User Manual

BG300 Barrier Gate

Date: September 2021

Doc Version: 1.0

English

Thank you for choosing our product. Please read the instructions carefully before operation. Follow these instructions to ensure that the product is functioning properly. The images shown in this manual are for illustrative

For further details, please visit our Company's website www.zkteco.in.

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The product will be updated from time to time without prior notice. The latest operation procedures and relevant documents are available on http://www.zkteco.in.

If there is any issue related to the product, please contact us.

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About the Company

ZKTeco is one of the world's largest manufacturers of RFID and Biometric (Fingerprint, Facial, Finger-vein) readers. Product offerings include Access Control readers and panels, Near & Far-range Facial Recognition Cameras, Elevator/floor access controllers, Turnstiles, License Plate Recognition (LPR) gate controllers and Consumer products including battery-operated fingerprint and face-reader Door Locks. Our security solutions are multi-lingual and localized in over 18 different languages. At the ZKTeco state-of-the-art 700,000 square foot ISO9001-certified manufacturing facility, we control manufacturing, product design, component assembly, and logistics/shipping, all under one roof.

The founders of ZKTeco have been determined for independent research and development of biometric verification procedures and the productization of biometric verification SDK, which was initially widely applied in PC security and identity authentication fields. With the continuous enhancement of the development and plenty of market applications, the team has gradually constructed an identity authentication ecosystem and smart security ecosystem, which are based on biometric verification techniques. With years of experience in the industrialization of biometric verifications, ZKTeco was officially established in 2007 and now has been one of the globally leading enterprises in the biometric verification industry owning various patents and being selected as the National High-tech Enterprise for 6 consecutive years. Its products are protected by intellectual property rights.

About the Manual

This manual introduces the operations of **BG300 Barrier Gate**.

All figures displayed are for illustration purposes only. Figures in this manual may not be exactly consistent with the actual products.

Document Conventions

Conventions used in this manual are listed below:

GUI Conventions

For Device	
Convention	**Description**
< >	Button or key names for devices. For example, press <OK>.
[ ]	Window names, menu items, data table, and field names are inside square brackets. For example, pop up the [New User] window.
/	Multi-level menus are separated by forwarding slashes. For example, [File/Create/Folder].

Symbols

Convention	Description
	This implies about the notice or pays attention to, in the manual.
	The general information which helps in performing the operations faster.
	The information which is significant.
	Care taken to avoid danger or mistakes.
	The statement or event that warns of something or that serves as a cautionary example.

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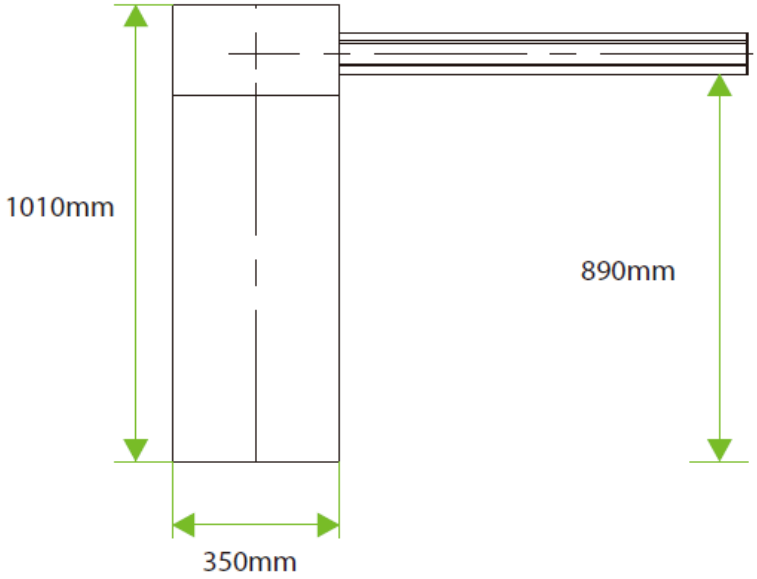
1 Overview

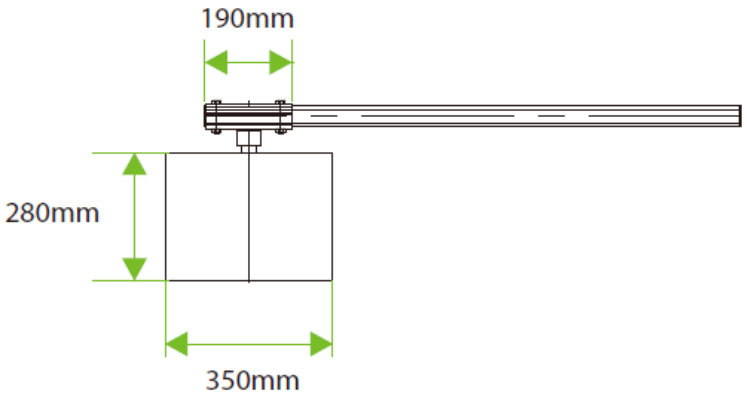
The BG300 barrier is designed with a yellow chassis, substantial & spectacular shape. It is a cost-effective car barrier equipped with high-performance DC brushless motor. The barrier is equipped with embedded core control system, with fast response speed and rich function expansion. The device is capable to deliver stable and reliable operation for a long time.

2 Features and Functionalities

1. The fastest operating speed is 1.5s, the speed can be adjusted according to different boom arm length.
2. Digital control monitoring, support delay automatic close functions.
3. High safety, support power off manually rise boom arm, anti - smash functions.
4. The position of the angle of rise / fall can be adjusted, and the digital encoder is adopted to limit the position automatically, replacing the traditional limit structure, and the position control is accurate.
5. The barrier boom will rebound when it is blocked.
6. Invertibility left and right direction, simple and compact transmission mechanism, easy to install on site.

