-passback mode is in use. In anti-passback mode, only the person who has entered through that door can exit.

4. Why device display "system broken" and the alarm is ringing.

- Check whether the device and back plate are securely connected to each other. If not, a tamper switch is activated which triggers the alarm and keeps it ringing.

5. How to set F18 used as fingerprint reader on inBio access controller.

- Reeference the Wiegand Output Connection on page 20.
- Enroll personnel's PIN in inBio panel as a card

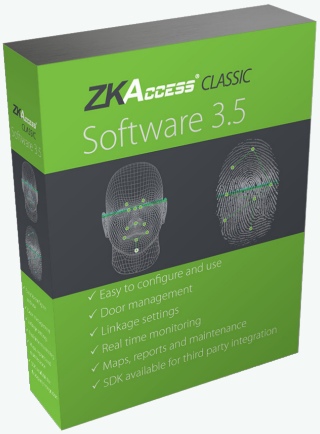
Electrical Specifications

	Minimum	Typical	Maximum	Notes
WORKING POWER SUPPLY				
Voltage (V)	9.6	12	14.4	Use regulated DC power adaptor only
Current (A)			2	
ELECTRONIC LOCK RELAY OUTPUT				
Switching voltage (V)			12V	Use regulated DC power adaptor only
Switching Current (A)			2	
SWITCH AUX. INPUT				
VIH (V)		TBD		
VIL (V)		TBD		
Pull-up resistance (Ω)		4.7k		The input ports are pulled up with 4.7k resistors
WIEGAND INPUT				
Voltage (V)	10.8	12	13.5	
Current (mA)			500	
TTL/WIEGAND OUTPUT				
VOH (V)			5	
VOL (V)			0.8	
Pull-up resistance (Ω)			4.7K	The outputs ports are open drain type, pulled up with 4.7k resistors internally
ZK ELECTRONIC LOCK				
Voltage (V)	10.8	12	13.2	
Current (mA)			500	

Specifications

Fingerprint Capacity	3,000
Transaction capacity	100,000
Hardware Platform	ZEM720
CPU	ZK 6001, 400Mhz
Memory	64MB Flash, 32MB SDRAM
Fingerprint Sensor	ZK optical sensor
Display	2.8"TFT LCD color screen
LED Indicator	Red, Green
Communication	Ethernet (10/100M), RS485, USB-HOST
Wiegand Signal	Wiegand Input and Wiegand Output
Identification Speed	≤2 sec
FAR	≤0.0001%
FRR	≤1%
Operating Temperature	32º to 113º F (0º to 45º C)
Operating Humidity	20%-80%
Language	English, Spanish, Portuguese, French…
Power Supply	12V DC, 3A
Access control interfaces	Electric lock, alarm, exit button, wired door bell
Dimension	W: 80x H: 183x D: 42mm (W: 3 1/8" x H: 7 1/4" x D: 1 5/8")
Certified	CE FC RoHS ETL

ZKAccess *CLASSIC* 3.5
Installation Guide



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Creating an Access Level 37
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Importing Personnel Data from Device 40
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Door Settings 42
Real Time Monitoring 43
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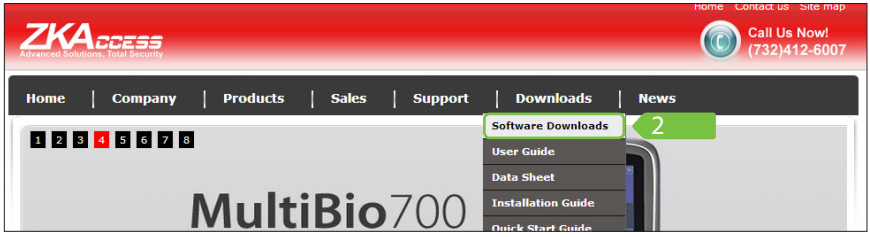
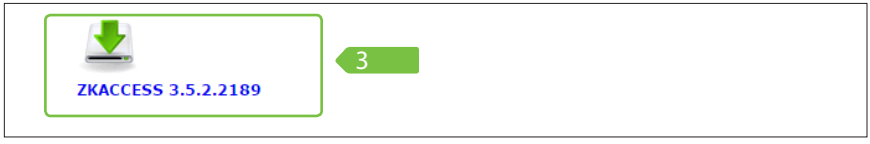
Downloading



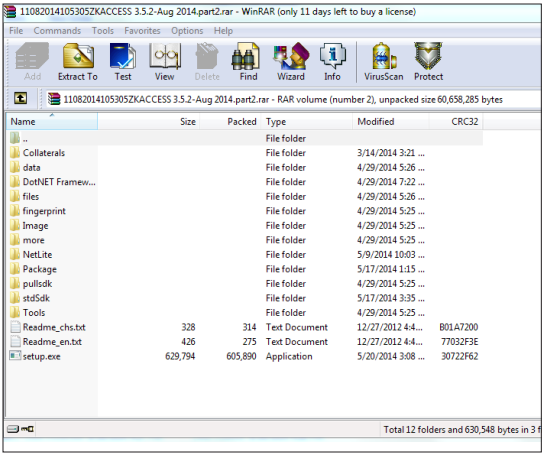
1. Go to zkaccess.com
2. Hover over Downloads then click Software Downloads in the dropdown menu.



