



# TF1700

IP65 Rated Standalone  
Reader Controller

## Installation Guide

[www.zkaccess.com](http://www.zkaccess.com)

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## 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 an area subject to direct sunlight, humidity or dust



- Do not place a magnet near the product. Magnetic field from magnets, 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.



- Clean the device often to remove dust on it



- Do not let children touch the device without supervision.

## Safety Precautions

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



- Do not drop the device.



- Do not disassemble, repair or alter the device.



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



- Do not damage the device



- In cleaning, do not splash water on the device but wipe it out with smooth cloth or towel.



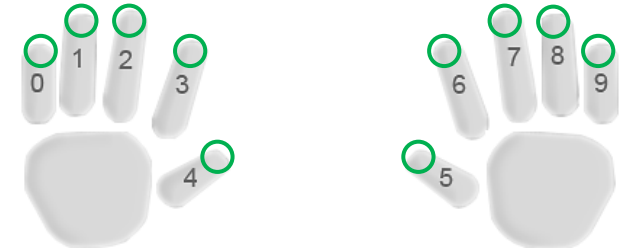
- Contact your nearest dealer in case of a trouble or problem.

## How to Place a Finger

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

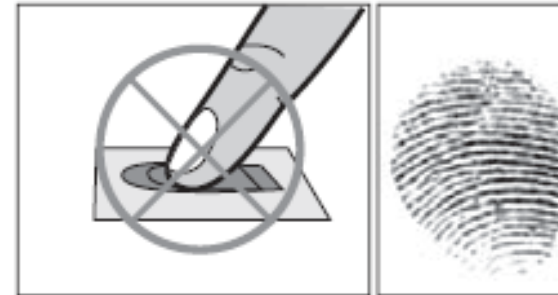
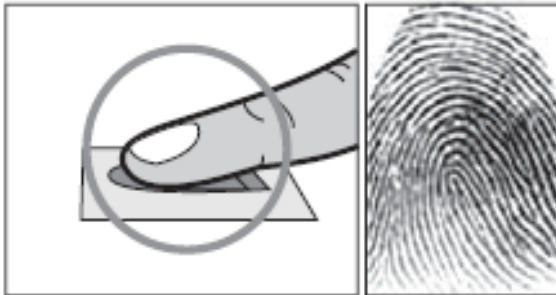
### Select a finger to enroll

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

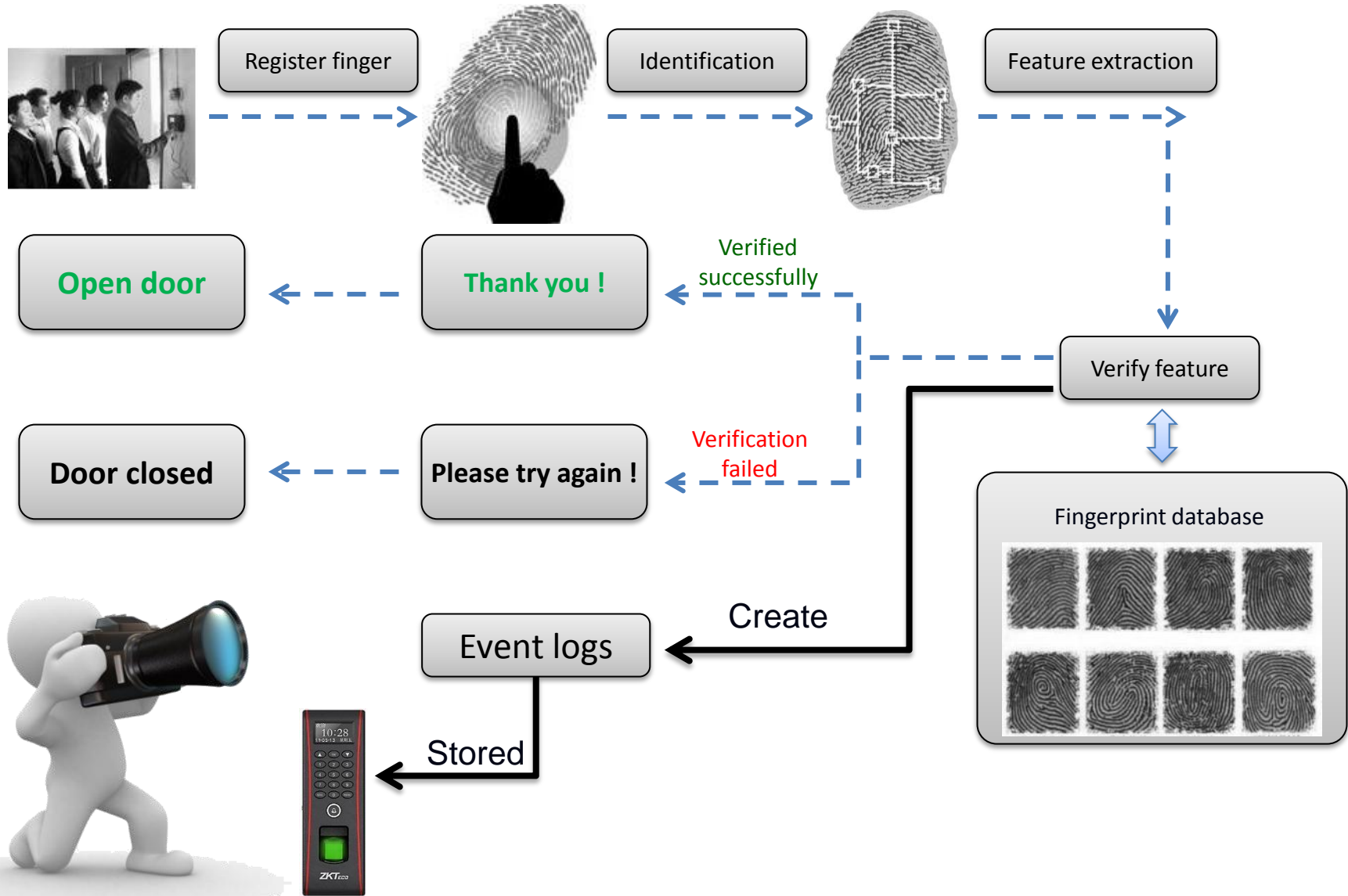


## How to Place a Finger

### ■ **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.
  - Enroll the same fingerprint again.
  - 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.

# How Does Reader work





# Product Contents

## Basic Contents



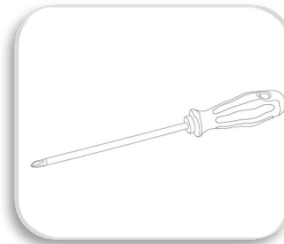
**TF1700**



**Metallic Back Plate**



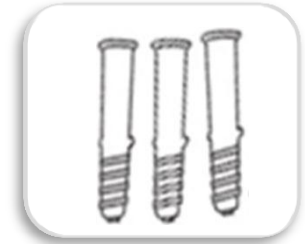
**Rubber Gasket**



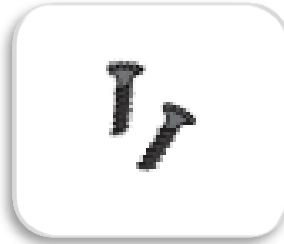
Screw Driver – 1 pc.



Wall Mounting Screws – 3 pcs.



Wall Plugs – 3 pcs



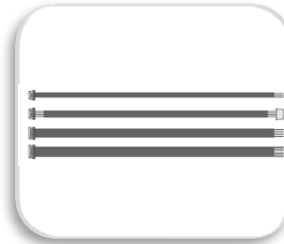
Star-shape Screw for Mounting Plate -2 pcs