3 Appearance and Dimensions





4 Specifications

Model	BG300
Operating Speed	1.5-6s
Boom Length	Max 6m
Boom Type	Telescopic straight boom
Chassis Dimensions	1010*350*280mm
Weight	43KG
Motor Type	24V DC brushless motor
Output Power	160W
Output Current	10A
Working Voltage	DC 24V
Power Supply	AC 220V/110V 50-60Hz
Operating Temperature	-30°C to 75°C
MCBF	2 million times
Remote Control Distance	≥30m

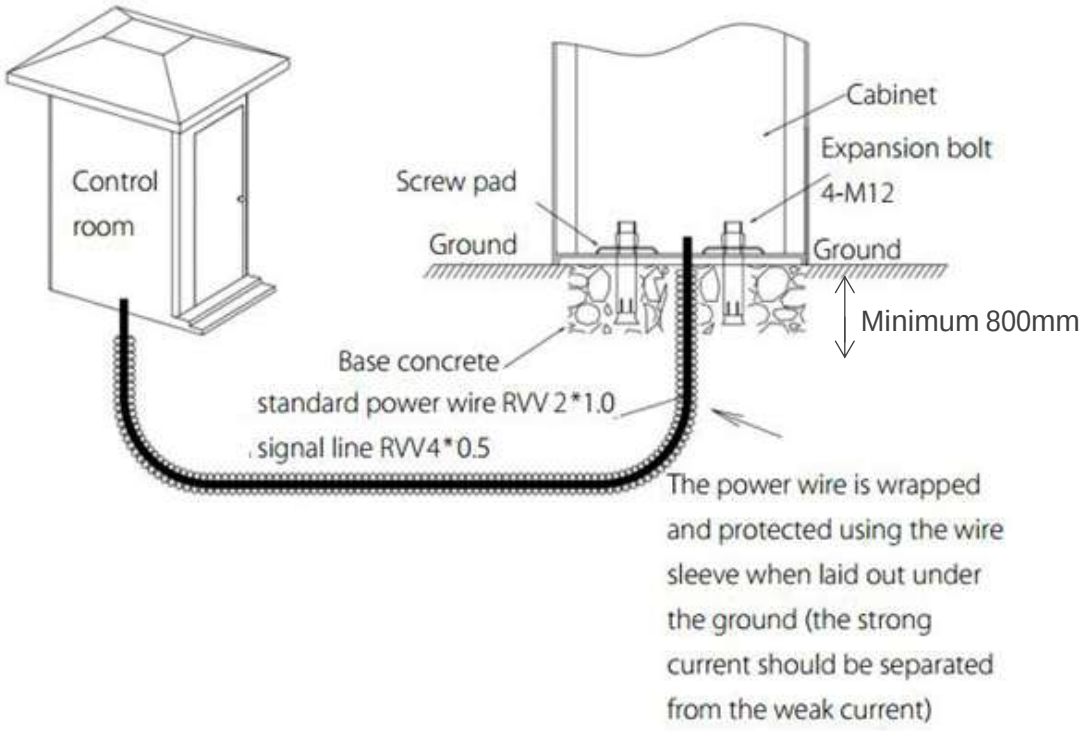
5 Installation Procedure

5.1 Installation Precautions

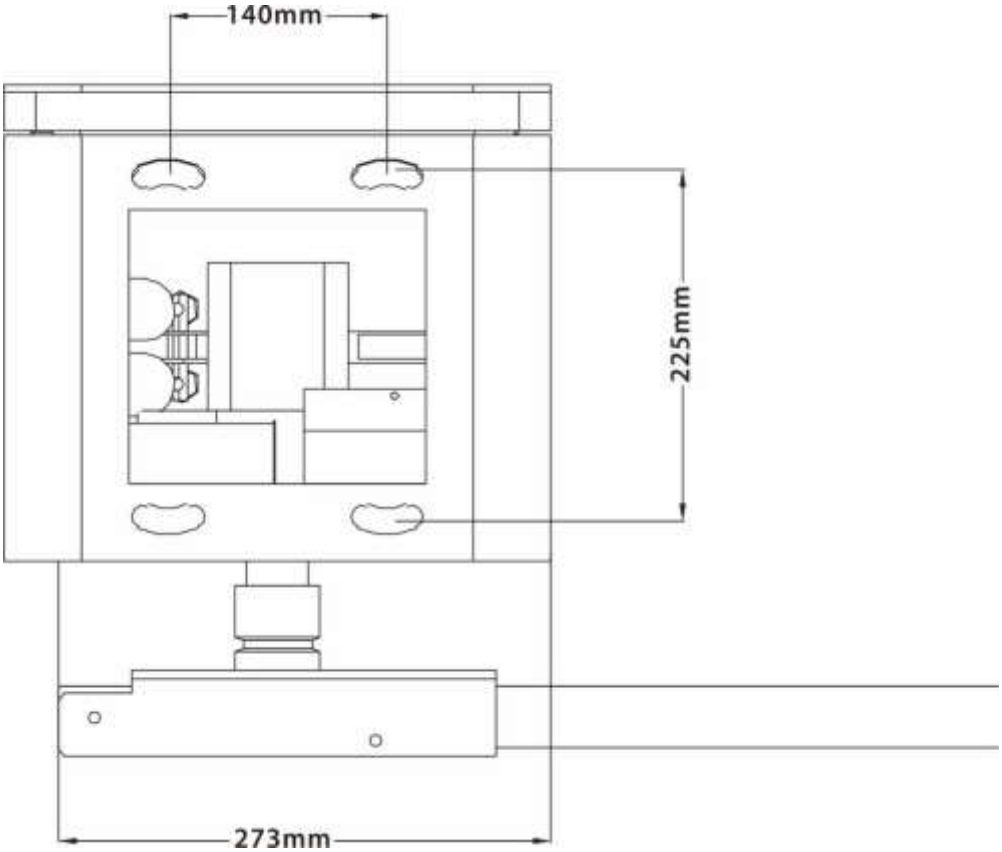
1. Install the parking barrier on a flat surface. A cement foundation is required before installation if the ground is not solid and flat.
2. It is possible to reduce the length of the boom, but it cannot be increased. After the boom has been cut, it is important to set the spring balance again to achieve a new balance. The bottom of the spring contains two plastic nuts designed to adjust the new balance.
3. When the barrier is powered on, do not change the wire connection inside.
4. Connect the GND to the cabinet to ensure protection.