3. Scroll to the bottom of the page and click ZKACCESS CLASSIC 3.5 to download

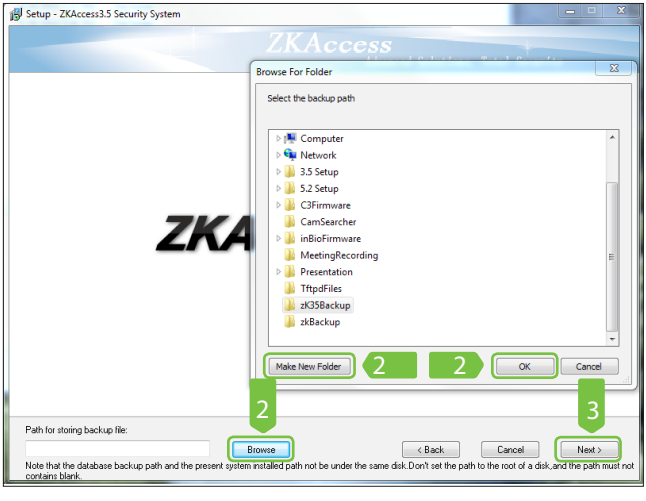
If you do not have software to extract compressed files, Scroll up on the same page to find Winrar 32 or Winrar 64 to download

4. Extract Files to a Setup Folder
5. Open the setup folder and run setup.exe to install



Installation

1. Click Next until asked to choose a path for storing backup files

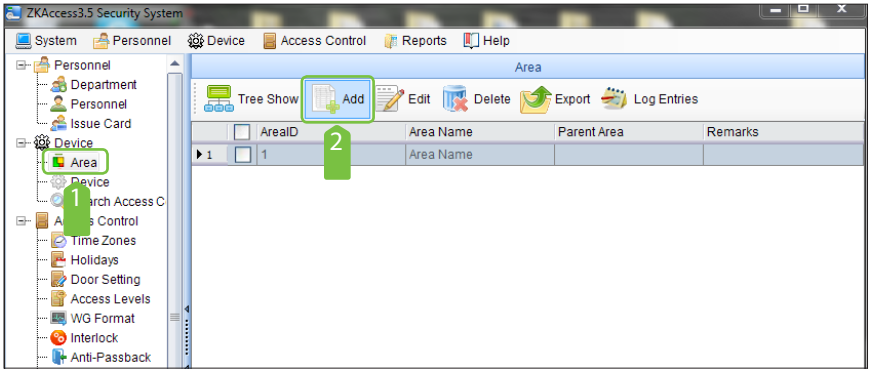


2. Click Browse and Make New Folder, now click OK

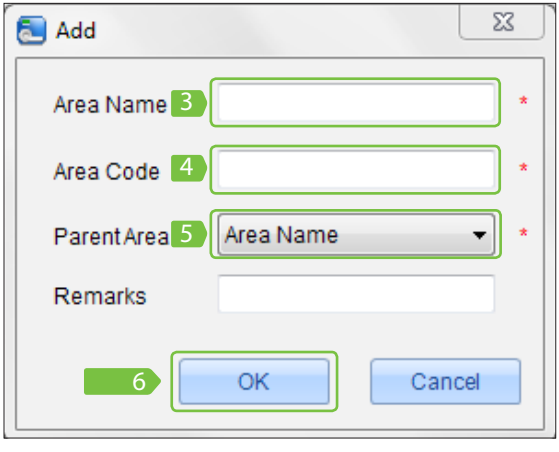
3. Click Next and then Install

Adding an Area

Before adding devices, it is required to add an area to manage devices. The system, by default, has set an area named Area Name and Area ID [1].



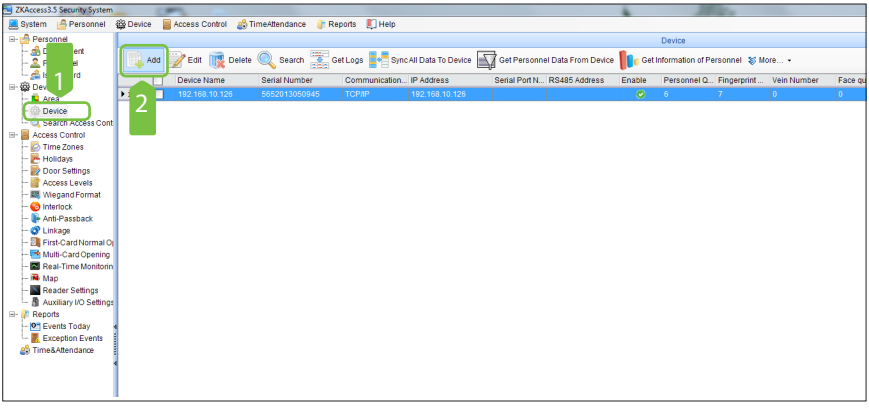
1. Click Area
2. Click Add



3. Input the Area Name,
4. Area Code (Unique ID number up to 8 digit)
5. Choose a Parent Area from the dropdown menu
6. Click OK

