

# **Brushless Barrier Gate Control Board Quick Guide**

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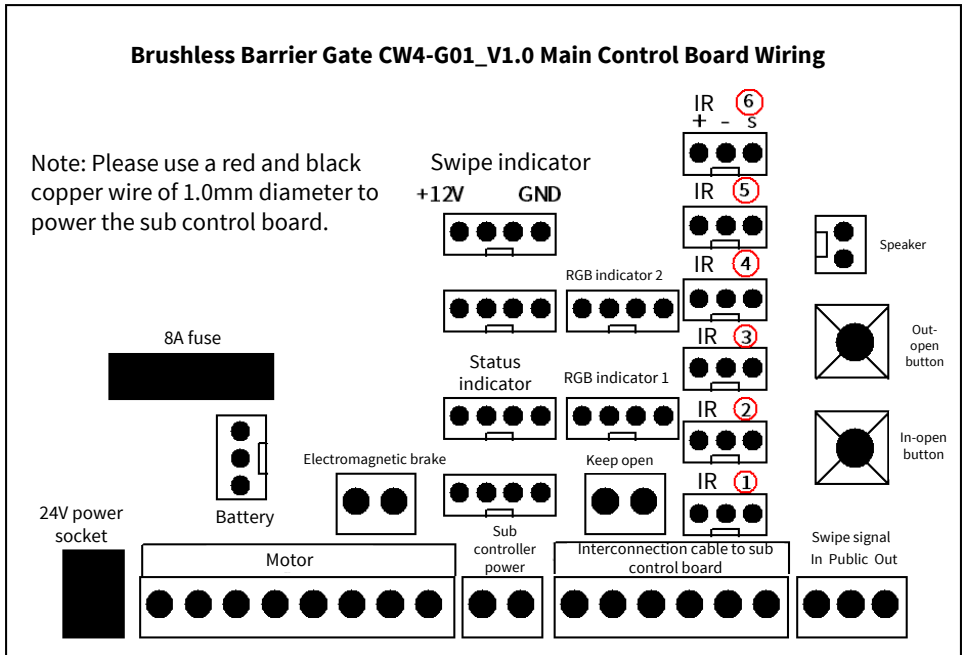
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# 1 System Features

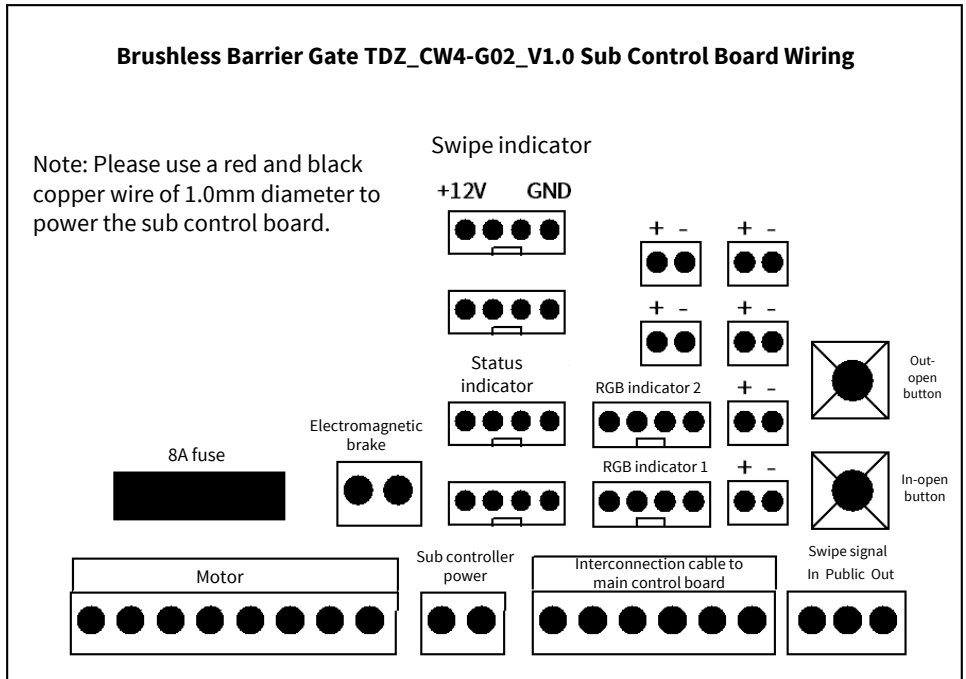
- MCU with a hardware watchdog circuit ensures uninterrupted system operation.
- Impact detection ensures the safety of pedestrians and the device.
- Barrier position detection throughout the operation.
- Automatically open in case of power failure for fire protection.
- Illegal break-in alarm.
- Illegal tailgating alarm.
- Reverse access alarm.
- Keep closed in case of reverse access (optional).
- With improved access control logic, the gate can automatically close after people pass, and false alarms are eliminated.
- Able to count the number of people entering/exiting.
- Traffic direction indicators.
- Automatic control of lane traffic status indication according to the set lane traffic mode.
- Card authentication memory.
- Anti-pinch.
- Delayed closing after a pass.
- Adjustable opening/closing speed.
- Automatically close after a timeout even if the person has not passed.
- IR sensor self-test after power-on.
- Keep open.
- Precise speed control ensures that the gate runs smoothly.
- Automatic charging of backup power.
- Motor operation time, current protection.
- Aging test.
- Suitable for the control of a variety of devices, such as two-way swing barriers, one-way swing and flap barriers, and unilateral swing barriers.
- Status indicators deliver indications of all input and output signals to facilitate product use and after-sales maintenance.
- Versatile LED display functions provide clear device status.
- Automatically close if the power restores from a failure.
- Multiple opening modes including card authentication and keep open.
- Audio messages.
- Remote control functions (optional): remote opening, remote configuration, remote check of device operation status, etc.
- RS485/RS232 communication.
- Multiple interfaces allow the device to connect various card readers, fingerprint readers and face recognition devices.