5.2 Cable Embedding

1. A φ25 protective sleeve and a cable are required.
2. The route cables must pass through the protective sleeves.
3. Use a tool to open the cable tray on the ground.



Dimensions



5.3 Boom Installation

5.3.1 Boom Installation Procedure

1. Pull the secondary boom out from the upper boom, and then fasten with 2 screws, as shown in Figure 1.
2. The procedure of installing the boom to the chassis is shown in Figure 2.

Figure 1 Connect the main boom with the Secondary arm together by 2 screws

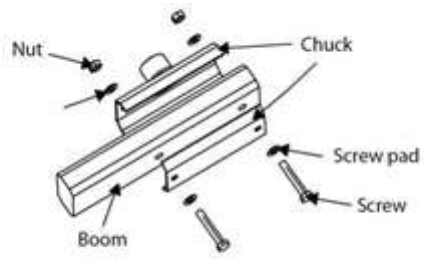
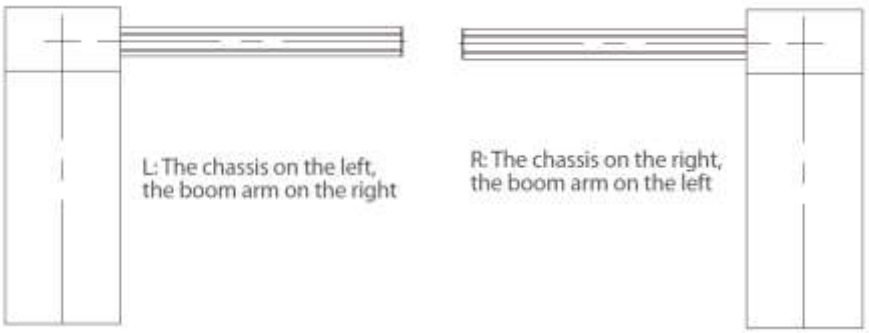


Figure 2 Install the Boom to the Chassis

Note:

1. Before the barrier is powered on to run the test process, be sure to install the barrier boom of the corresponding length for the test. If the barrier boom is not installed, please adjust, and remove the spring under the guidance of a professional.
2. If the length of the barrier boom is cut and adjusted, the tightness of the spring and the position of the hanging hole need to be adjusted accordingly to avoid the abnormal working status that cannot drop the boom.

6 Left and Right Directions



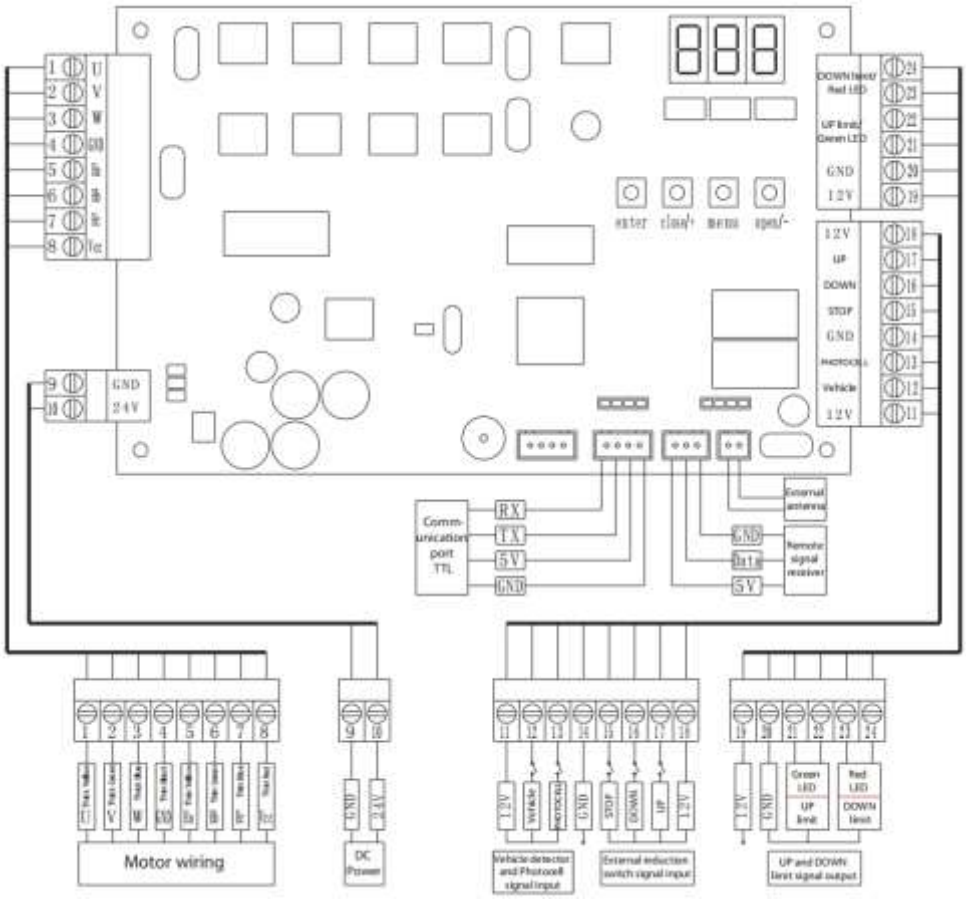
7 Mainboard Wiring Instructions

1. Please disconnect the power supply before wiring.
2. To switch the input voltage to 110V, please note that you need to set the DIP switch as shown in the below image:

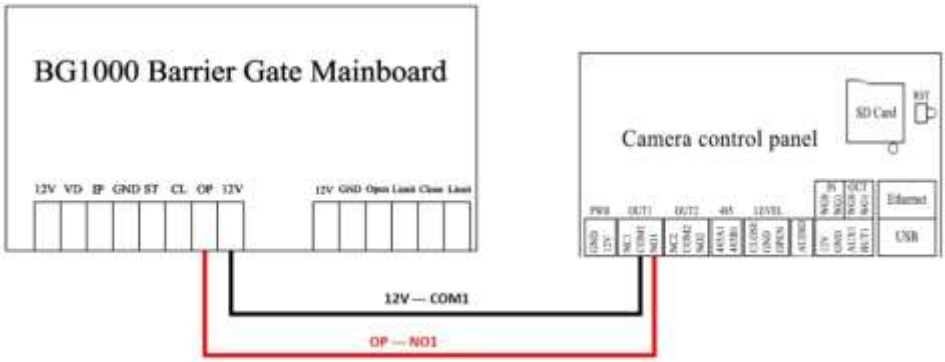
3. Check carefully whether the terminals are tightened and whether the wiring is firm.

   The wiring diagram of the control panel is given below:

BG300 Wiring Diagram of Mainboard

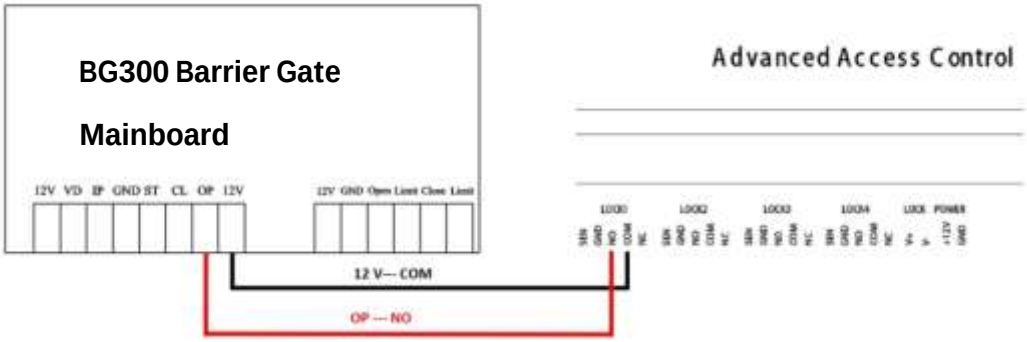


7.1 Connection with LPR Camera



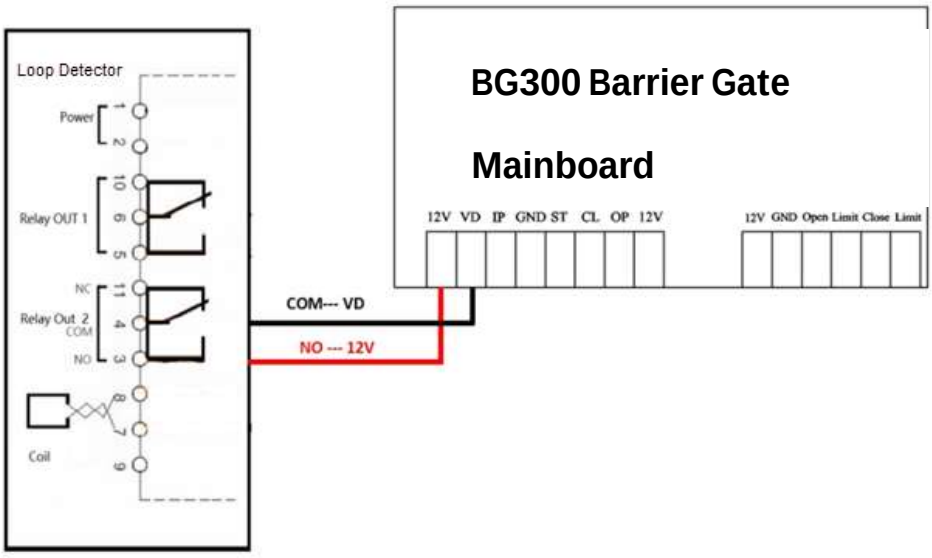
7.2 Connection with UHF Controller

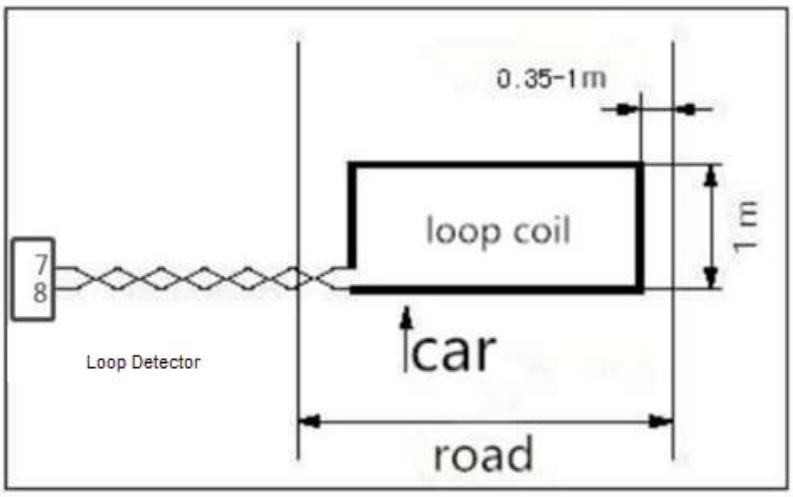
(**Note:** The Reader1 and 2 of Inbio260 Controller corresponds to LOCK1, Reader 3 and 4 corresponds to LOCK2)