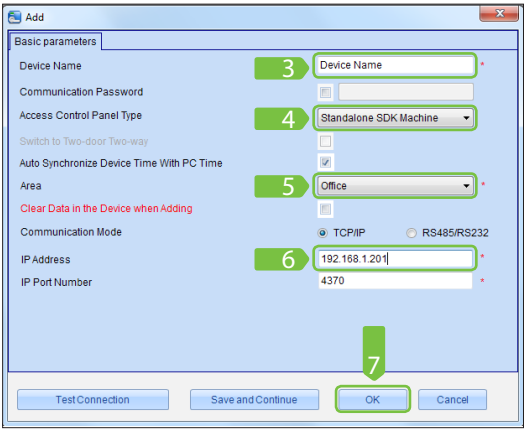
Adding a Device

To add a standalone device:



1. Click Device

2. Click Add



3. Input a Device Name

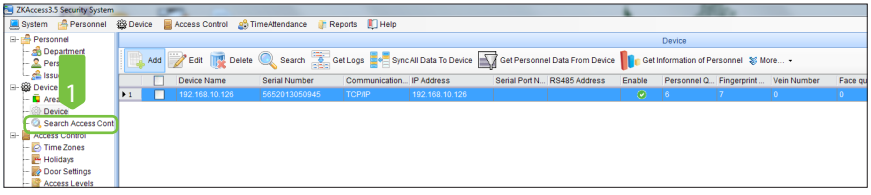
4. For Access Control Panel Type, select [Standalone SDK Machine]

5. Choose an Area

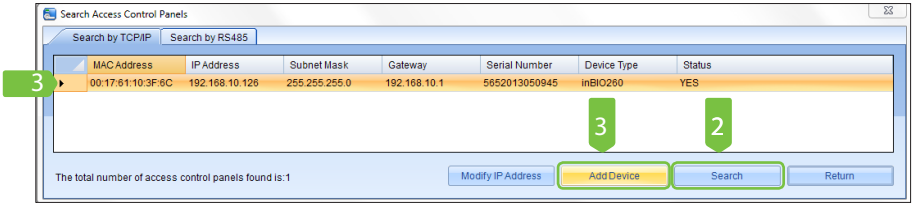
6. Input the device's IP Address

7. Click OK

To add an Access Control Panel:

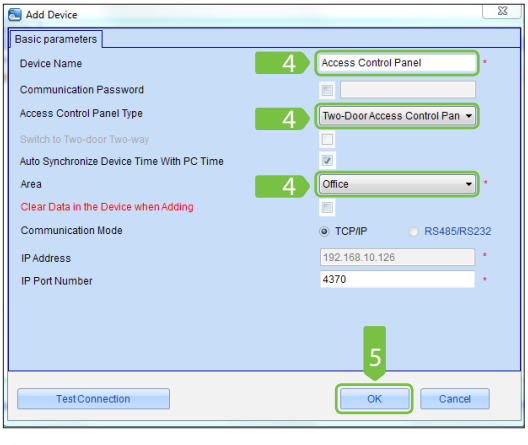


1. Click **Search Access Control Panels**, to show the Search interface, supports Ethernet and RS485 search.



2. Click **Search**, and it will prompt [Please wait……];

3. Click the device you wish to add. Click **Add Device**

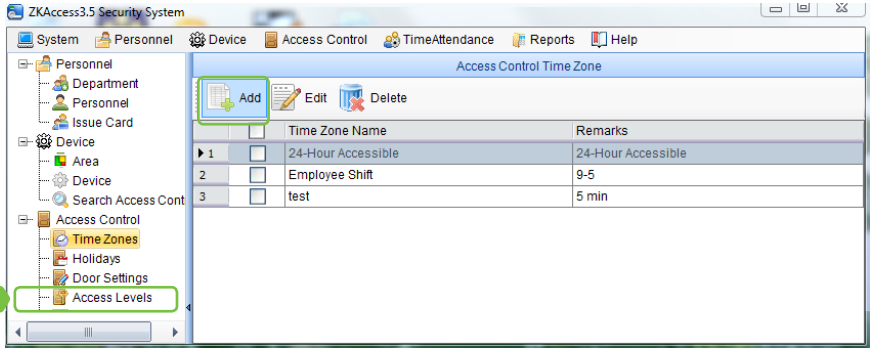


4. Input a device name, type, and area.

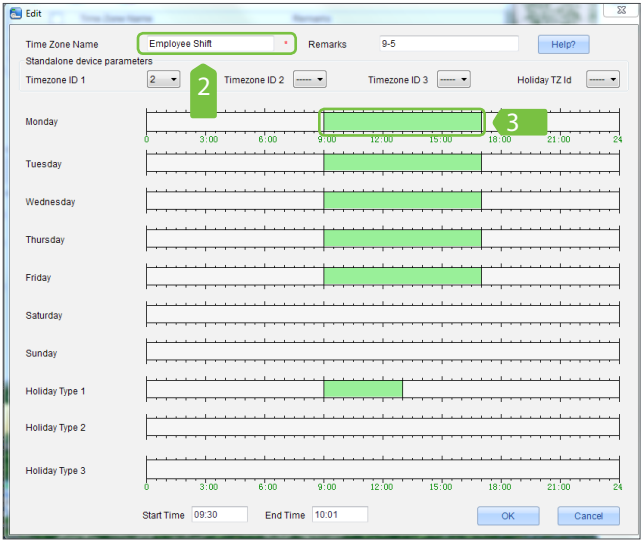
5. Click **OK**

Creating a Time Zone

Time Zones are used to set when readers will be active, when doors will be open, and when specified users will have access to specified doors.



1. Click Access levels > Add to enter Add access levels edit interface;

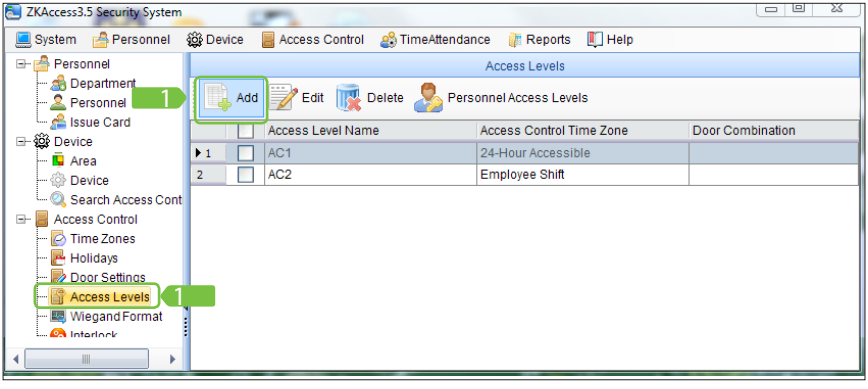


2. Input a Time Zone Name

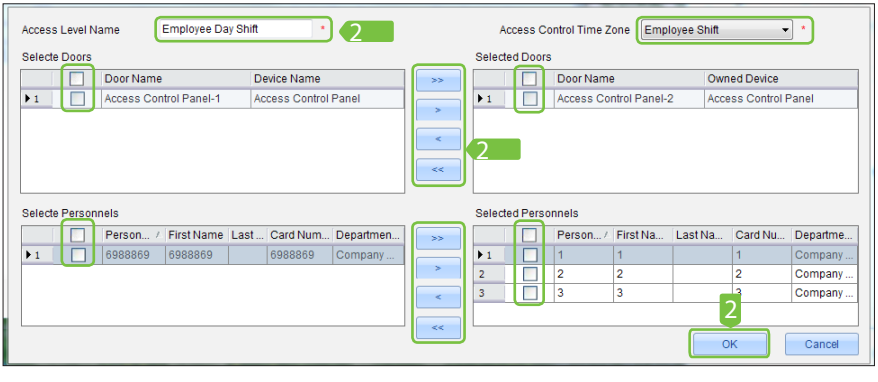
3. Click and drag in each day's frame to set up to three intervals per day or holiday

Creating an Access Level

Access levels means in a specific time period, which door or door combination can be opened through verification



1. Click Access levels > Add



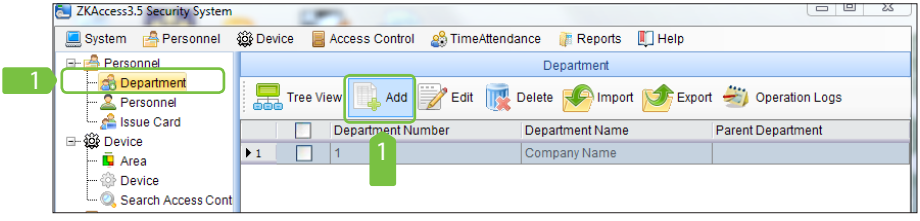
2. Set the access level name, time zone, doors, and personnel that will have access.

3. Click OK to complete setting and quit

Creating Departments / Enrolling Personnel

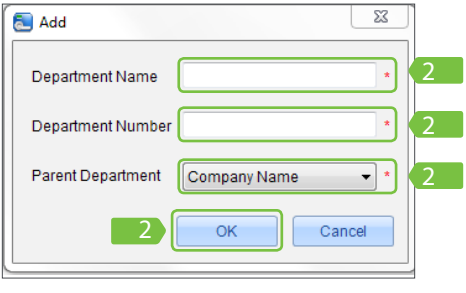
Before managing Personnel it is required to describe the company's departmental organization.