## 2 Control Boards and Buttons

### 1) Main Control Board Wiring

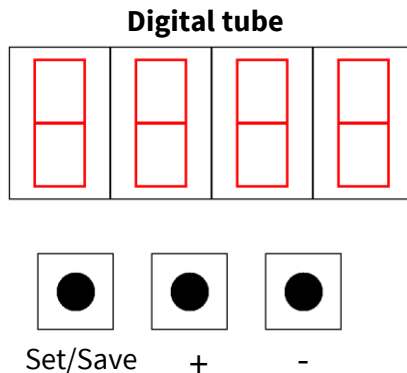


## 2) Sub Control Board Wiring



## 3) Button Description

The control board provides 3 buttons for configuring function parameters, and a set of 4 digital tubes for display.



**Set:** In standby mode, press and hold the **Set** button for about 2s to open the setup menu. And the digital tube will display the parameter type, such as P-01.

**+/-:** In menu mode, use the two buttons to change the parameter type and values displayed on the digital tube. For example, if the currently displayed parameter is P-02, you can press + to switch to P-03, or press - to switch to P-01.

**Save:** In menu mode, press the **Save** button to enter the configuration page of the current parameter, press +/- to change the parameter value, and then press **Save** again to save the changes. The buzzer makes a long beep after successful saving.

#### 4) Parameter Description

Parameter Type	Function	Value Options /Range	Function Description	Default
P-00	Reserved	/	/	0
P-01	In access mode	0/1	Set the access mode for entry. 0: Card authentication. 1: Free (infrared induction).	0
P-02	Out access mode	0/1	Set the access mode for exit. 0: Card authentication. 1: Free (infrared induction).	0
P-03	In audio message	0/1/2/3/ 4/5	Set the audio message for entry. 0: Mute (no audio message). 1: Welcome. 2: Welcome back. 3: Welcome home. 4: Have a good trip. 5: Have a safe trip.	1
P-04	Out audio message	0/1/2/3/ 4/5	Set the audio message for exit. 0: Mute (no audio message). 1: Welcome. 2: Welcome back. 3: Welcome home. 4: Have a good trip. 5: Have a safe trip.	5

P-05	Memory	0/1	Choose to enable or disable swipe count. 0: Off. The gate only allows one person to pass at a time. 1: On. The gate allows multiple authenticated people to pass consecutively at a time.	0
P-06	In access permission	0/1	Set the access permission for entry. 0: Forbid. The gate does not open even if a person passes the card authentication. 1: Allow.	1
P-07	Out access permission	0/1	Set the access permission for exit. 0: Forbid. The gate does not open even if a person passes the card authentication. 1: Allow.	1
P-08	Main controller opening speed	2-10	Set the opening speed of the main controller of flap barriers or the entry opening speed of the main controller of swing barriers.	7
P-09	Reserved	/	/	0
P-10	Main controller closing speed	2-10	Set the closing speed of the main controller of flap barriers or the entry closing speed of the main controller of swing barriers.	7
P-11	Sub controller motor type	0/1	0: ZTE. 1: TAYB.	0
P-12	Passing time	4-20s	Set the time for a person to pass through the gate after successful card authentication. The gate closes when the time is up, even if the person does not pass.	10
P-13	Aging test	0/1	0: Off. 1: On.	0
P-14	Barrier reaction to intruders during closing	0/1	Set how the barrier reacts to intruders when it is closing. 0: Stop. 1: Open.	1