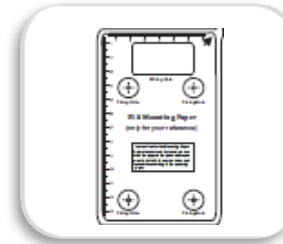
Mini-USB Cable -1 pc



Software CD



2 pin, 5 pin, 7 pin, 10 pin cables – each 1 pc



Mounting Paper



TF1700 Installation Guide



## Product Contents

### ■ Optional accessories



Weigand Card Reader



FR1200 Slave Fingerprint Reader



12VDC, 3A Power  
Adaptor



K1-1 Exit Button



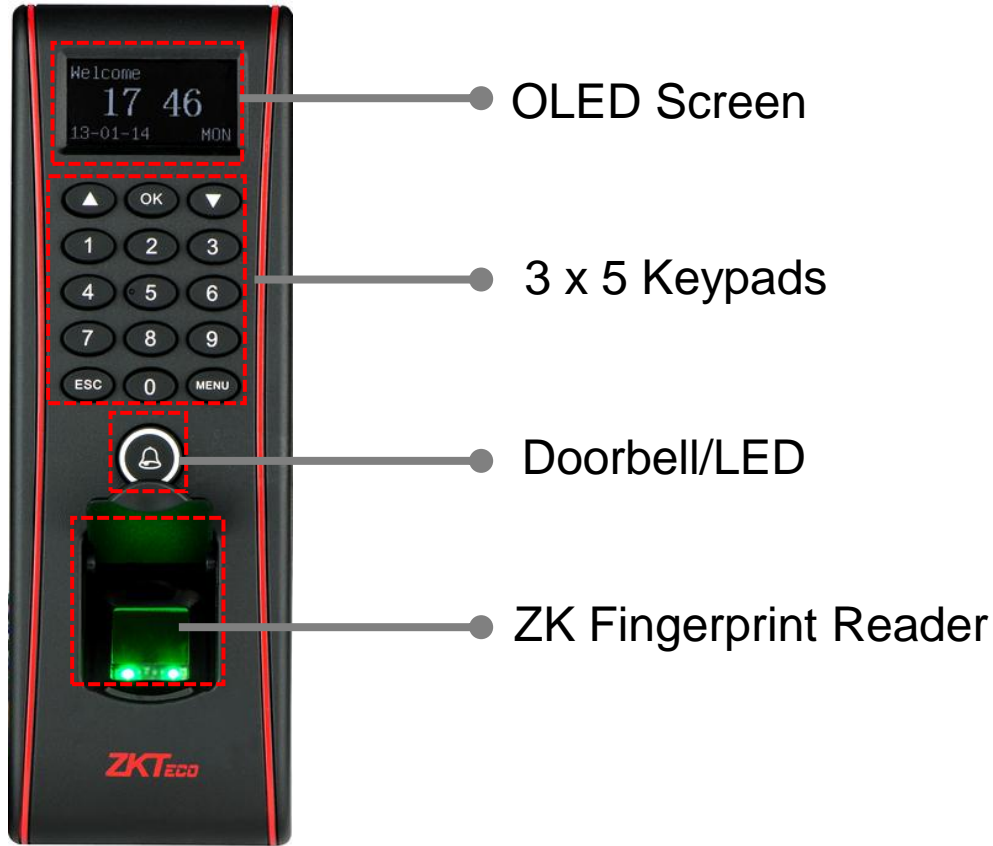
RS485 Convertor



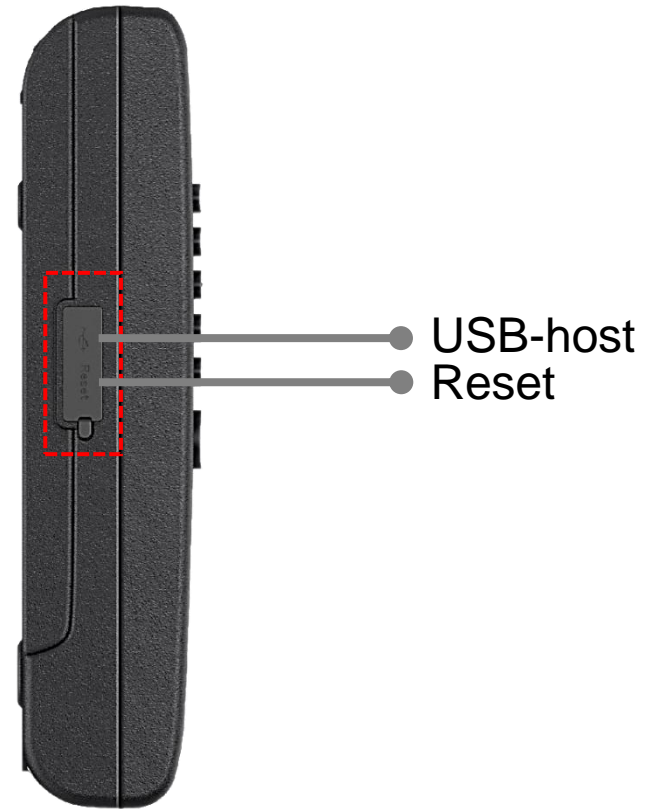
Prox Card

## Product PIN Diagram

### ■ Front View

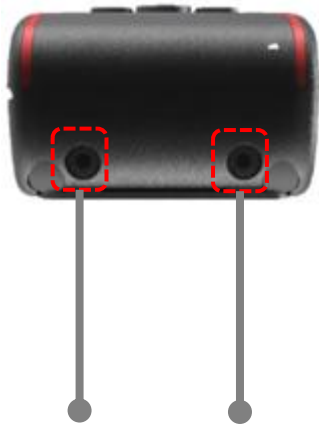


### ■ Side View



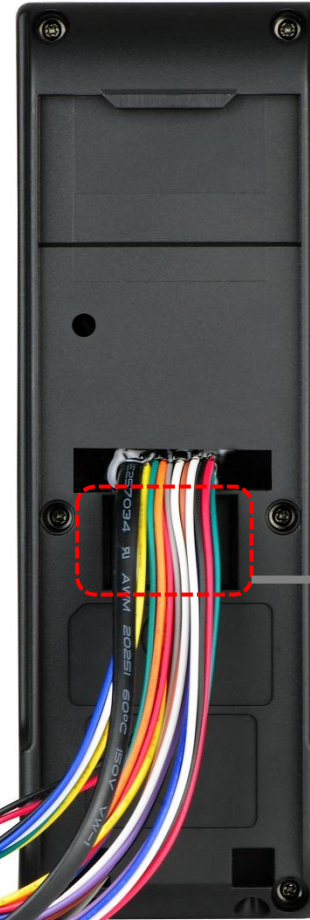
## Product PIN Diagram

### ■ Bottom View

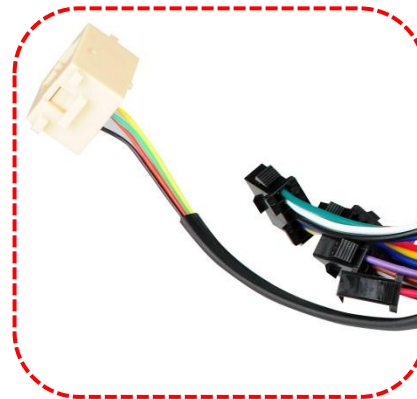


Star-shaped screw hole for fixing reader to the back plate

### ■ Back View



Tamper switch  
(Magnetic Contact)



- \* TCP/IP
- \* RS485
- \* Wiegand Input and Output
- \* Access Control Interface for Electric Lock, Door Sensor, Exit Button, Alarm

Cables and Connectors

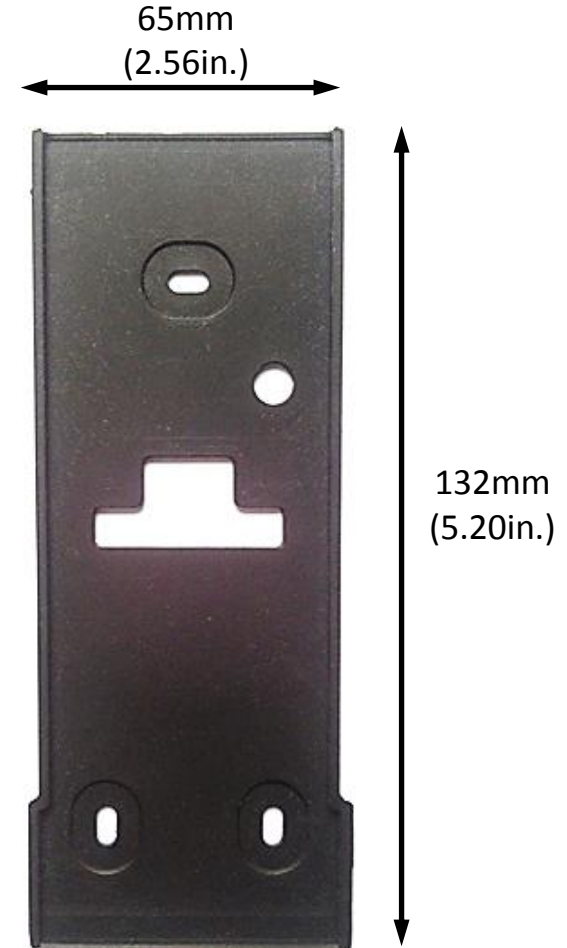
## Product Dimension



Front View



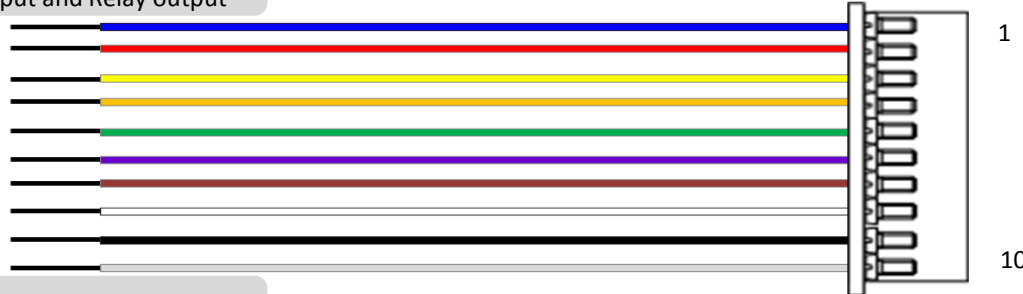
Side View



Rubber Gasket

# Cables and Connectors

Aux. input and Relay output



PIN	PIN DESCRIPTION	WIRE
1	NO1	BLUE
2	COM1	RED
3	NC1	YELLOW
4	NO2	ORANGE
5	COM2	GREEN
6	BELL-	PURPLE
7	BELL+	BROWN
8	SEN	WHITE
9	GND	BLACK
10	BUT	GRAY

Weigand input and Power out



PIN	PIN DESCRIPTION	WIRE
1	+12V	RED
2	GND	BLACK
3	IWD1	WHITE
4	IWD0	GREEN
5	RLED	BLUE
6	GLED	GRAY
7	BEEP	PURPLE

Weigand Output and RS485



PIN	PIN DESCRIPTION	WIRE
1	WD0	GREEN
2	WD1	WHITE
3	GND	BLACK
4	485+	BLUE
5	485-	YELLOW

Ethernet



PIN	PIN DESCRIPTION	WIRE
1	RJ45-1	YELLOW
2	RJ45-2	GREEN
3	RJ45-3	RED
4	RJ45-6	BLACK

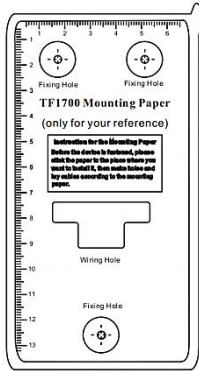
Power In



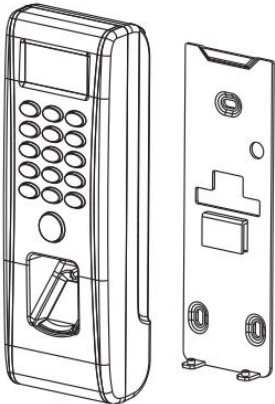
PIN	PIN DESCRIPTION	WIRE
1	+12V DC	RED
2	GND	BLACK

## Mounting the reader on the Wall

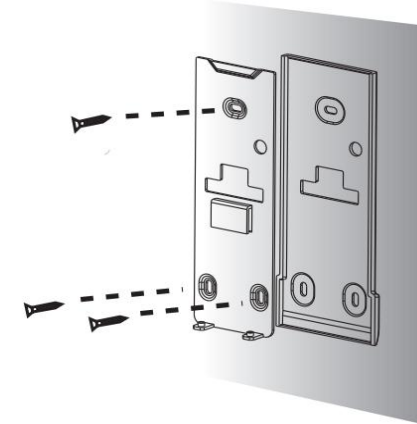
- Stick the mounting template on the wall and make holes as per the markings.