Creating Departmets

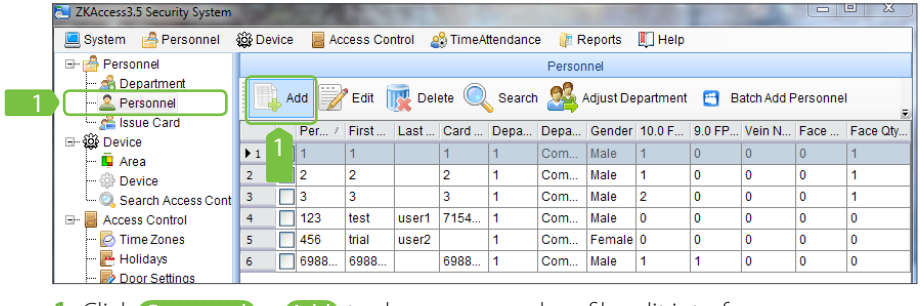


1. Click Department > Add to create Departments.

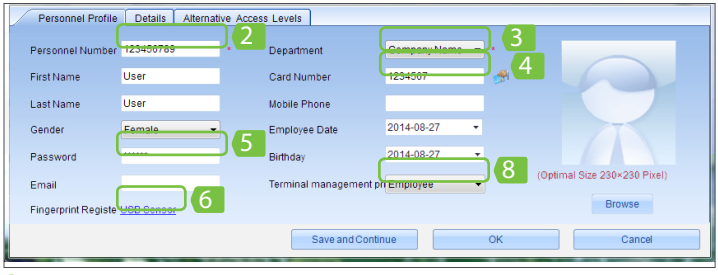
2. Input department name and department number. Choose parent department. Then click OK



Enrolling Personnel



1. Click Personnel > Add to show personnel profile edit interface



2. Enter a Personnel Number. It cannot exceed 9 digits.

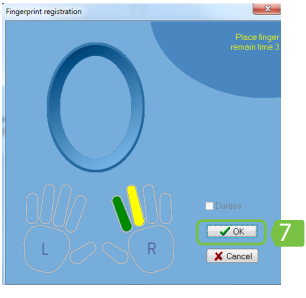
3. Select a department from the pull-down menu

4. (Optional) Enter a card number manually or using a card issuer.

5. (Optional) Enter a password for readers with keypad

6. (Optional) Click USB Sensor to enroll fingerprints.

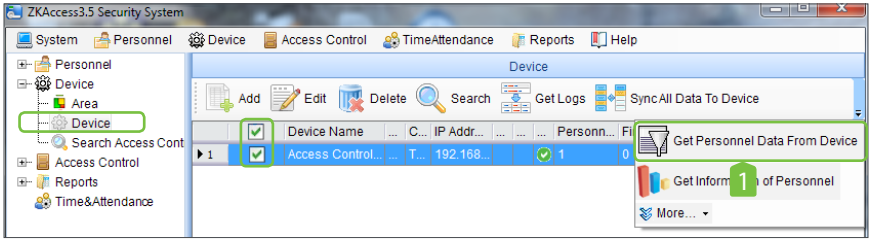
7. Select a finger and press on the sensor three times. When you see "Succeed in fingerprint registration" Click OK



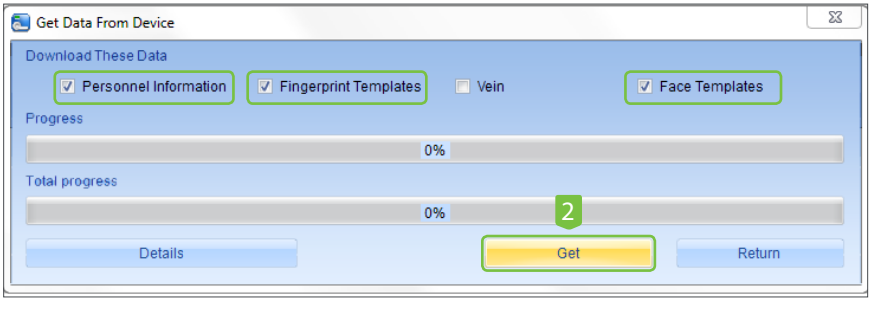
8. (Optional) Register employee as Administrator through [Terminal Management]