P-15	Reserved	/	Only for test by engineers.	0
P-16	Motor torque	2-4	The smaller the value, the better the motor can be protected.	3
P-17	Number of IR sensors in the upper row	2/3/4/6	2: 2 pairs. 3: 3 pairs. 4: 4 pairs. 6: 6 pairs.	4
P-18	Barrier reaction to reverse intrusions	0/1	Set how the barrier reacts to reverse intrusions. 0: Open. 1: Close.	0
P-19	Sub controller opening speed	2-10	Set the opening speed of the sub controller of flap barriers or the entry opening speed of the sub controller of swing barriers.	7
P-20	Reserved	0	/	0
P-21	Sub controller closing speed	2-10	Set the closing speed of the sub controller of flap barriers or the entry closing speed of the sub controller of swing barriers.	7
P-22	Reserved	/	Only for test by engineers.	0
P-23	Communication gate number	0-99	Gate number during RS485 communication.	1
P-24	Protection time of opening/closing	3-5s	The maximum time to open and close the gate. When the set time is up, the motor stops running regardless of whether the barrier is open/closed in place, which can effectively protect the motor in the event of limit switch failure.	5
P-25	Motor running direction	/	/	0
P-26	Electromagnetic clutch	0/1	0: Off. 1: On.	0
P-27	Barrier type	0/1	0: Flap barrier. 1: Swing barrier.	1



P-28	Closing delay	0-20s	The delay in closing the gate after a person has passed through the gate.	0
P-29	Barrier reaction to successful card authentication when there are people in the lane	0/1	Set how the barrier reacts to successful card authentication when there are people in the lane. 0: Close. 1: Open.	0
P-30	Arrow direction of the swipe indicator	0/1	0: Forward. 1: Reverse.	0
P-31	Reset	0/1	Restore factory defaults. 0: Off. 1: On.	0
P-32	Reserved	/	Only for test by engineers.	/
P-33	Reserved	/	Only for test by engineers.	/
P-34	Reserved	/	Only for test by engineers.	/
P-35	Out opening limit position	/	Set the opening limit position for exit.	/
P-36	Closing limit position	/	Set the closing limit position.	/
P-37	In opening limit position	/	Set the opening limit position for entry.	/

### 5311 Series

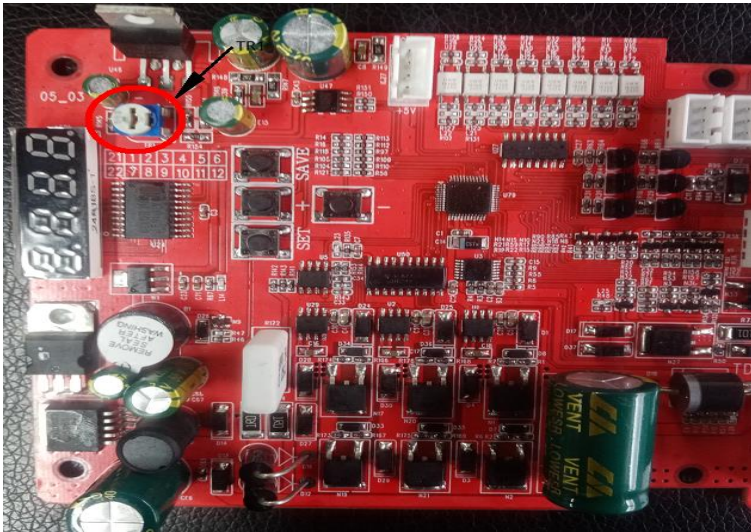
No.	Parameter Type	Function	Value Range	Function Description	Default
1	F01	Passing time	0-255s	If a person passes through the gate within the set time, the time will be automatically reset; if no one passes, the gate will automatically close when the time is up.	5
2	F02	Keep	1-3	1: Only keep the left	3