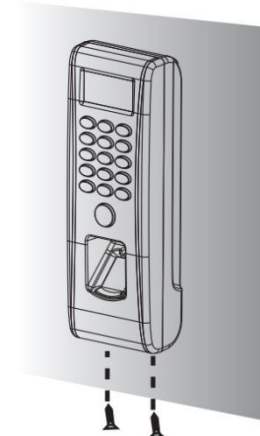
- Mount TF1700 terminal on the Back plate



- Mount the rubber gasket and the back plate on the wall with the help of the supplied screws.

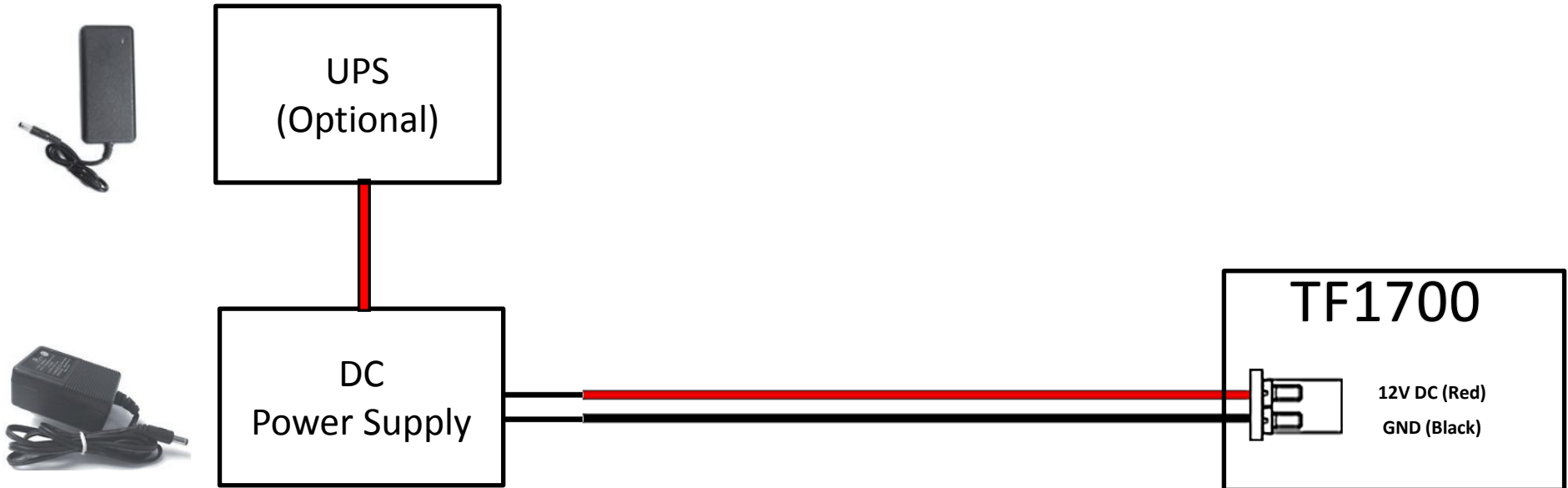


- Secure the TF1700 by fixing two screws at the bottom.



## Power Connection

PIN	PIN DESCRIPTION	WIRE
1	+12V DC	RED
2	GND	BLACK

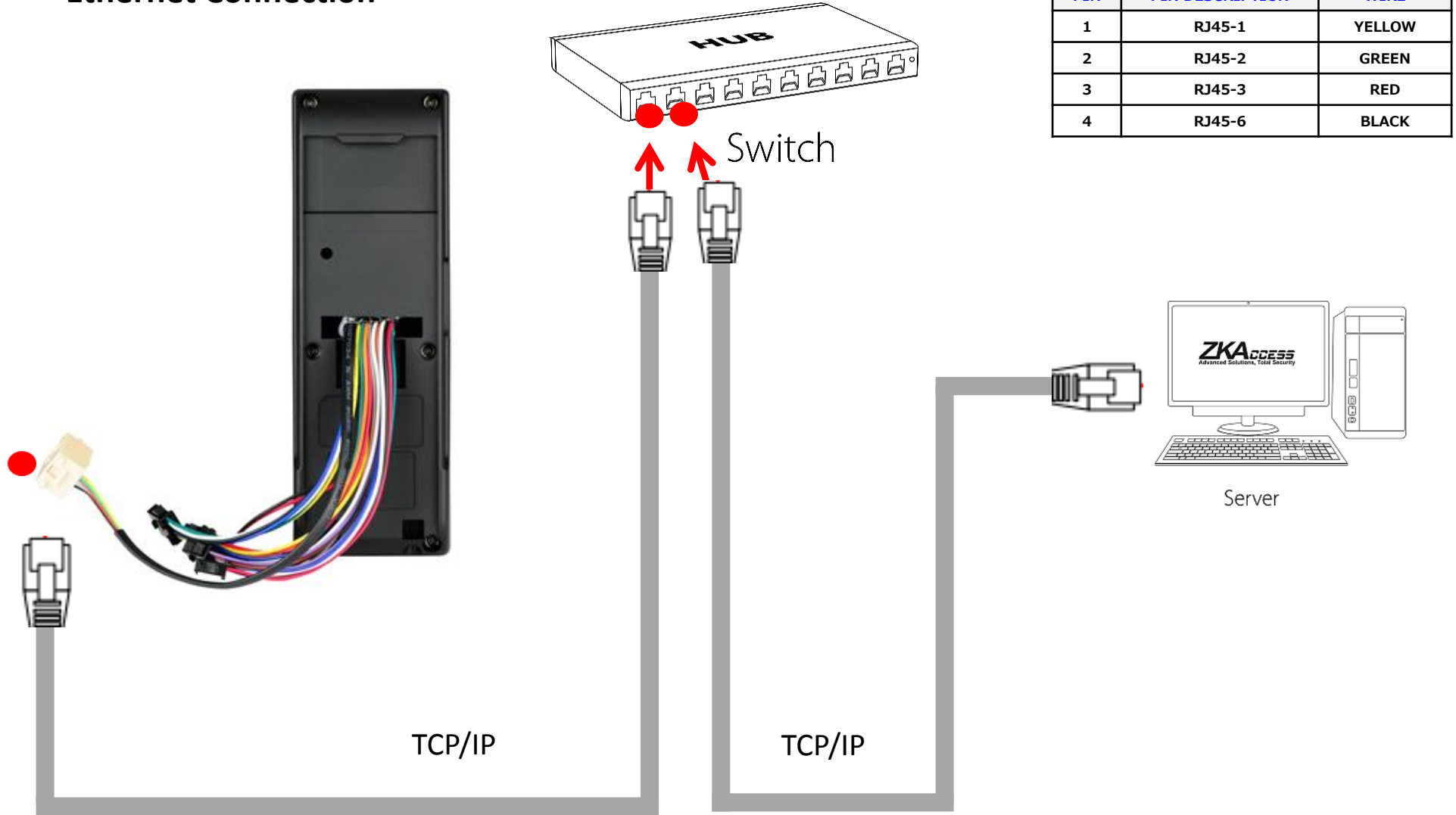


- Recommended power supply
- Regulated 12VDC, 1A
- Comply with standard IEC/EN 60950-1.
- To power other devices from the power supply of TF1700, use a power supply with higher current rating.