9. Click the Alternative Access Levels tab choose the user's Access Level. Click OK

Importing Personnel Data from Device

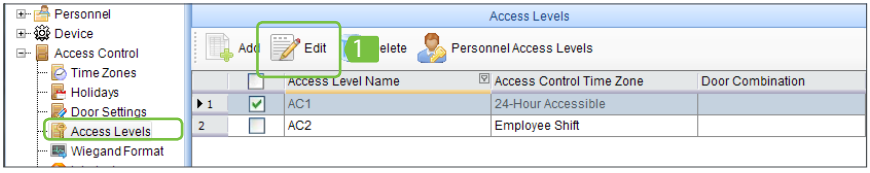


1. Click Device. Choose a device to import personnel from.
   Get Personnel Data From Device to import from device

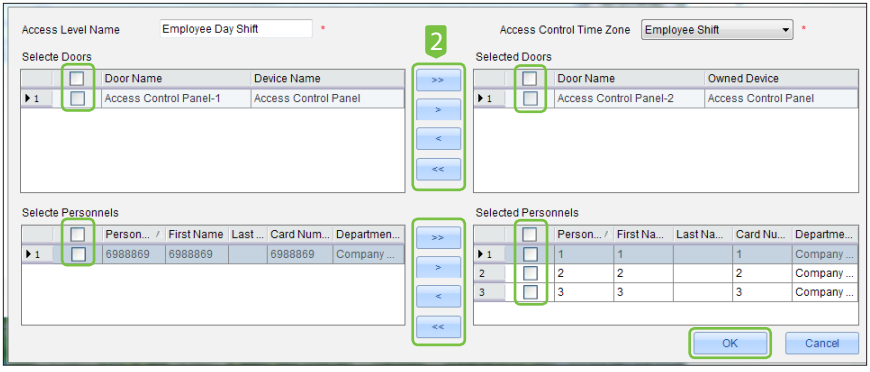


2. Choose Personnel, Fingerprints, or Face Templates to download, click Get

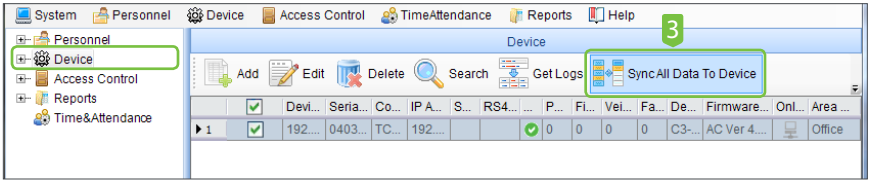
Exporting Personnel Data to Device



1. To export personnel data to another device, go to **Access levels** > **Edit**

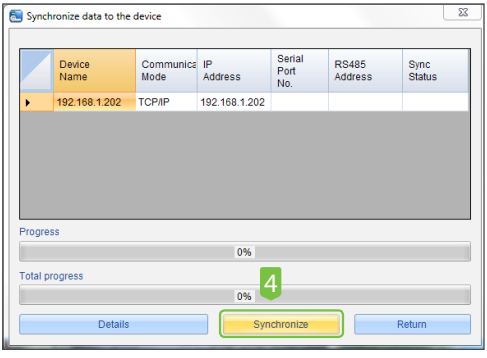


2. Add the personnel and device to an access level. Click **OK**

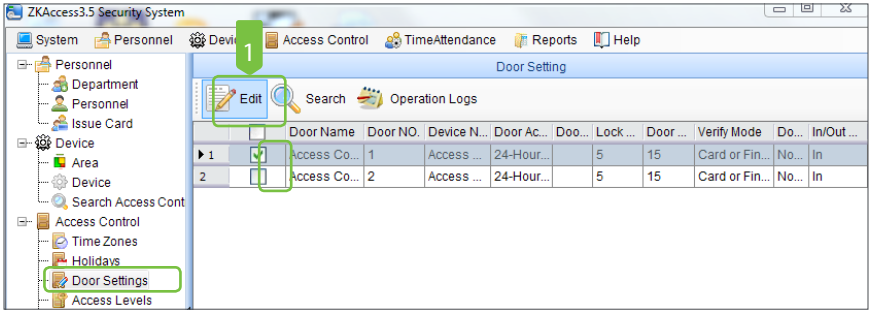


3. Go to **Device**, choose a device to export the personnel to, and click **Sync All Data To Device**

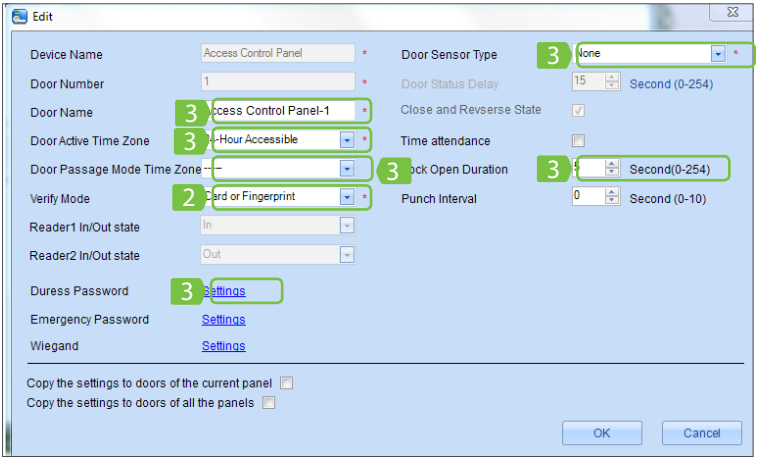
4. Click **Synchronize**.