No.	Parameter Type	Function	Value Range	Function Description	Default
		open		electromagnet open. 2: Only keep the right electromagnet open. 3: Keep both left and right electromagnets open.	
3	F03	Operation mode	0-1	0: Free access 1: Fail-safe (keep open in case of power failure)	1
4	F04	Memory	/	Generally used for gate control by card authentication. When enabled, the gate allows multiple authenticated people to pass consecutively at a time. When disabled, the gate only allows one person to pass at a time.	0
5	F05	Repeatedly open and close	/	Control board stability test and aging test.	/
6	F06	Zero signal	0-1	0: The gate closes when it detects a zero signal. 1: The gate closes after the detected zero signal disappears (commonly used in full-height turnstiles).	0

No.	Parameter Type	Function	Value Range	Function Description	Default
7	F07	Keep open	/	Used to detect continuous open signals. If the received open signal lasts longer than the set time, the gate will consider it a continuous signal and keep open (F2 determines which side opens, both sides open by default); when the signal disappears, the gate returns to standard mode.	0s, keep open off
8	F08	Open delay	/	The minimum time interval between two opens when the memory function is enabled.	0
9	F09	Restore factory defaults	/	Restore all parameters to factory defaults.	/
10	F10	Exit menu	/	/	/

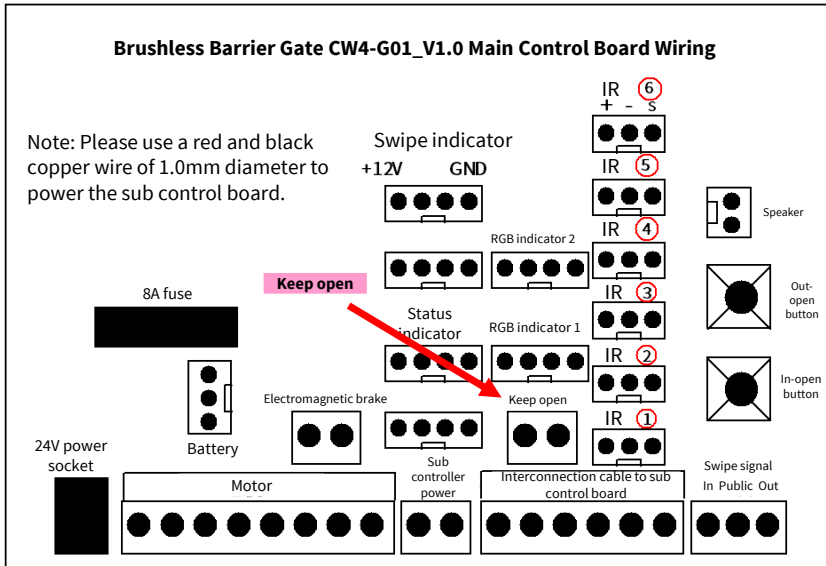
## 5) Volume Adjustment

Rotate the TR1 knob on the main control board clockwise to turn down the volume or counterclockwise to turn up the volume.



## 6) Fire-Triggered Open/Keep Open

The main control board has fire signal input interfaces. When there is a fire signal input, the gate keeps open to allow people to pass freely; when the fire signal disappears, the gate closes immediately and returns to normal operation mode.