# Ethernet Connection

## Ethernet Connection

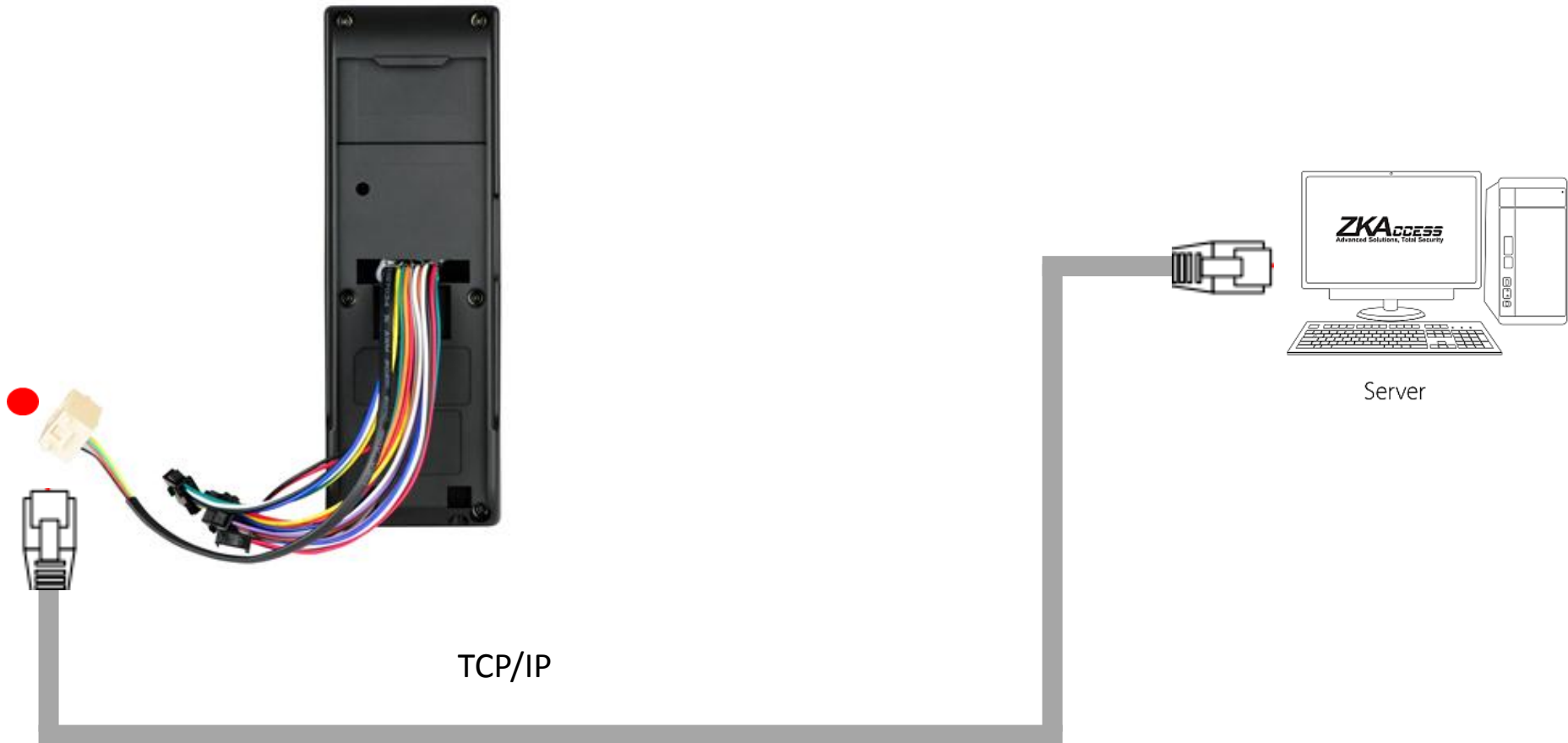


## Ethernet Connection

### ■ Direct connection with PC

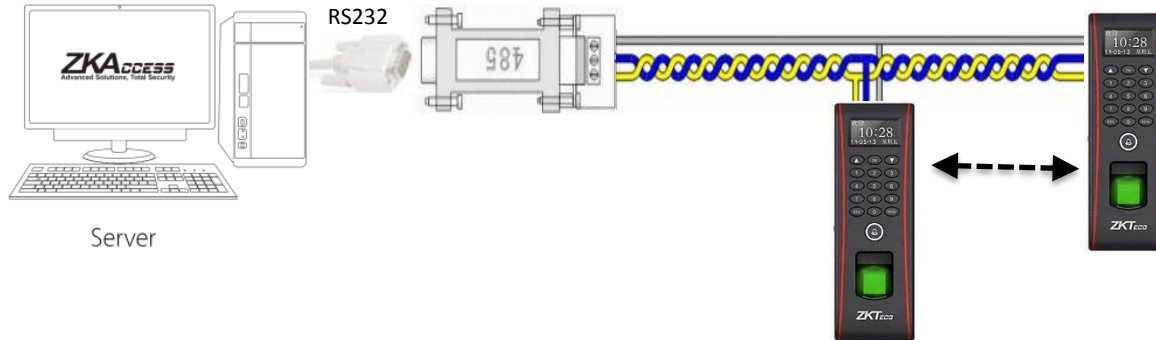
- **To connect TF1700 with a PC directly, connect both devices with a straight CAT-5 cable. As the TF1700 supports auto MDI/MDIX feature, it is not necessary to use a crossover cable.**

PIN	PIN DESCRIPTION	WIRE
1	RJ45-1	YELLOW
2	RJ45-2	GREEN
3	RJ45-3	RED
4	RJ45-6	BLACK



# PC RS485 Connection

## PC RS485 Connection



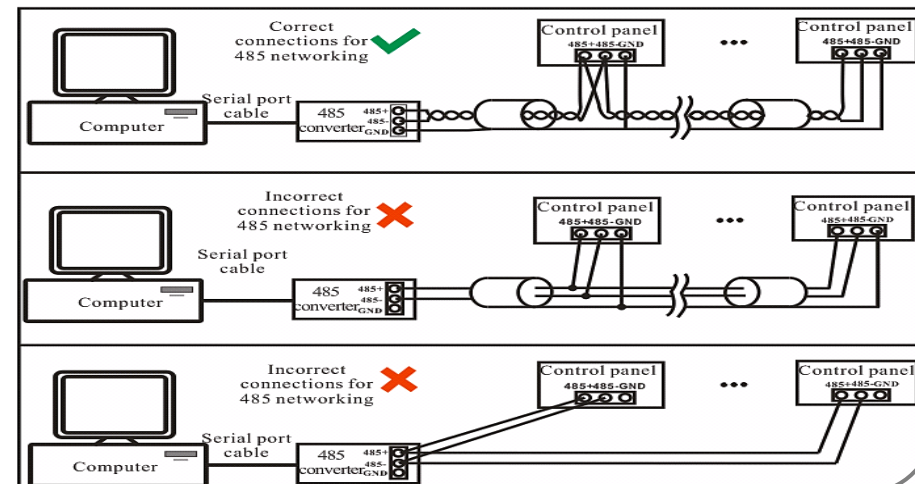
PIN	PIN DESCRIPTION	WIRE
1	WD0	GREEN
2	WD1	WHITE
3	GND	BLACK
4	485+	BLUE
5	485-	YELLOW



## Important Notes

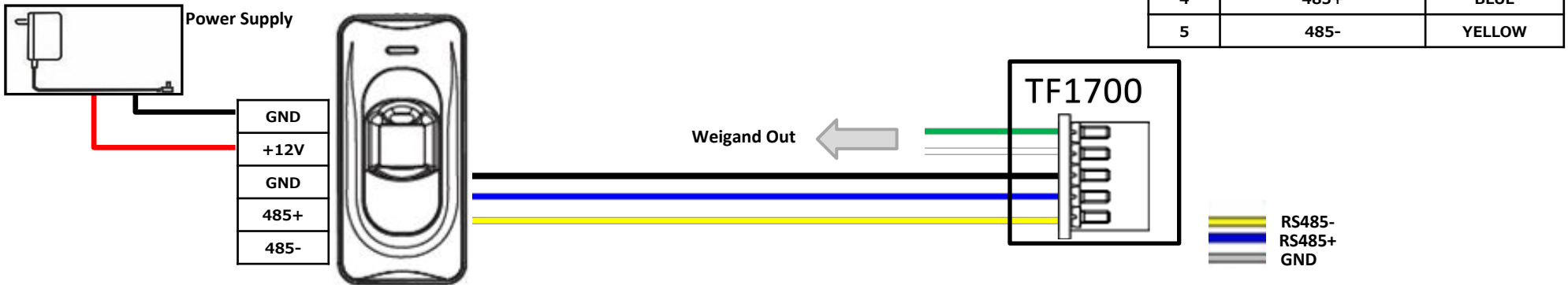
1. RS485 communication wires should be a shielded or twisted pair cable. RS485 communication wires should be connected in a bus cascade instead of a star form, to achieve a better shielding effect by reducing signal reflection during communications.
2. Adjust the communication speed as needed, The signal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

## Do's and Dont's for RS485 connection



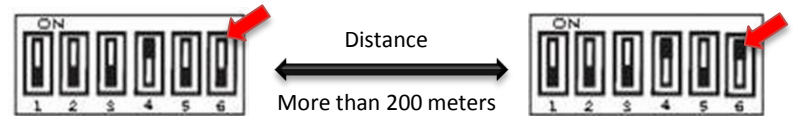
# FR1200 RS485 Connection

## PC RS485 Connection



Menu -> Options-> Access Options-> 485Reader -> 485Reader (Master)