7.3 Connection with Loop Detector

Anti-smash and Auto-close function

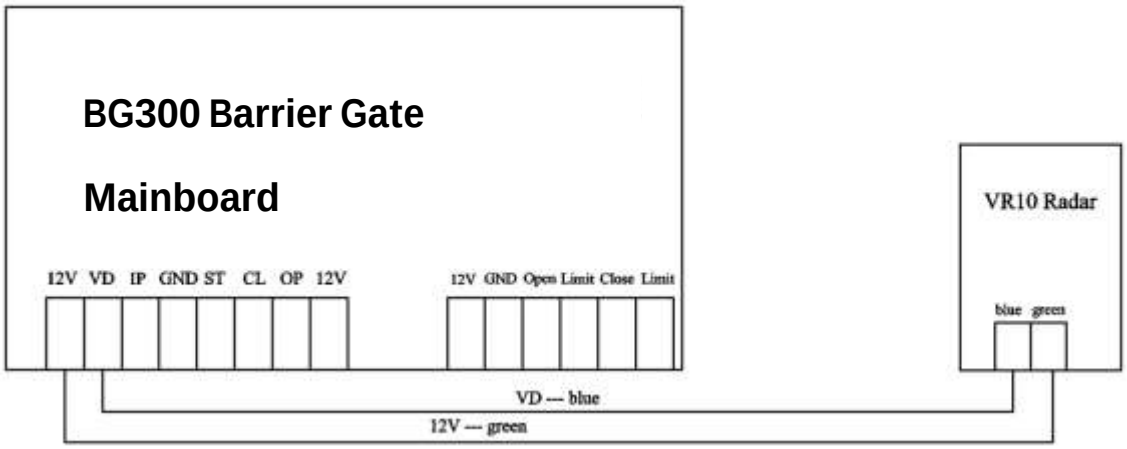


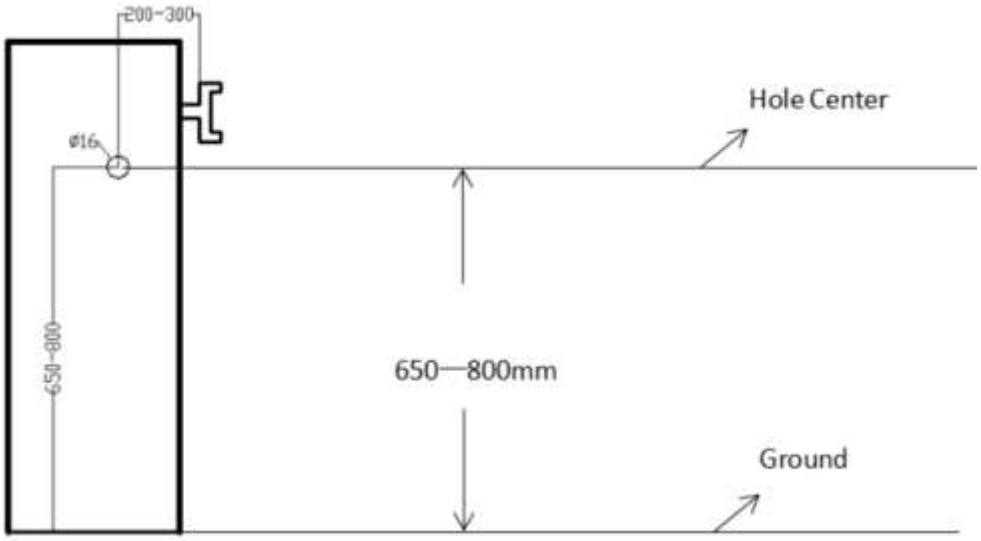


Coil Circumference	Coil Number
3m	Based on requirements, ensure that the inductance is between 100μH and 200μH
3m to 6m	5 to 6 turns
6m to 10m	4 to 5 turns
10m to 25m	3 turns
25m	2 turns