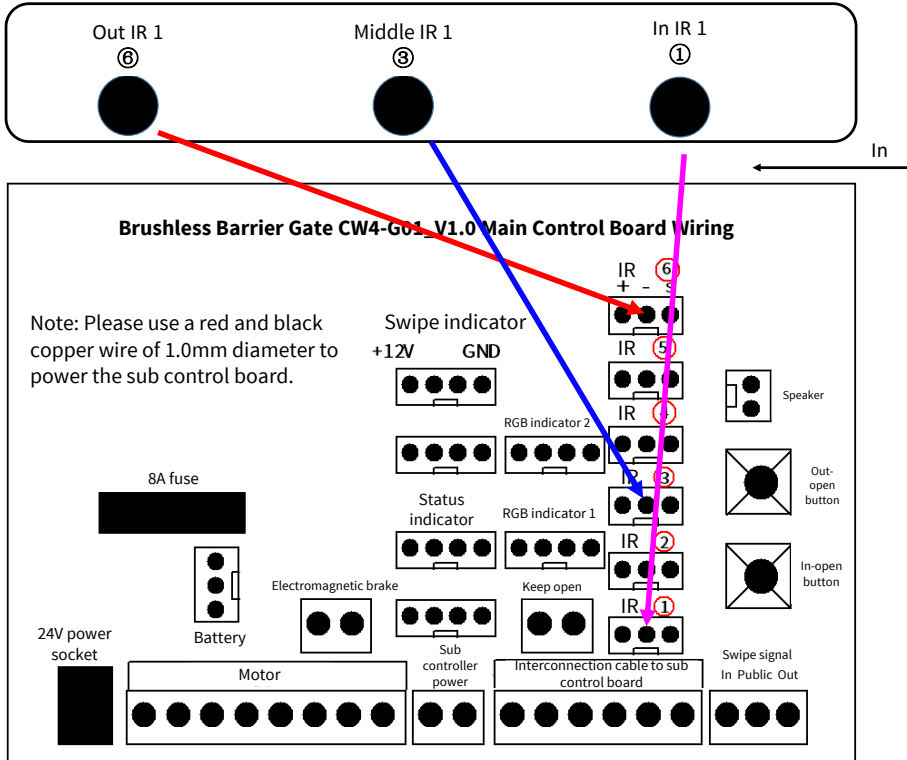
## 7) RS485/RS232 Communication

There is a serial communication interface on the main control board. You can

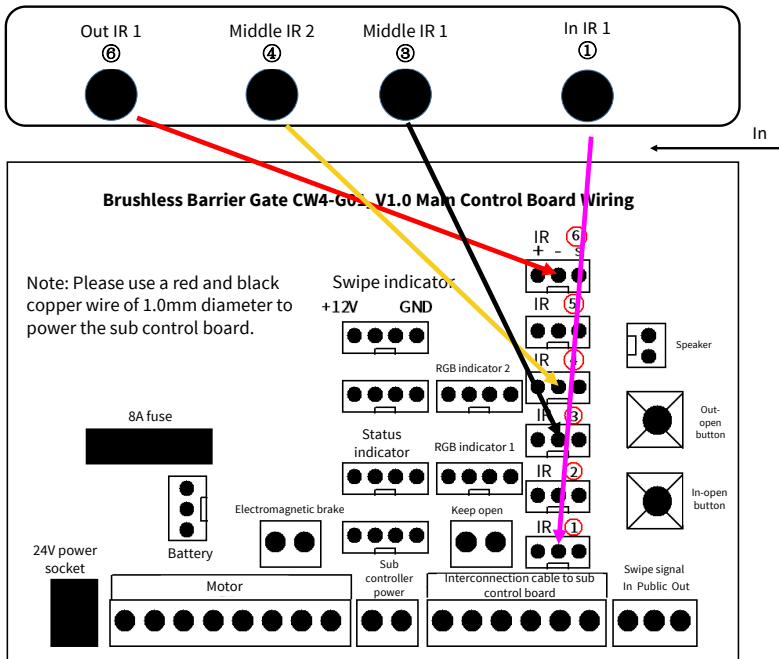
connect it to a computer or other devices for data transmission via an RS485/RS232 converter, such as remote opening signals, gate parameters and number of people entering/exiting.  
 See *Brushless Barrier Gate RS485/RS232 Protocol* for details of the communication protocol.

### 3 IR Sensors

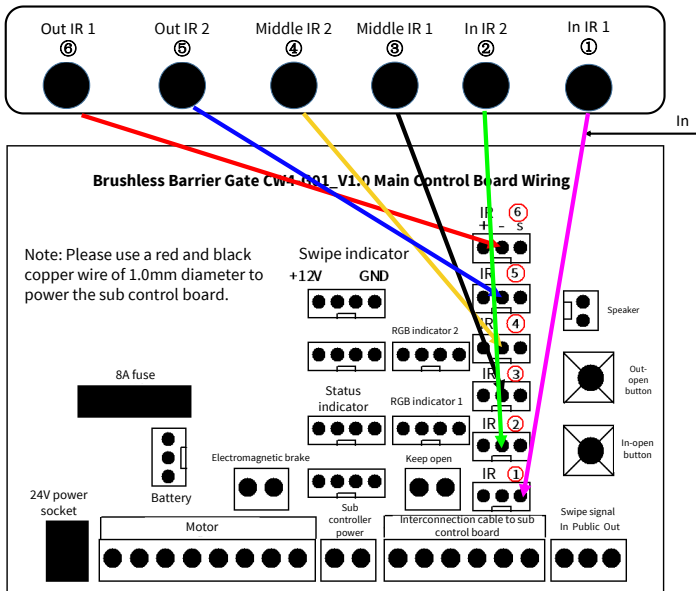
#### 1) Wiring of 3-pair IR Sensors in the Upper Row