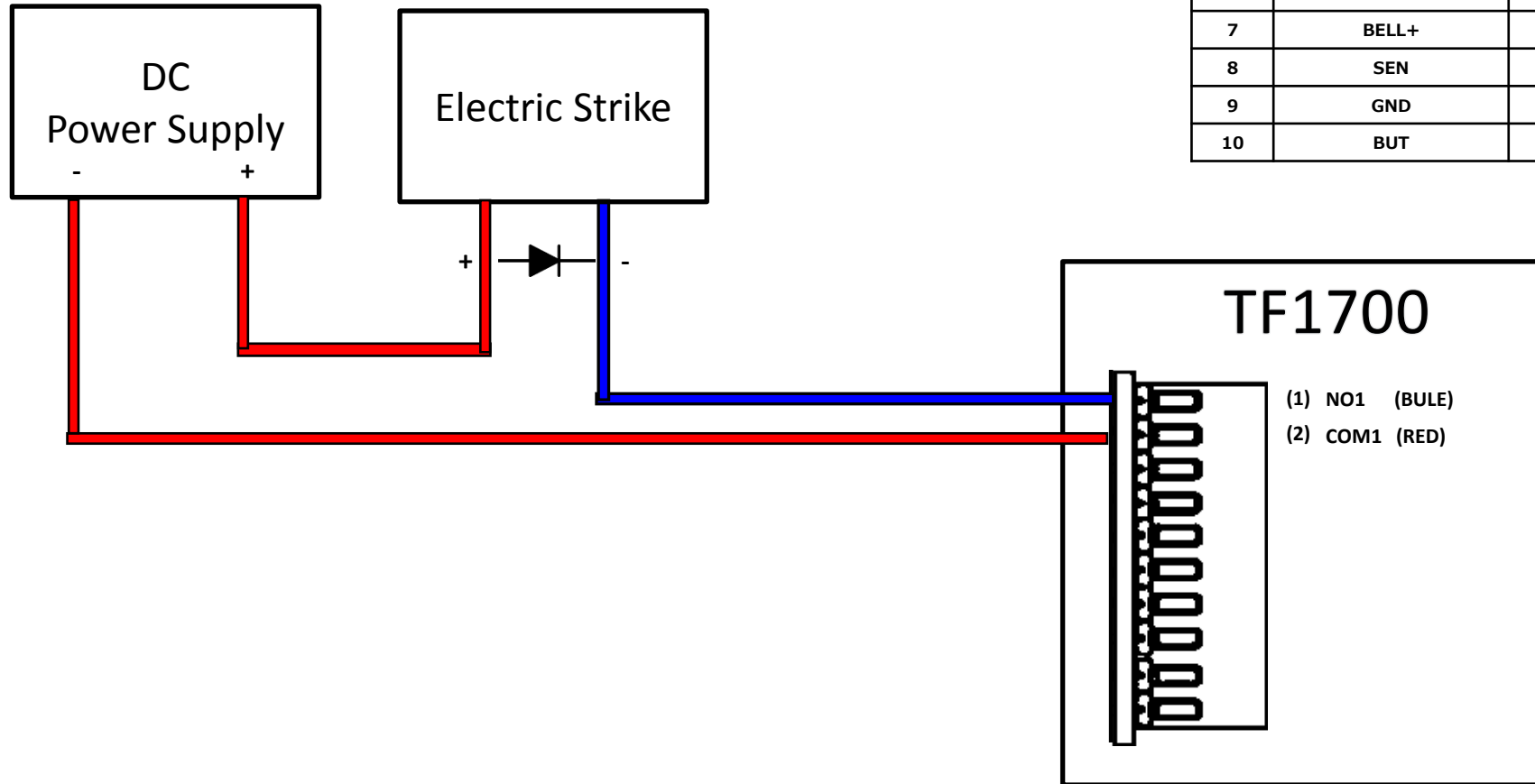
- Steps to activate the master and slave functionality between TF1700 and FR1200 as shown in the diagram on the left.
- There are six DIP switches on the back of FR1200, Switches 1-4 is for RS485 address, switch 5 is reserved, switch 6 is for reducing noise on long RS485 cable.
- If FR1200 is powered from TF1700 terminal, the length of wire should be less than 100 meters or 330 ft.
- If the cable length is more than 200 meters or 600 ft., the number 6 switch should be ON as below
- If the 485Reader set as Slave, it will be used as inBIO-series reader, check page 28 to know more.



# Lock Relay Connection

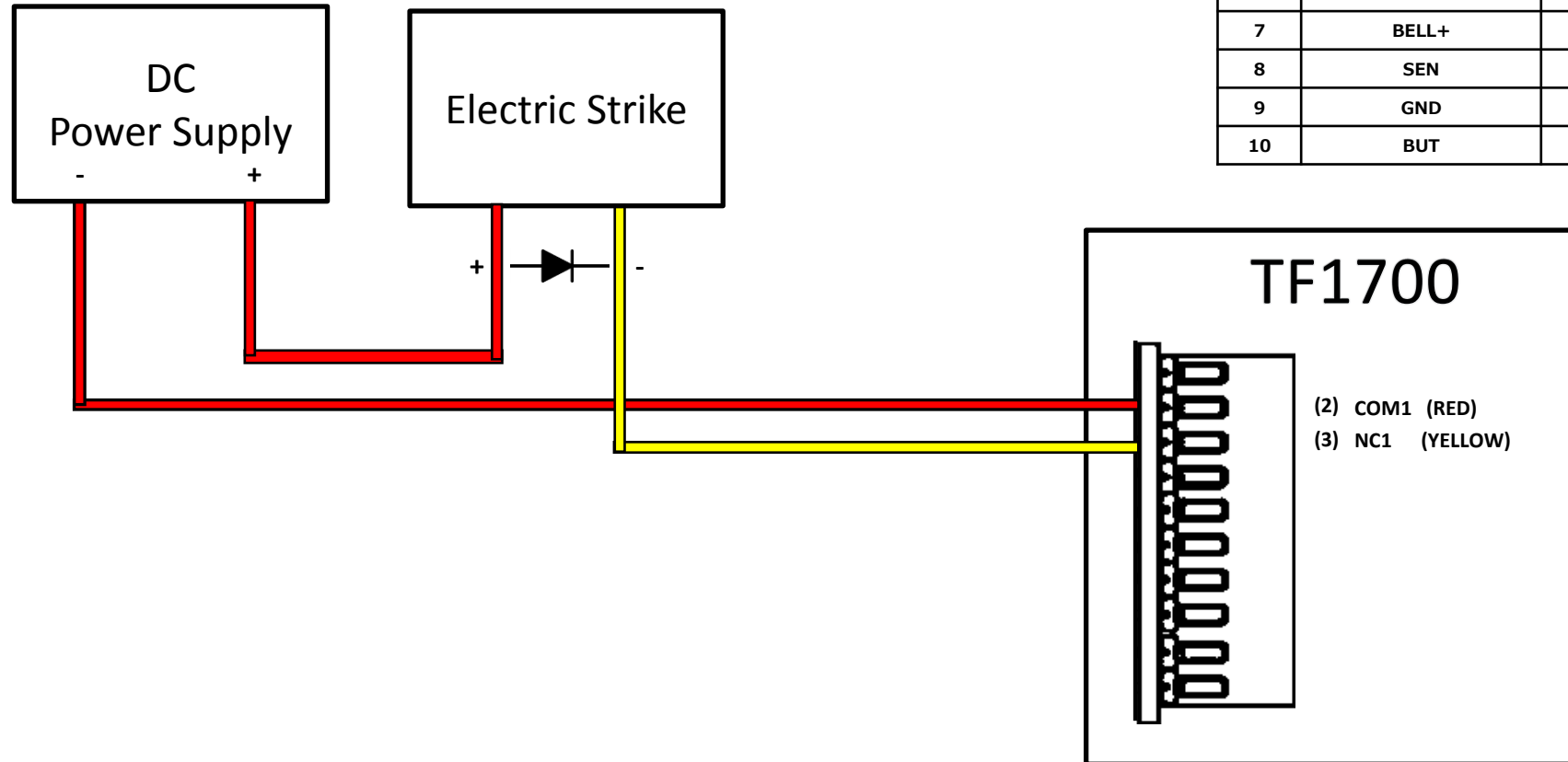
## ■ For Normally Open Lock

PIN	PIN DESCRIPTION	WIRE
1	NO1	BLUE
2	COM1	RED
3	NC1	YELLOW
4	NO2	ORANGE
5	COM2	GREEN
6	BELL-	PURPLE
7	BELL+	BROWN
8	SEN	WHITE
9	GND	BLACK
10	BUT	GARY