Door Settings



1. Click Door Setting, select the door to be modified, click Edit

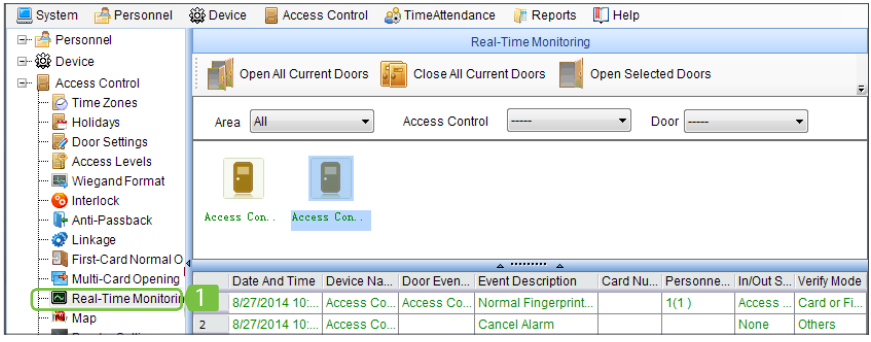


2. Set the verification mode desired for the door.

3. (Optional) Modify the Door's name, active time zone, passage mode, sensor type, lock open duration, and duress settings.

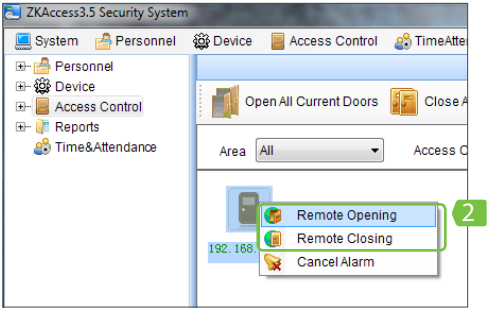
Real Time Monitoring

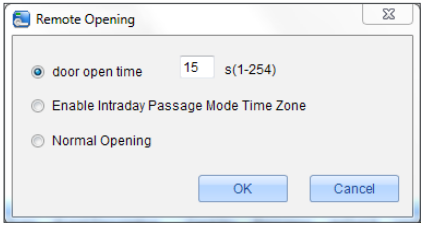
Monitor the statuses and real-time events of doors under the access control panels in the system in real-time.