#### 2) Wiring of 4-pair IR Sensors in the Upper Row



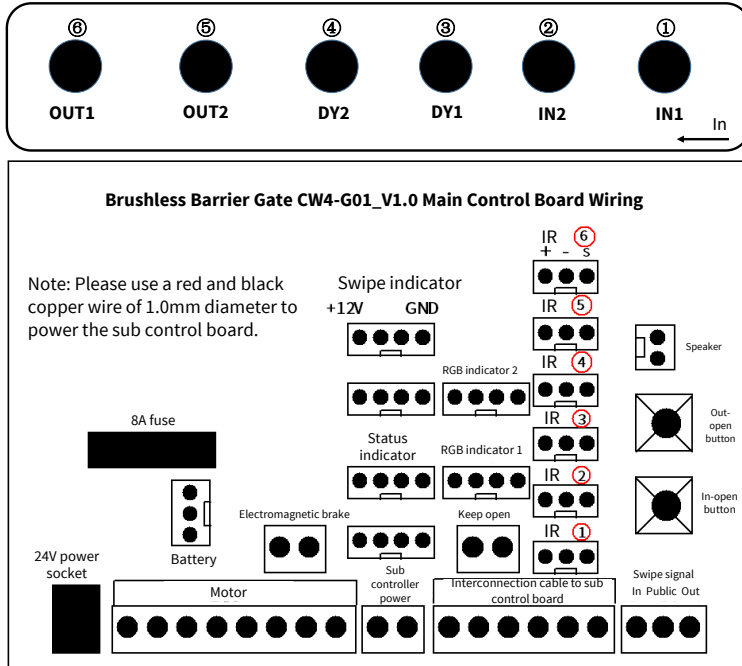
### 3) Wiring of 6-pair IR Sensors in the Upper Row



## 4) IR Sensor Wiring

- Main control board IR receiver wiring

Connect the IR receivers of the gate to the corresponding IR interfaces of the main control board.



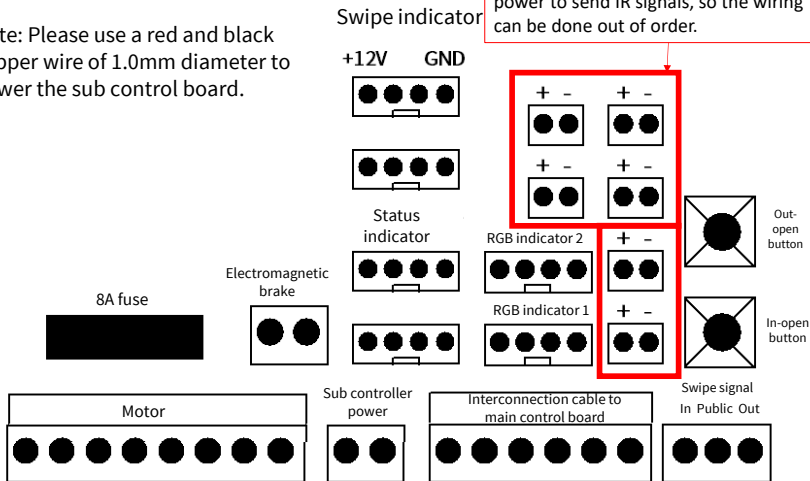
- Sub control board IR sender wiring

Connect the IR senders of the gate to the IR interfaces of the sub control board. The sub control board only requires power to send IR signals, so the wiring can be done out of order.

## Brushless Barrier Gate TDZ\_CW4-G02\_V1.0 Sub Control Board Wiring

Note: Please use a red and black copper wire of 1.0mm diameter to power the sub control board.

The sub control board only requires power to send IR signals, so the wiring can be done out of order.



## 4 Wiring

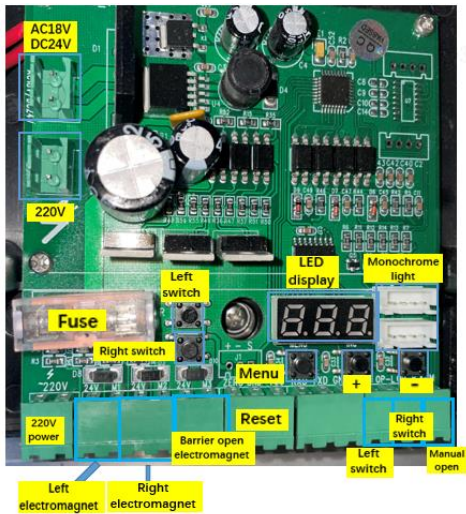
### 1) System Wiring

Connect the AC220V mains supply to the air circuit breakers in the right and middle pedestals. Connect the L (live wire) and N (neutral wire) wires to the air circuit breaker and connect the PE wire (yellow and green wire) to a grounding terminal. Power cables are user-supplied.