## Lock Relay Connection

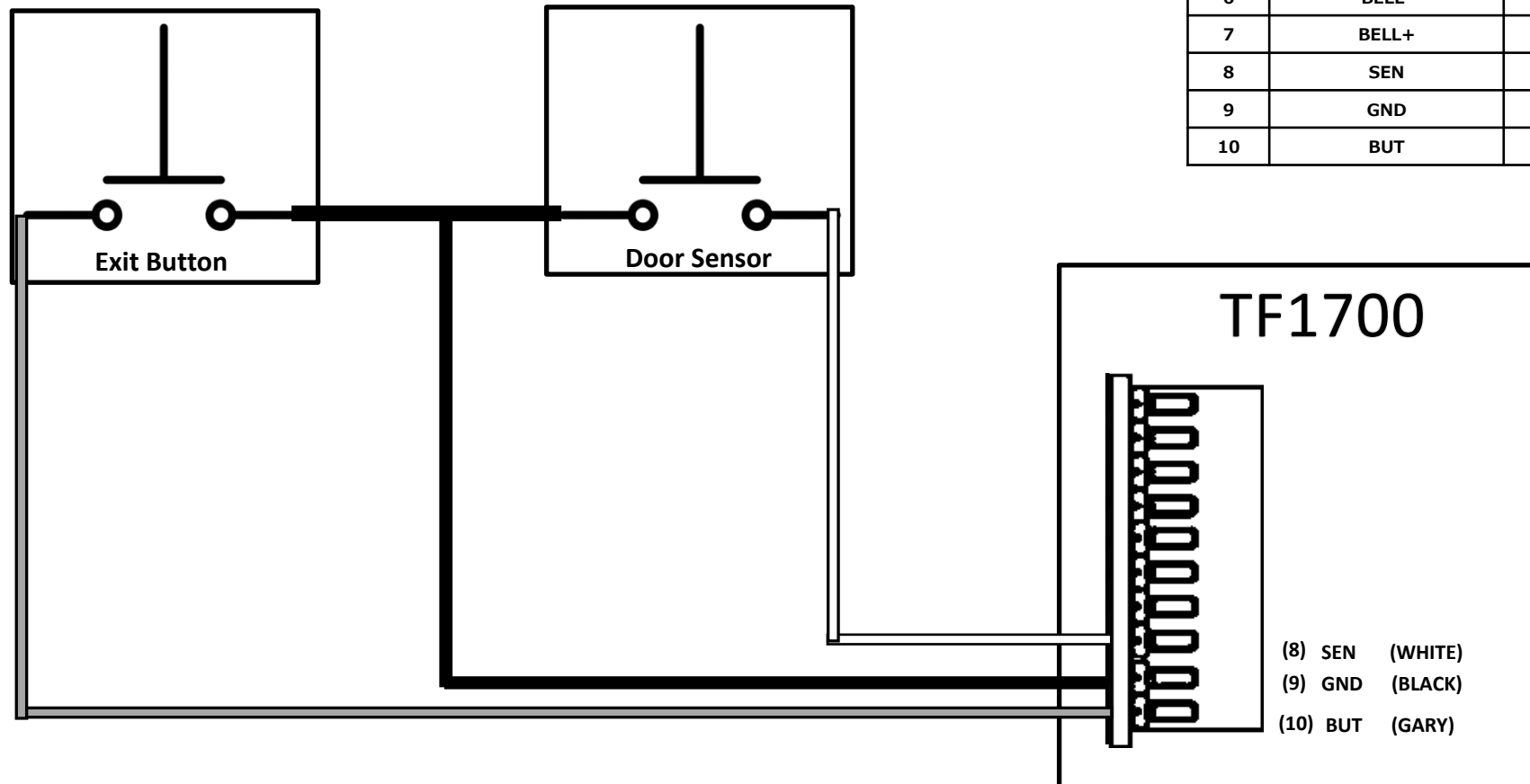
### ■ For Normally Closed Lock



PIN	PIN DESCRIPTION	WIRE
1	NO1	BLUE
2	COM1	RED
3	NC1	YELLOW
4	NO2	ORANGE
5	COM2	GREEN
6	BELL-	PURPLE
7	BELL+	BROWN
8	SEN	WHITE
9	GND	BLACK
10	BUT	GRAY

## Aux. Input Connection

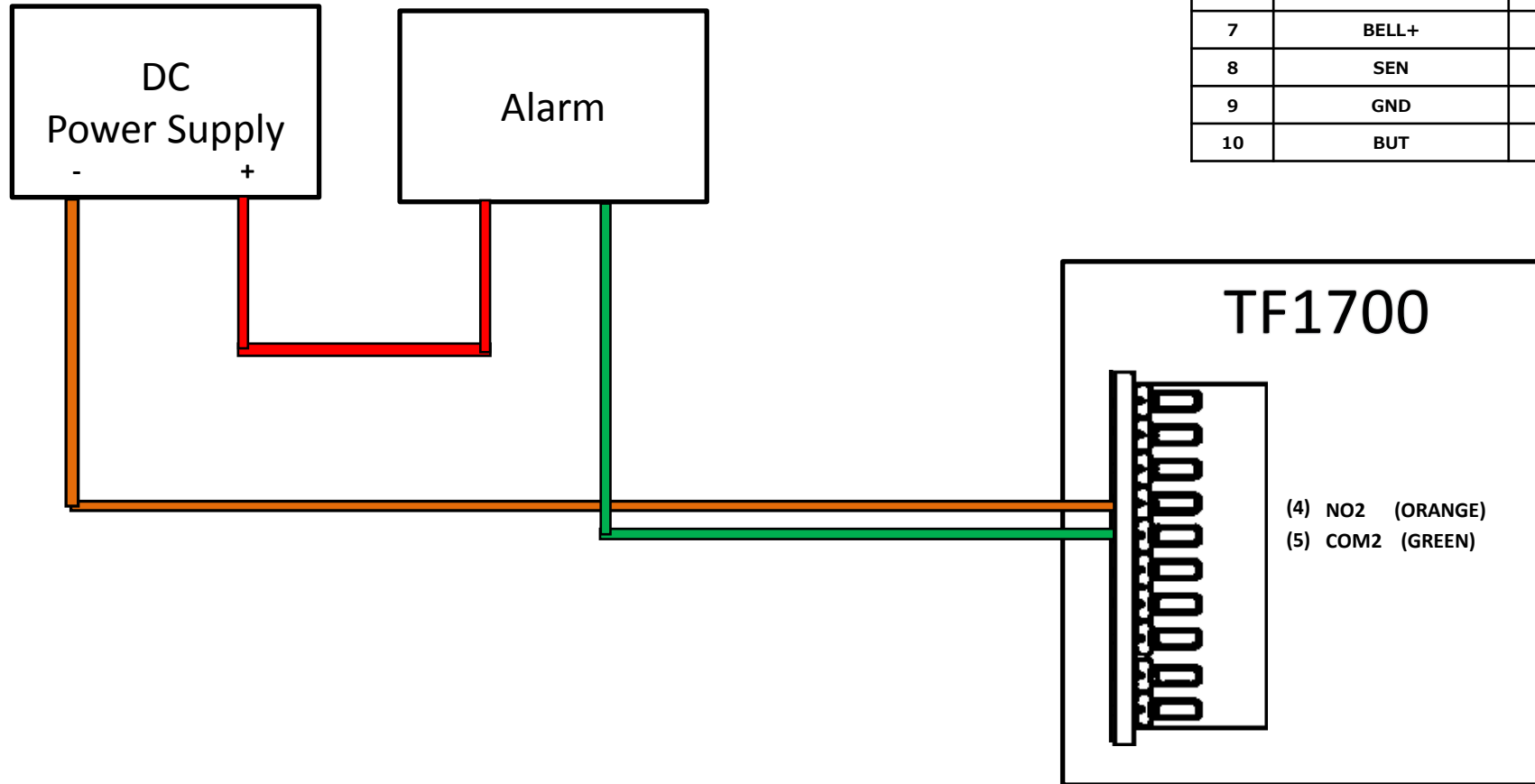
PIN	PIN DESCRIPTION	WIRE
1	NO1	BLUE
2	COM1	RED
3	NC1	YELLOW
4	NO2	ORANGE
5	COM2	GREEN
6	BELL-	PURPLE
7	BELL+	BROWN
8	SEN	WHITE
9	GND	BLACK
10	BUT	GARY





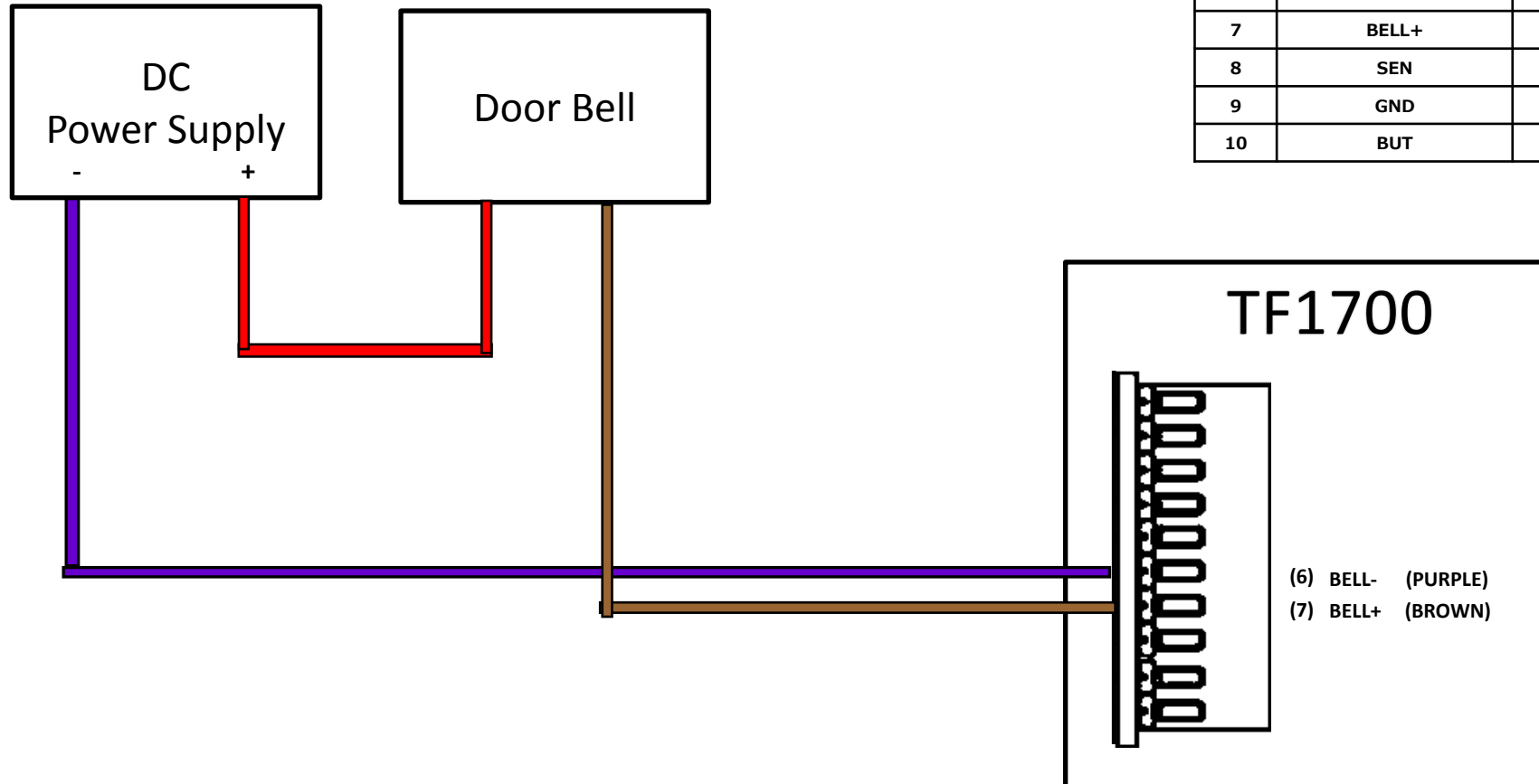
## Aux. Output Connection

PIN	PIN DESCRIPTION	WIRE
1	NO1	BLUE
2	COM1	RED
3	NC1	YELLOW
4	NO2	ORANGE
5	COM2	GREEN
6	BELL-	PURPLE
7	BELL+	BROWN
8	SEN	WHITE
9	GND	BLACK
10	BUT	GRAY