7.4 Connection with VR10 Radar Sensor

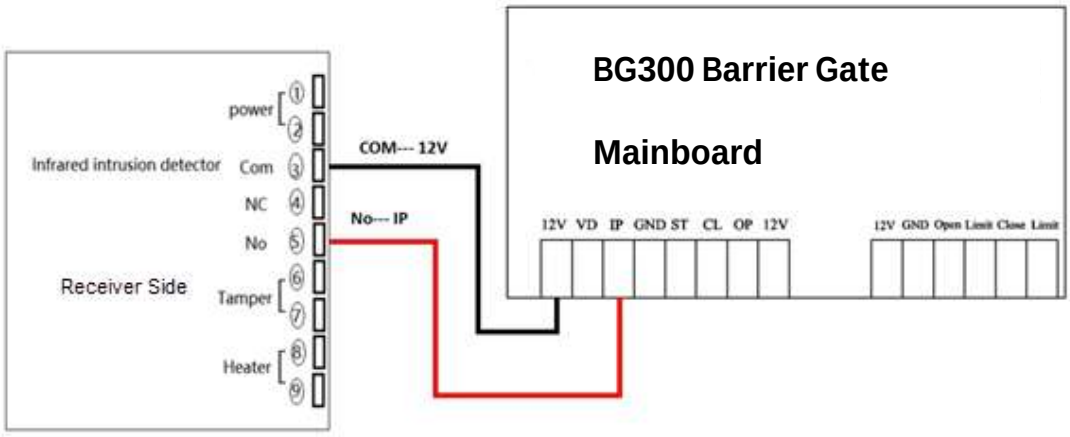
Anti-smash and Auto-close function



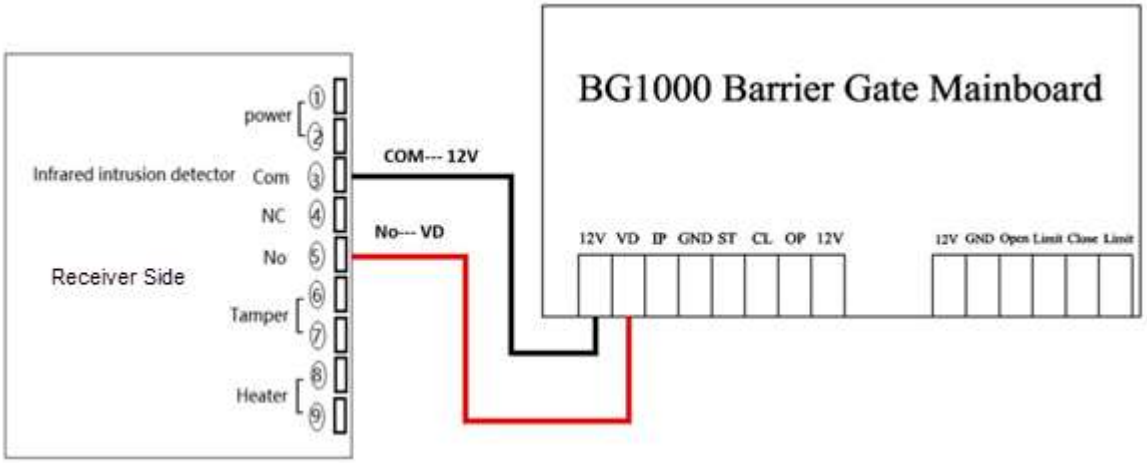


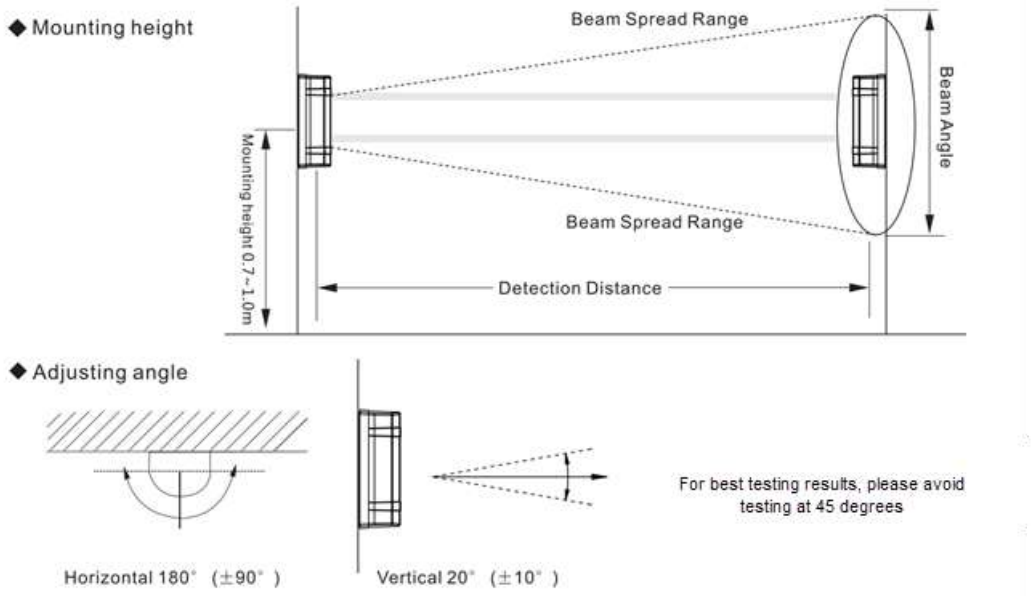
7.5 Connection with Infrared/Photocell Detector

Anti-smash function



Anti-smash and Auto-close function



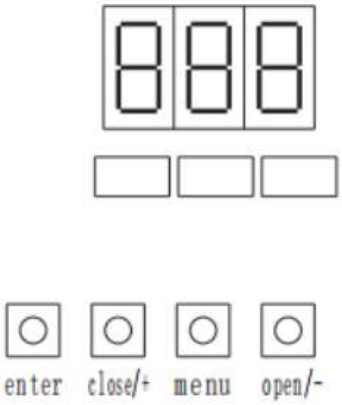


8 Functional Parameter Settings

After the initial installation, power-on the device. Use the "ON" and "OFF" buttons on the mainboard to complete the self-check process and learn the opening and closing strokes.

8.1 Mainboard Parameter Settings

Key Description



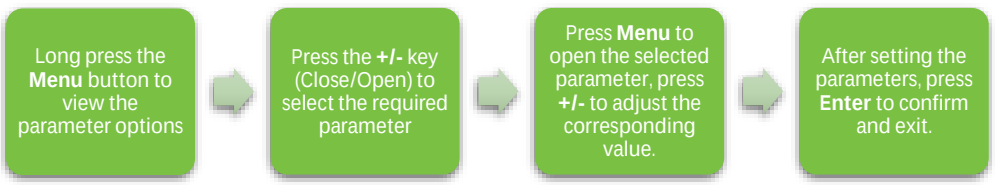
Menu: Menu options / Confirm and Enter

Enter: Confirm and Exit

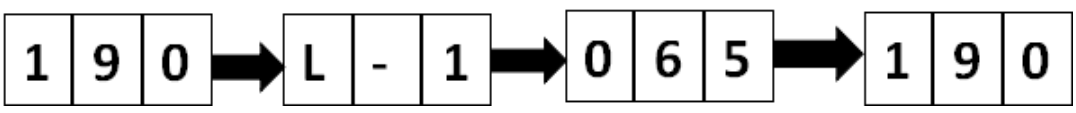
Open/-: Decrease parameter/value

Close/+: Increase parameter/value

8.1.1 Operating Procedure



The display status is given below:



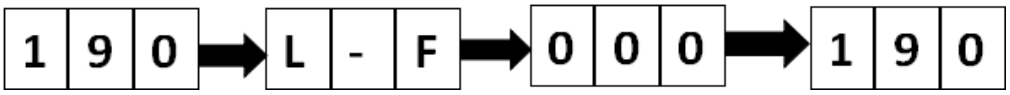
8.2 Parameter Settings Description

Parameter	Description	Menu List	3m Boom	4.5m Boom	6m Boom
Gate Opening Speed Adjustment	The larger the value, the faster the opening speed	L-1	90	70	60
Gate Closing Speed Adjustment	The larger the value, the faster the gate closing speed	L-2	85	65	55
Barrier Boom balance Adjustment	Default	L-3	12	12	12
Anti-smashing Car Response Time Sensitivity Adjustment	The shorter the reaction time, the higher the sensitivity.	L-4	30	30	30
Motor Strength Adjustment	Default	L-5	70	70	70
Horizontal Boom Barrier Adjustment	-	L-6	5	5	8
Test Mode Selection	0 – Manual 1 - Automatic (default)	L-7	0	0	0
Turn on Memory function	0 – No Memory 1 - Memory 4 - Peak mode(default)	L-8	0	0	0
Vertical Boom Barrier Adjustment	-	L-9	5	5	8
Deceleration stroke adjustment of the first stage of opening brake	-	L-L	45	65	40
Deceleration stroke adjustment of the second stage of closing brake	-	L-B	55	55	40
Anti-Smashing Vehicle Strength	The larger the value, the more	L-C	50	50	50

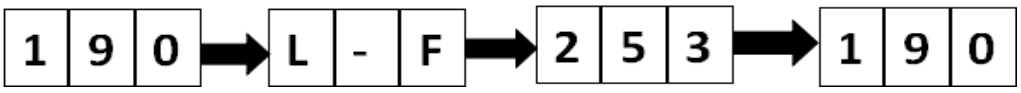
Adjustment	severe the damage to the object.				
Forward and Reverse operation setting of the barrier	Type 1 - L Type 2 – R (Factory setting)	L-D	1 or 2	1 or 2	1 or 2
Motor force when the barrier is activated	Torque output by the motor when the barrier is activated.	L-E	30	30	30
Remote learning function	000 - Learning State 253 - Automatic deletion of the remote control	L-F	0	0	0
Deceleration stroke adjustment for the first section of the opening gate	Default	L-H	0	0	0
Deceleration stroke adjustment of the second section of the closing gat	Default	L-P	21	21	21
Traffic Light Mode Adjustment	Default	L18	0	0	0
Ground Sensing Delay to drop the boom	0 - Disabled 1 - 255 is the time corresponding to the delay (Need to synchronize with the ground sensing system)	L19	0	0	0
Automatic boom-dropping delay after starting	0 – Disabled 1 - 255 is the time corresponding to the delay in automatic boom-dropping	L20	0	0	0

8.3 Remote Control Pairing and Unpairing

1. **Remote Control Pairing:** Long press **Menu**, then press +/- to select L-F [L15]. Press **Menu** again to set the parameter value. At this time, the LED display value is "000", and then press any button on the remote control until you hear a beep sound from the Mainboard. If it automatically returns to the menu option, it means the pairing is successful, and then press **Enter** to exit the menu.

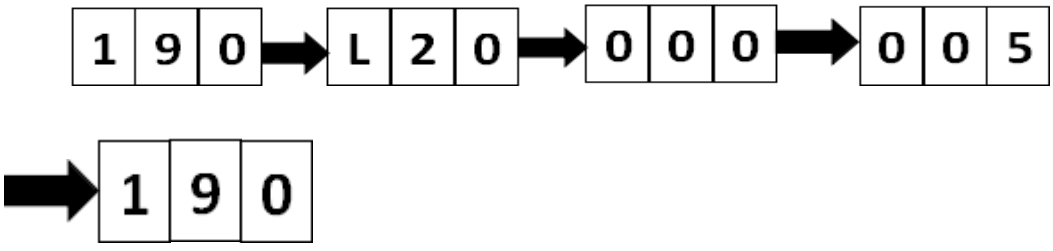


2. **Delete Remote Control Pairing:** Long press **Menu**, then press +/- to select L-F [L15]. Press **Menu** again to set the parameter value, and then set the parameter value to "253". At this time, it will automatically return to the menu, indicating that all the remote controls have been deleted.



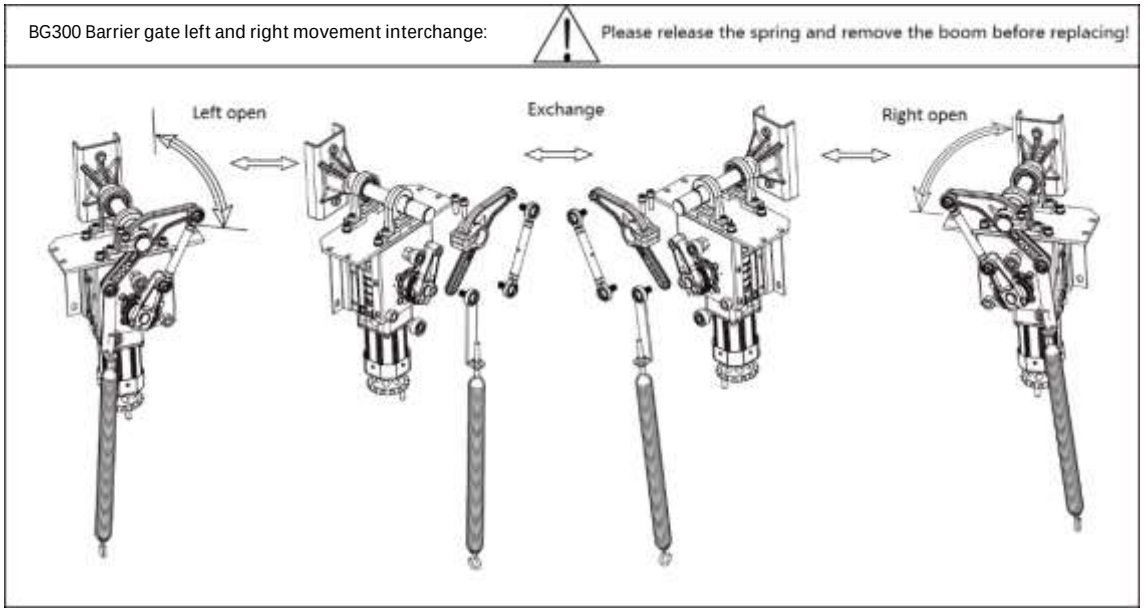
8.4 Set Delay for Automatic Closing after Opening the Boom

Long press the **Menu** button, then press +/- to select the L20 parameter, and then press the **Menu** to set the parameter value after selection. At this time, 000 will be displayed on the screen which means that the device is in the disabled state. Set the delay value as per the requirements. Finally, press **Enter** to exit the menu. For example, if it is set to "005", the machine will automatically close after 5 seconds after opening the barrier.