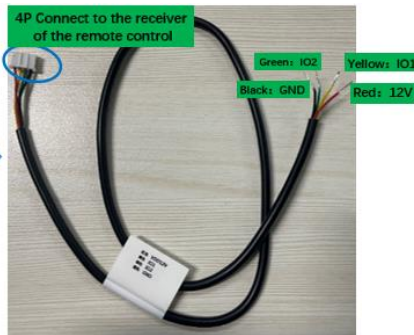
## 2) Control Board Wiring



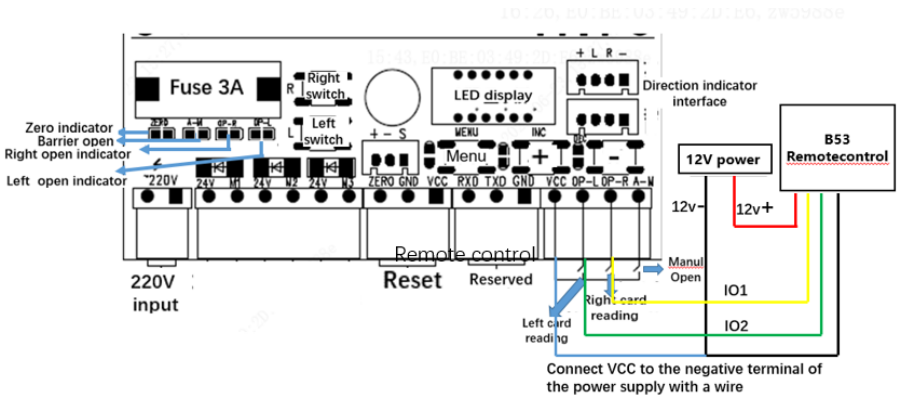
## 3) Remote Control Wiring

Take B53 remote control as an example:

1. Connect the 4P terminal to the receiver of the remote control and cut off the 5P terminal.

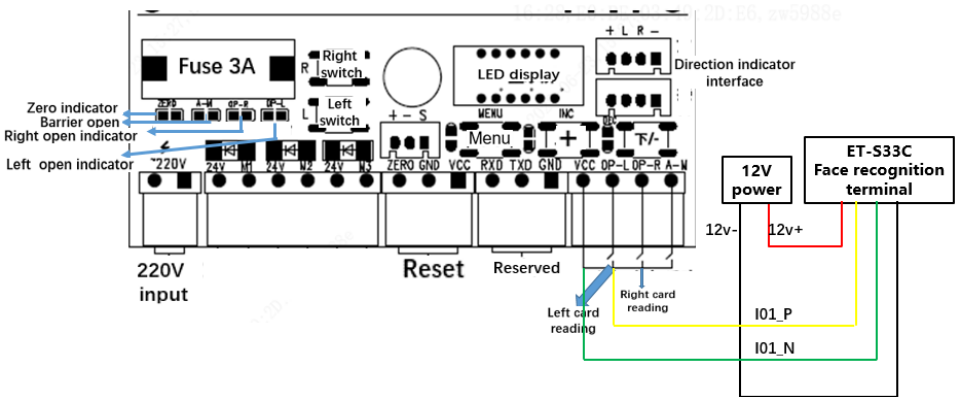


2. Wire as follows.



#### 4) Face Recognition Terminal Wiring

Take ET-S33C as an example:



### 5 Working Process

#### 1) Power-On-Self-Test

The gate performs a self-test after the main control board is powered on. The buzzer makes sound (500ms) when the board is powered on successfully.

- Auto IR sensor test

After power-on, the gate automatically detects IR sensors and displays the IR sensor ID on the digital tube.

- Auto limit position test

After the IR sensor detection is finished, the gate automatically runs opening/closing limit position detection.

#### 2) Barrier Type

Choose the appropriate barrier type through [P-27](#).

### 3) Motor Running Direction

If the opening/closing direction is incorrect, adjust it through [P-25](#).

### 4) Number of IR Sensors in the Upper Row

Configure the number of IR sensors in the upper row through [P-17](#).

### 5) Out-Open Limit Position

After the self-test, if the opening limit position of exit is deviated, adjust it through [P-35](#). Open the P-35 configuration page, press **Save** when the digital tube displays 00, adjust the barrier to the proper position manually, and then press **Save**.