## Aux. Output Connection

PIN	PIN DESCRIPTION	WIRE
1	NO1	BLUE
2	COM1	RED
3	NC1	YELLOW
4	NO2	ORANGE
5	COM2	GREEN
6	BELL-	PURPLE
7	BELL+	BROWN
8	SEN	WHITE
9	GND	BLACK
10	BUT	GARY



# Weigand Input Connection

PIN	PIN DESCRIPTION	WIRE
1	+12V	RED
2	GND	BLACK
3	INWD1	WHITE
4	INWD0	GREEN
5	RLED	BLUE
6	GLED	GARY
7	BEEP	PURPLE

DC+(6-14V)

GND

WD1

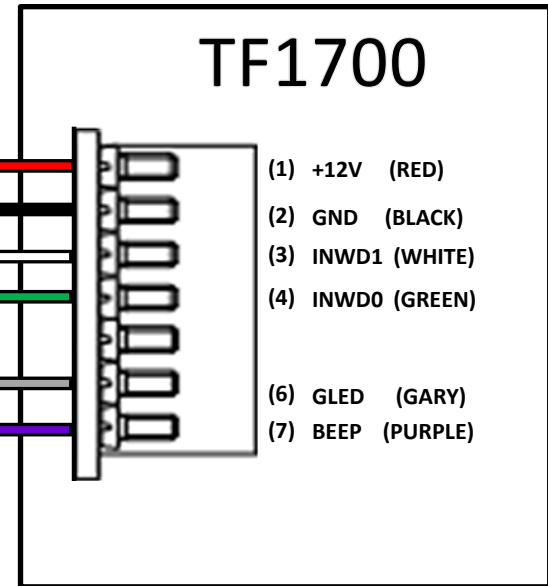
WD0

Green LED

Beeper

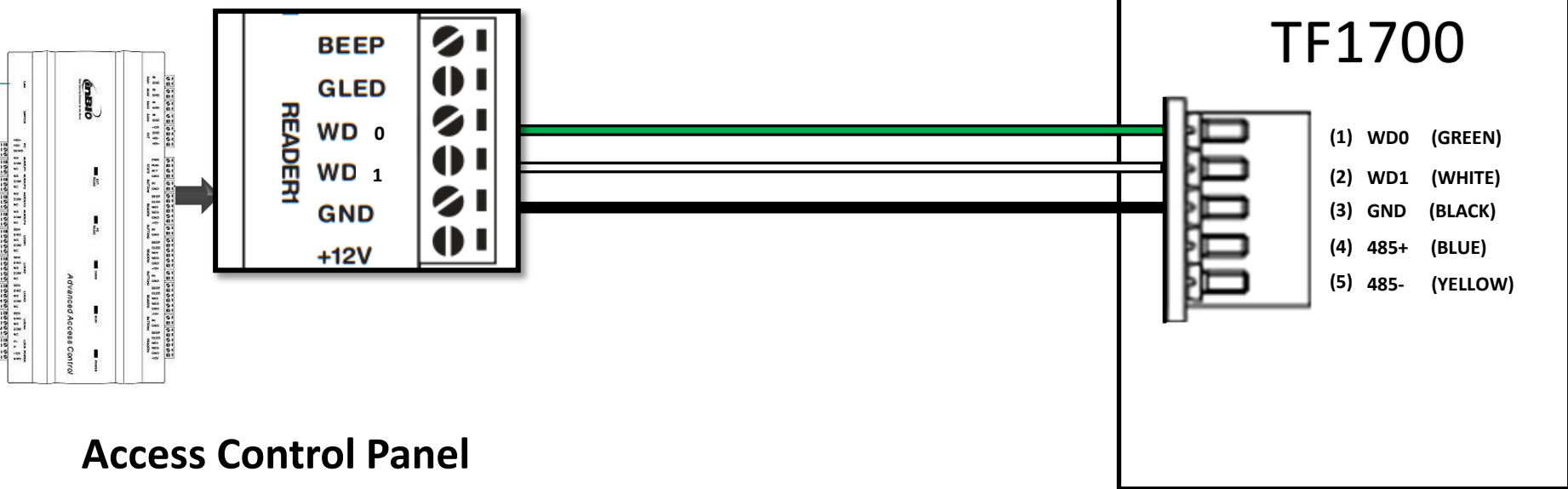


**RFID Reader**



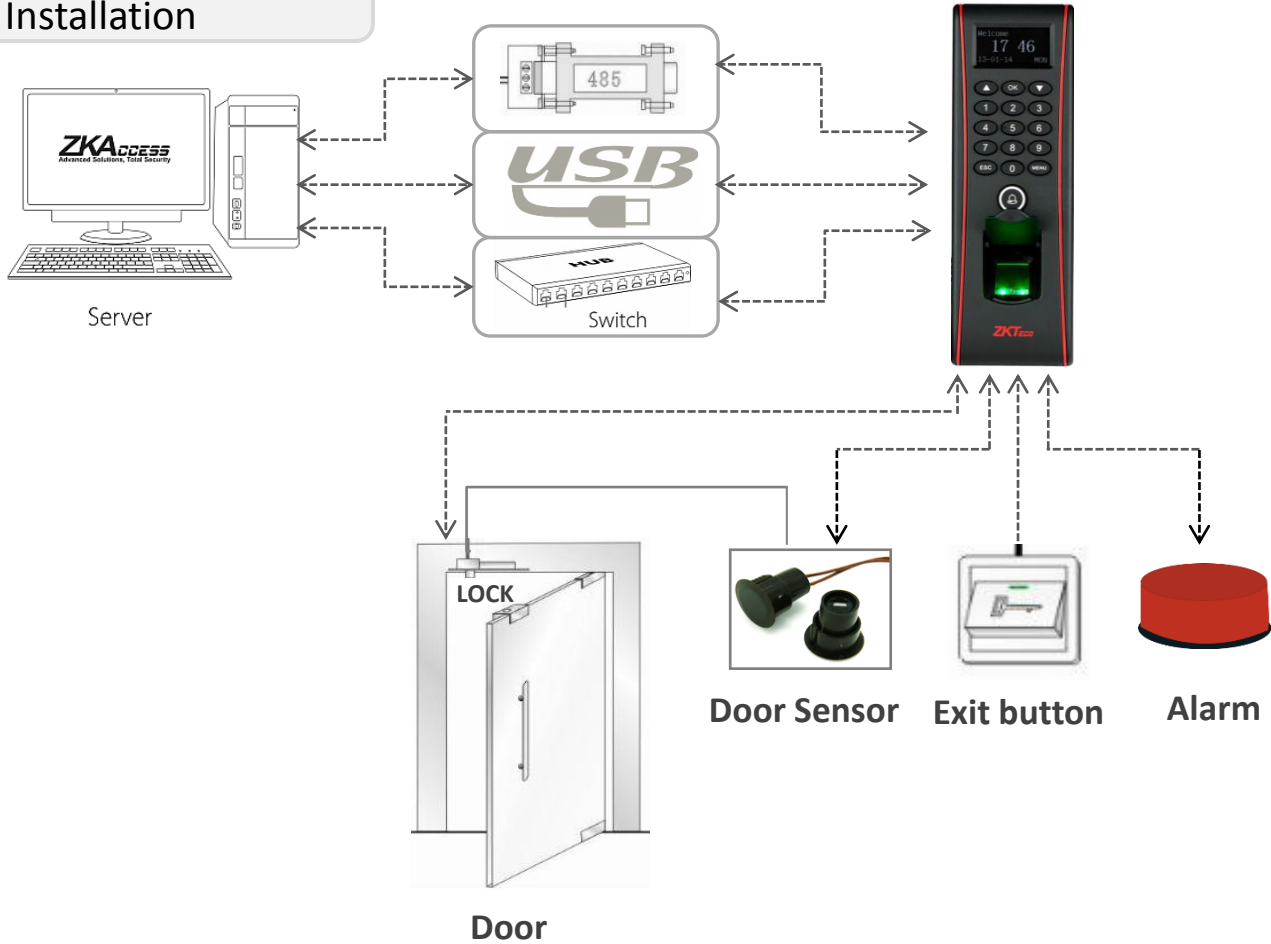
# Weigand Output Connection

PIN	PIN DESCRIPTION	WIRE
1	WD0	GREEN
2	WD1	WHITE
3	GND	BLACK
4	485+	BLUE
5	485-	YELLOW



# Installation Reference

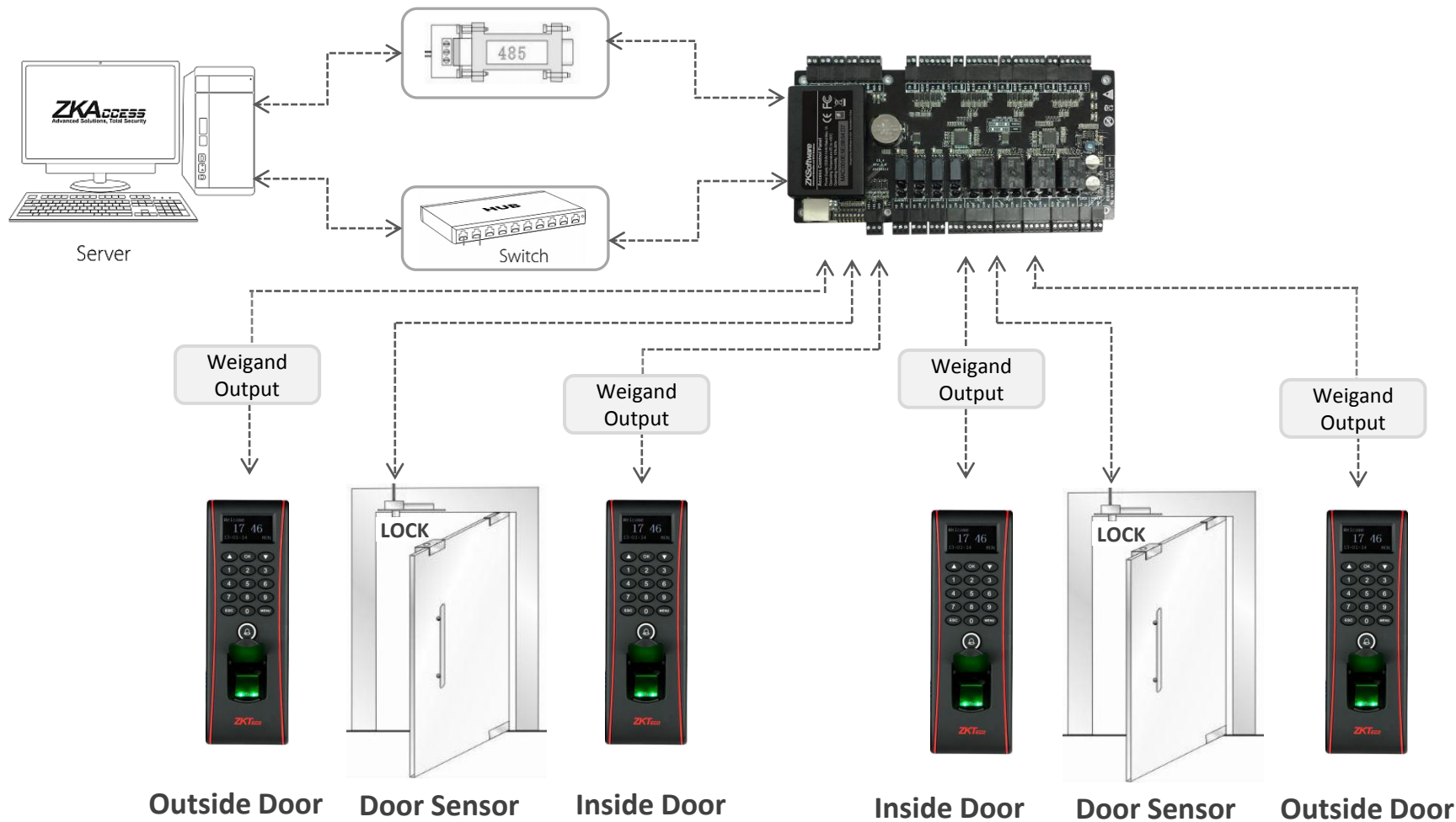
## Standalone Reader Installation



# Installation with C3 Panel

## Third Party Controller

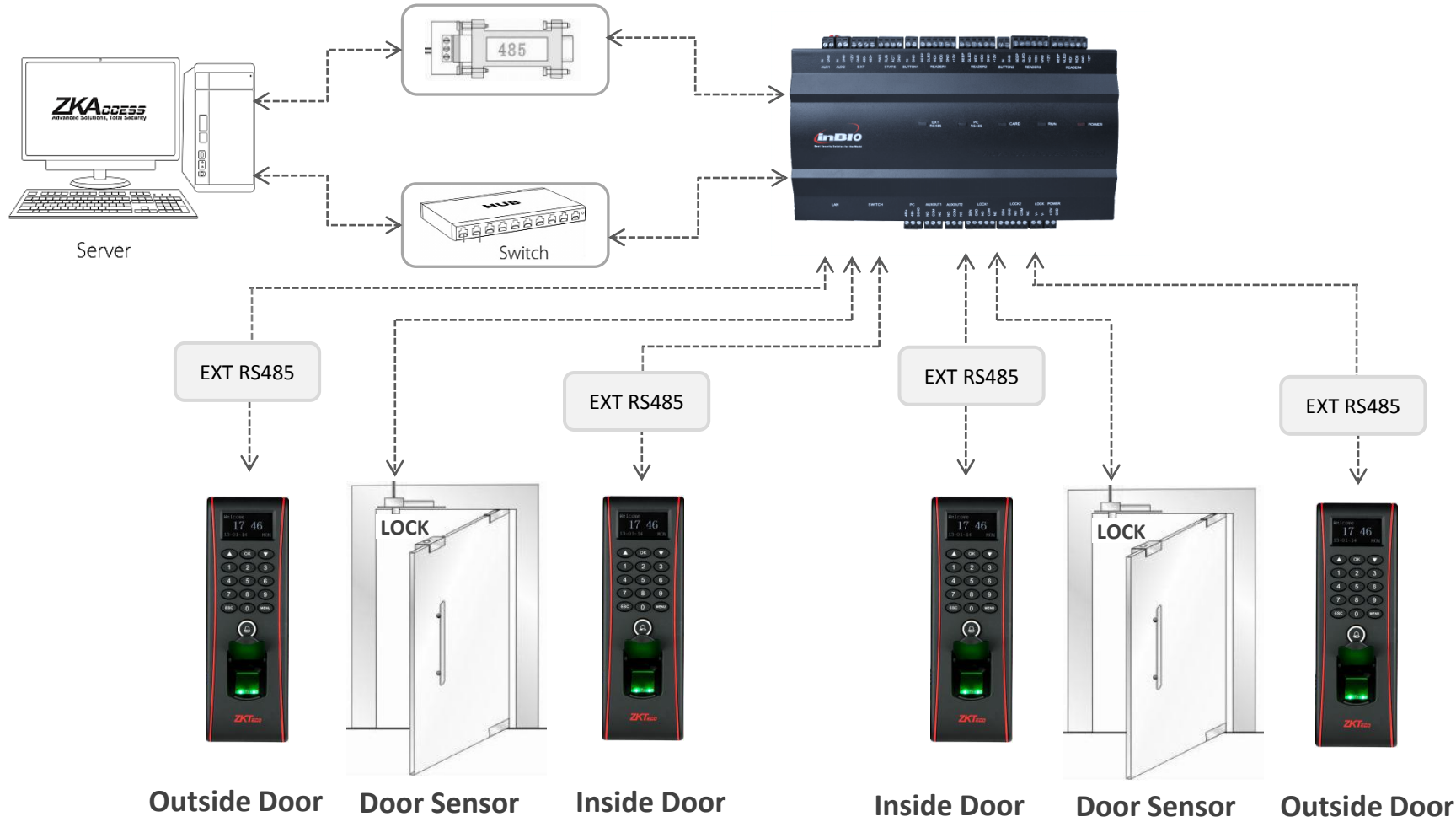
## Weigand Output Connection



# Installation with inBio Panel

inBIO-series Controller

RS485 Connection





## Specification

Item	Specification
Fingerprint capacity	3,000
Transaction capacity	100,000
Hardware Platform	ZEM720
CPU	ZK 6001, 400Mhz
Memory	128MB Flash, 32MB SDRAM
Fingerprint Sensor	ZK optical sensor
Display	128*64 OLED screen
LED Indicator	Red, Green
Communication	Ethernet ( 10/100M ) , RS485, USB-HOST,
Weigand signal	Wiegand Input and Wiegand Output
Identification speed	≤1 sec
FAR	≤0.0001%
FRR	≤1%
Operating Temperature	-10°C~50°C ( 14°F~50°F )