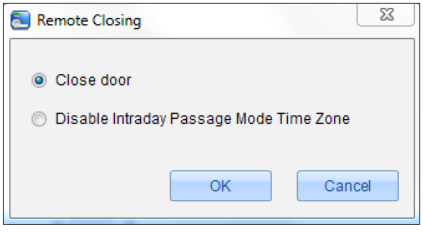


1. Click Real-Time Monitoring to view live events

2. Right click on the door icon to remote open/close.



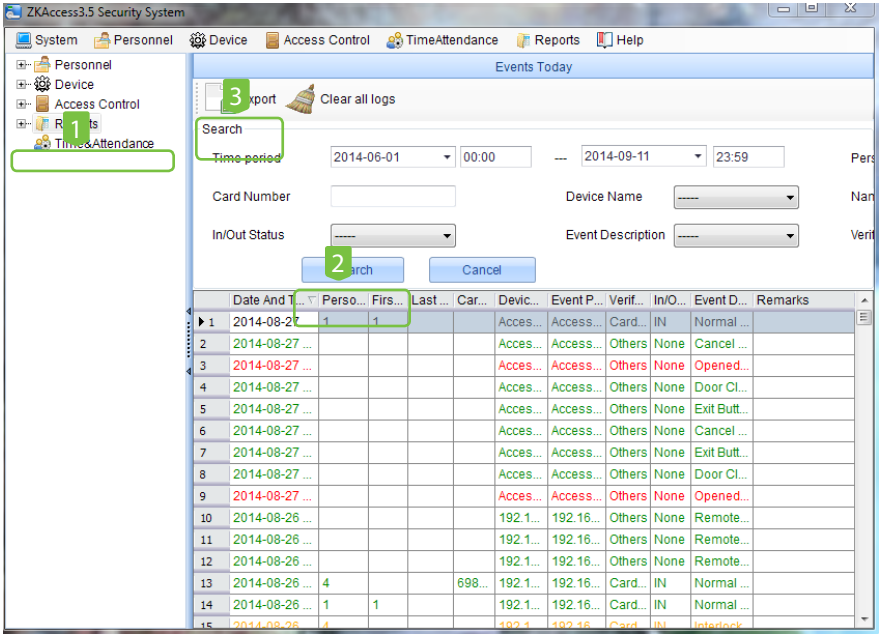




3. Choose door open time or Enable Intraday Passage Mode

4. Choose close door or Disable Intraday Passage Mode

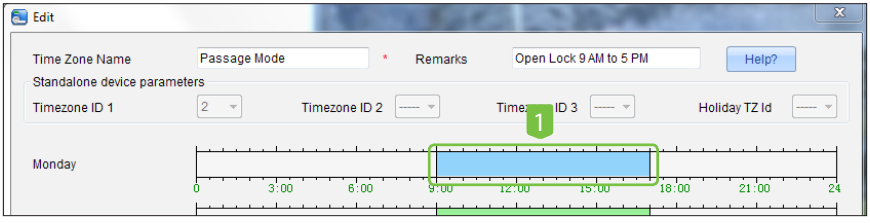
Exporting Reports



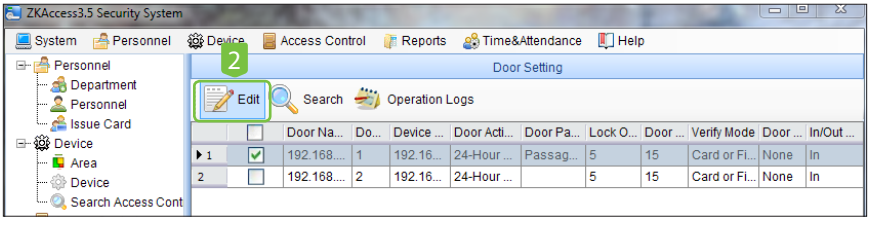
1. Click Reports to access transaction logs
2. Set filters to examine desired transactions, click Search
3. Click Export to export reports in XLS, PDF, or TXT file format

Passage Mode

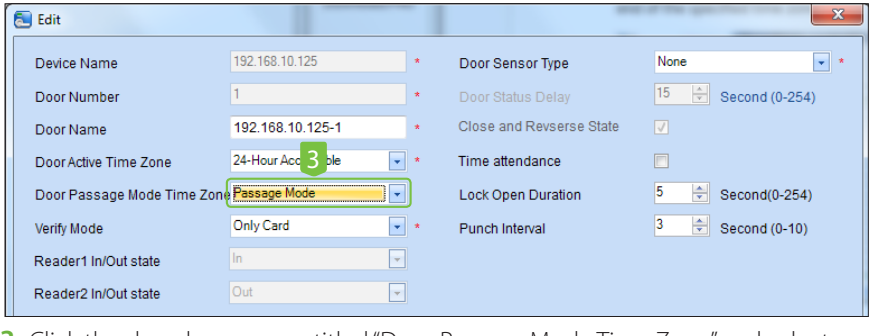
The Passage Mode feature will keep a door unlocked during a specified time zone. It will automatically unlock at the beginning of the time zone and will lock automatically at the end of the specified time zone.



1. Create a new Time Zone with the hours you want the door to be unlocked.



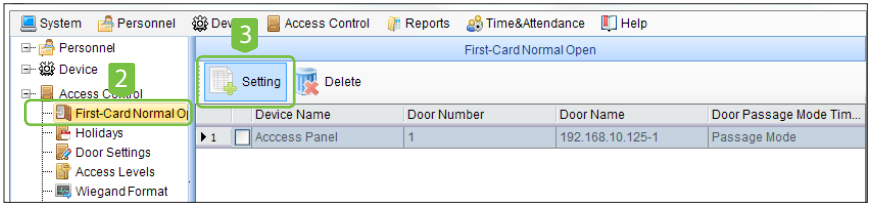
2. In Door Settings, Click Edit to change door settings.



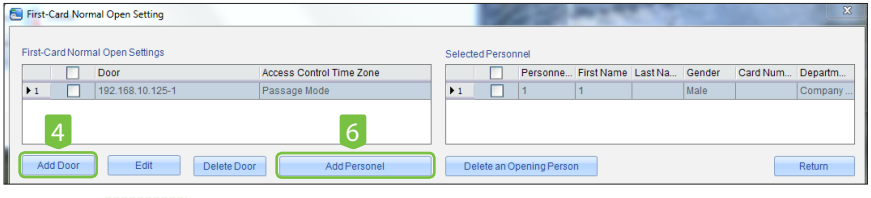
3. Click the dropdown menu titled "Door Passage Mode Time Zone" and select your new time zone

First-Card Normal Open

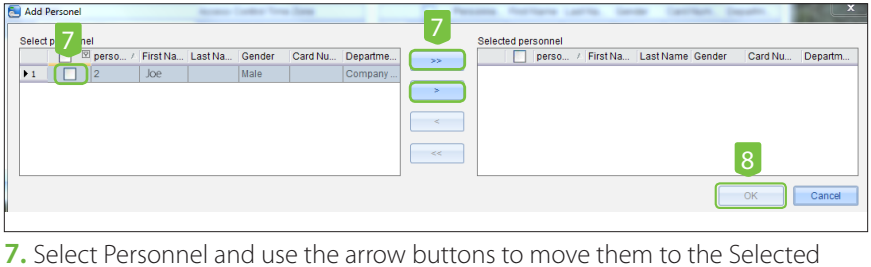
The First Card Normal Open feature will keep a door unlocked during a specified time zone when triggered by specified personnel. After a reader has been used by a specified personnel that day, the door will unlock automaticcally at the beginning of the time zone and lock again at the end of the specified time zone.



1. Create a new time zone with the hours you want the door to be unlocked.
2. Select the First-Card Normal Open Menu
3. Click Setting



4. Click Add Door
5. Choose the door you want to set to normal open and the time frame it will be unlocked. Click OK
6. Select the door and click Add Personnel



7. Select Personnel and use the arrow buttons to move them to the Selected personnel panel.
8. Click OK

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