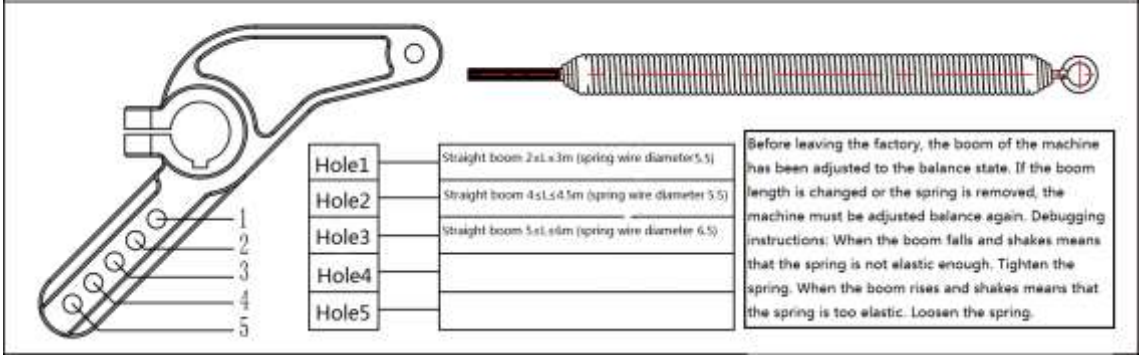
9 Commissioning Instructions

1. Check all the connections and make sure the connections are correct before connecting to the power supply.
2. Please use the remote control or press the switch button on the mainboard to test whether the machine is running normally. (**Warning:** Be sure to install the corresponding length of the boom before the power-on test. To avoid accidents, no one is allowed to stand under the boom during debugging.)
3. In the process of boom falling, short connect the infrared detector and public interface, the falling boom is transferred to rising immediately, which will stop automatically after the rising limit.
4. In the process of boom falling, short connect the loop detector and public interface, the falling boom is transferred to rising immediately, which will fall automatically after the rising limit and stop automatically after the falling limit. In the process of boom rising, short connect the loop detector and public interface, the boom will fall automatically after the rising limit and stop automatically after the falling limit. In the open state, short connect the loop detector and public interface, the boom will automatically fall to the limit and stop.
5. Left and right movement interchange method:



6. Barrier gate spring and the boom length type matching:

BG300 Barrier gate spring hole selection:



10 Product Packing List

Material	Quantity
Chassis Explosion Screw M12X140	4
Keys	2
Barrier Boom	1
Boom Pressure Plate	1
Chassis Pressure Plate	2
Wireless Remote	2
Barrier Boom Hexagon Bolt M10X70	2
Machine	1
User manual	1

11 Troubleshooting

1. **Problem: The power supply has a 24V output, but the mainboard power indicator does not light up.**

   Cause:

   1. 24V output wiring might be reversed.
   2. The mainboard might work abnormally.
   3. Loose wiring.

   Solution:

   1. Swap the DC output wiring.
   2. Replace the mainboard.
   3. Tighten the wiring.

2. **Problem: The AC input is normal, but the power indicator is off.**

   Cause:

   1. The power fuse might be blown.
   2. Abnormal power supply.
   3. Loose wiring.

   Solution:

   1. Replace the fuse.
   2. Replace the power supply.
   3. Tighten the wiring.

3. **Problem: The power indicator is on, the landing boom indicator is normal, and the motor is not running.**

   Cause:

   1. The motor wiring might be wrongly connected, or the wiring is loose.
   2. The internal encoder of the motor may work abnormally.
   3. The motor stroke limit exceeds the position.

Solution:

1. Check the wiring according to the wiring diagram and tighten the wiring if required.
2. Replace the motor.
3. Re-adjust the motor limit parameters.

4. **Problem:** **The remote-control buttons do not respond.**

Cause:

1. The remote-control battery is completely discharged.
2. There must be a signal interference with the same frequency.
3. There may be obstacles nearby.
4. The remote-control frequency is not matched, or the receiver is damaged.

Solution:

1. Replace the battery.
2. Use manual button control.
3. Use in open areas.
4. Replace the remote control to re-match or replace the receiver.

5. **Problem:** **When the gate is closed halfway, it bounces back to the open state.**

Cause:

1. The barrier boom might not be installed.
2. The spring is too tight, or the length of the barrier boom is changed, and the spring is not properly adjusted.

Solution:

1. Install the barrier boom.
2. Adjust the spring according to the length of the barrier boom.

12 Safety Precautions

- It is strictly forbidden to hit the product with hard objects.
- When using, please handle with care to avoid strong collision with hard objects.
- Do not spill water or corrosive liquids on the surface of the product.
- If smoke or a strange smell comes from the product, disconnect the power immediately.
- If the product works abnormally, please contact the dealer in time. Please do not try to repair it by yourself. If you handle it without authorization, the company is not responsible for any damage.

13 Transportation and Storage

- While loading and unloading the product, please handle with care.
- During transportation and storage, place the product in a dry and corrosive-free environment. The product should be protected from moisture, rain, sun, and corrosion.

14 Warranty

This product promises a warranty period of 1 year. Upon normal use of the product, damages are covered by the warranty. However, damages caused by the following conditions are not covered by the warranty.

- Damages caused by incorrect operation and violation of operating procedures.
- Damages caused by repairing the product without authorization.
- Abnormalities and damages caused by extremely harsh operating conditions and operating environment beyond the machine's ability to withstand.
- Damages caused by irresistible factors (such as earthquake, tsunami, typhoon).

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