Operating Humidity	20%-80%
Language	English, Spanish, Portuguese, French, Thai and many more
Power Supply	12V DC, 3A
Access control interfaces	Electric lock, alarm, exit button, wired door bell
Dimension	62.5*185*41.5mm (L*W*D)

# Electrical Specification

	Min.	Typ.	Max.	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)			36V	Use regulated DC power adaptor only
Switching Current(A)			2	
Switch Aux. input				
V <sub>IH</sub> (V)		TBD		
V <sub>IL</sub> (V)		TBD		
Pull-up resistance (Ω)		4.7k		The input ports are pulled up with 4.7k resistors
WEIGAND Input				
Voltage(V)	10.8	12	13.5	
Current(mA)			500	
TTL/WEIGAND Output				
V <sub>oH</sub> (V)		5		
V <sub>oL</sub> (V)		0.8		
Pull-up resistance (Ω)		4.7K		The output 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	

- 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.
- 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.
- Authorized but door does not open.
  - Check whether the lock duration is set to appropriate minutes 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.
- 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.

# ZKT<sup>®</sup>ECO

## ZKACCESS

Advanced Solutions, Total Security



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Functions and specifications of the product are subject to change without notice due to quality enhancement or function update.  
For any inquiry for the product, please contact ZKACCESS.