### 6) Close Limit Position

After the self-test, if the closing limit position is deviated, adjust it through [P-36](#). Open the P-36 configuration page, press **Save** when the digital tube displays 00, adjust the barrier to the proper position manually, and then press **Save**.

### 7) In-Open Limit Position

After the self-test, if the opening limit position of entry is deviated, adjust it through [P-37](#). Open the P-37 configuration page, press **Save** when the digital tube displays 00, adjust the barrier to the proper position manually, and then press **Save**.

## 6 Electrical Parameters

Name	Parameter
Power supply	$\geq 24V/5A$
IR sensor interface	NPN normally open
Power output	$DC12V/\leq 1.0A$
Speaker power	$\leq 15W$
Operating temperature	$-35^{\circ}C$ to $75^{\circ}C$ (tested)

## 7 Power Supply Instructions

System power supply: DC24V/5A

Backup battery: DC12V/3A

Main control board fuse rated current: 8A

Sub control board fuse rated current: 2A

The backup power automatically starts to provide power for the gate to open when the main power fails, and stops after the gate is opened.

When the motor stops working during power-on, the device detects the backup battery level every 20 seconds and charges it if the battery level is too low.

Note: If the external devices require a lot of electricity, use external DC12V power supplies. The maximum output power of the device is DC12V/1A.

## 8 Safety Instructions

- Never knock the device with hard objects.
- Be careful to use the device and protect it against impacts.
- Keep the device away from liquid of any kind.
- If you find smoke or smell something unusual, disconnect power immediately.

## 9 Battery Use Caution

- When battery is used, avoid:
  - Extremely high or low temperature and air pressure during use, storage and transportation;
  - Battery replacement.
- Use the battery properly. Improper use of the battery such as the following may cause risks of fire, explosion or leakage of flammable liquid or gas.
  - Replace battery with an incorrect type;
  - Dispose of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery;
- Dispose of the used battery according to your local regulations or the battery manufacturer's instructions.

## 10 Avertissement de l'utilisation de la batterie

- Lorsque utiliser la batterie, évitez:
  - Température et pression d'air extrêmement élevées ou basses pendant l'utilisation, le stockage et le transport.
  - Remplacement de la batterie.
- Utilisez la batterie correctement. Mauvaise utilisation de la batterie comme celles mentionnées ici, peut entraîner des risques d'incendie, d'explosion ou de fuite liquide de gaz inflammables.
  - Remplacer la batterie par un type incorrect;
  - Disposer d'une batterie dans le feu ou un four chaud, écraser mécaniquement ou couper la batterie;
- Disposer la batterie utilisée conformément à vos règlements locaux ou aux instructions du fabricant de la batterie.
- Personal safety warnings:

- Chemical Burn Hazard. This product contains a coin cell battery. Do NOT ingest the battery. It can cause severe internal burns and lead to death.
- Keep new and used batteries away from children.
- If the battery compartment does not close securely, stop using the product and keep it away from children.
- If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
- Avertissements de sécurité personnelle:
  - Risque de brûlure chimique. Ce produit contient une batterie de cellules. N'ingérer pas la batterie. Si la batterie de cellule est avalée, elle peut causer de graves brûlures internes en seulement 2 heures et peut entraîner la mort.
  - Gardez les batteries nouvelles ou utilisées à l'écart des enfants.
  - Si le compartiment de la batterie ne se ferme pas en toute sécurité, cessez d'utiliser le produit et gardez-le à l'écart des enfants.
  - Si vous pensez que des piles ont pu être avalées ou placées à l'intérieur d'une partie du corps, consultez immédiatement un médecin.

## **11 EU Authorised Representative**

UNV Technology EUROPE B.V. Room 2945,3rd Floor,Randstad 21-05 G,1314 BD,Almere,Netherlands.

## **12 Regulatory Compliance**

### **FCC Statements**

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.

Visit

[http://en.uniview.com/Support/Download\\_Center/Product\\_Installation/Declaration](http://en.uniview.com/Support/Download_Center/Product_Installation/Declaration)  
/ for SDoC.

**Caution:** The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** 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.

### LVD/EMC Directive



This product complies with the European Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU.

### WEEE Directive–2012/19/EU



The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.

### Battery Directive-2013/56/EU



Battery in the product complies with the European Battery Directive 2013/56/EU. For proper recycling, return the battery to your supplier or to a designated collection point.