User Manual

Swing Barrier-SBTL6000 Series

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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 purposes only.

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

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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 manufacturer 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 **SBTL6000 Series** product.

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 Software	
Convention	**Description**
Bold font	Used to identify software interface names e.g. **OK**, **Confirm**, **Cancel**
>	Multi-level menus are separated by these brackets. For example, File > Create > Folder.
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.

Table of Contents

1   <u>Product Introduction</u>

1.1   Model Number and Access Control

Access Model	None	C3-200 and Two KR800E reader	InBio 260 and Two FR1500 reader	Two visible light products
SBTL6000	√			
SBTL6011		√		
SBTL6022			√	
SBTL6033				√
SBTL6200	√			
SBTL6211		√		
SBTL6222			√	
SBTL6233				√

1.2   Chassis Design and Dimensions

SBTL6000 series comes with SUS304 housing which provides simple and beautiful design with corrosion protection. It provides legal access to the persons and restricts illegal personnel access. In case of emergency, it ensures that evacuation passage runs smoothly and is convenient for personnel.

SBTL6000's appearance and dimensions are shown in Figure 1-1:
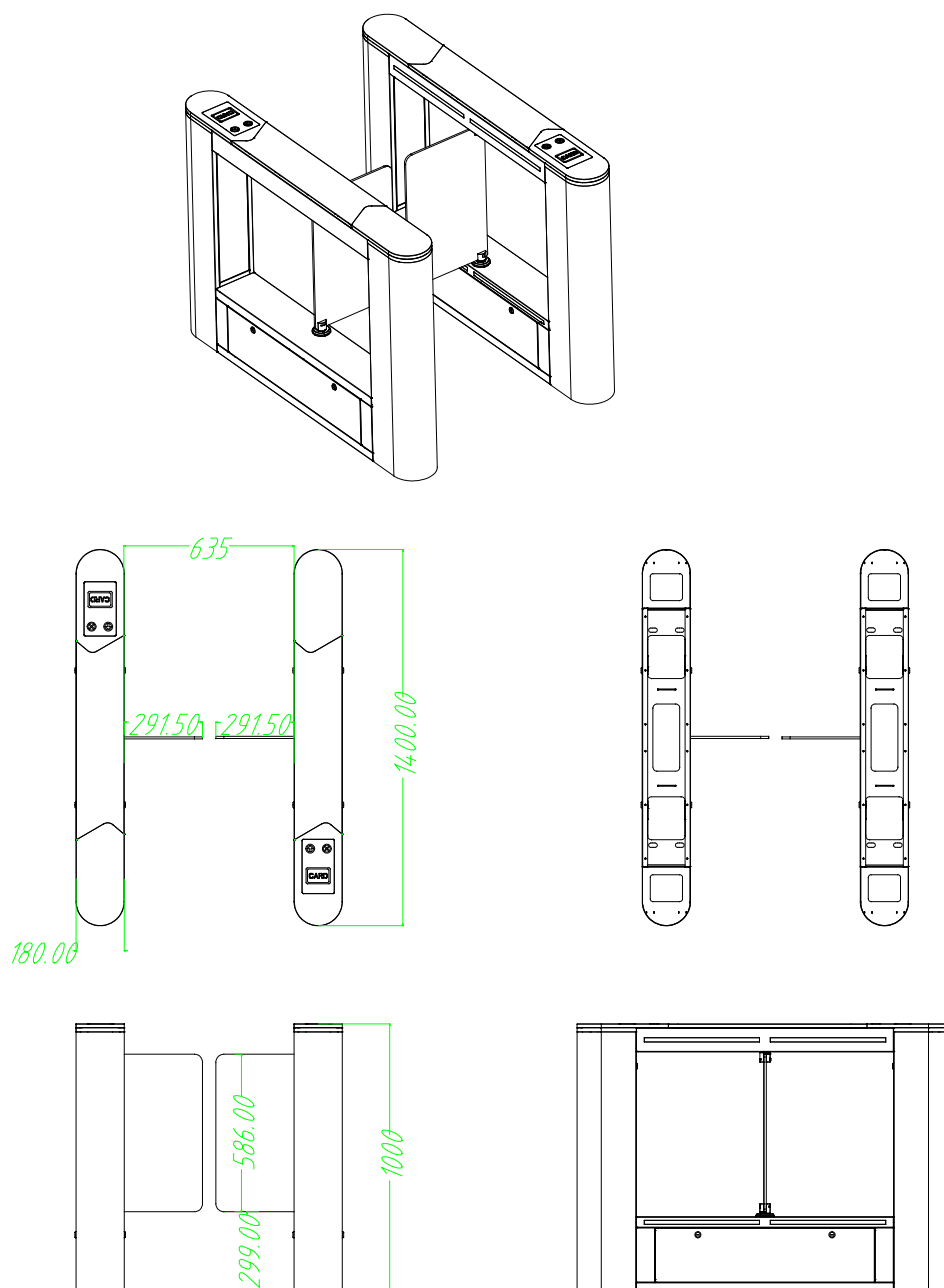
Figure 1-1

1.3　Mechanical System of the Swing Barrier

The mechanical system of a swing barrier turnstile includes the chassis and the core component. The chassis is a carrier where the direction indicator, the reader, the Infrared sensor, and the door lock are installed. The core component mainly consists of the motor, the frame, the belt, and the swing arm.

1.4　Electronic control system

The electronic control system of a swing barrier turnstile is mainly composed of the reader, the master control panel, the infrared sensor, the direction indicator and the alarm.

Reader: The reader reads the data in the card and sends it to the controller.

Master control panel: The master control panel is the system's control center that receives signals from the reader and the photoelectric switch, performs logical judgment and processing of these signals, and sends executive commands to the direction indicator, the electric motor and the alarm.

Infrared sensor: It detects the position of a pedestrian and plays the role of safety protection.

Direction indicator: This indicator displays the pedestrian passage path, and directs them to pass through the lane in a safe and orderly manner.

Alarm: The alarm gives an alarm voice if the system detects any unauthorized entry to the lane.

1.5 Working Principle of Swing Barrier

◆ After supplying power to the device, the system performs self-check. The device starts normally if no failure is detected. If a failure is detected, the system displays related messages on the LCD display screen so that the user can have a quick knowledge of and solve the problem.

◆ When the reader detects a valid card, the buzzer will give a positive audible prompt to the pedestrian, indicating that the card is being read successfully. And then, the reader sends signals to the access controller to request permission to pass through the lane. The access controller will send the signal to the master control panel.

◆ After receiving the signal from the access controller, the master control panel sends valid control signals to the direction indicator and the electric motor. At last the direction arrow turns green.

◆ Pedestrians passes through the lane according to the direction indicator signs. Infrared sensors keep on detecting the pedestrian during the whole process, and continue to send signal to the master control board until the pedestrian passes completely through the lane.

◆ If the pedestrian enters the passage but forgets to flash the card, or if the card held by the pedestrian is invalid, the system will prompt an audible alarm to stop and retreat the pedestrian from the lane. The pedestrian can pass through the lane only after a valid card is read by the card reader.

1.6 System Composition of the Product

The single-lane management system is composed of two single-core swing barriers. The multi-lane management system is composed of two single-core barriers and multiple dual-core barriers.

Working modes of the system

To make the product more versatile, this system provides multiple working modes for the user, including normal working mode, normally open and normally close mode, testing mode.

After supplying power to the device, the LCD screen on control board will display a default state, which displays current work mode.

1.7 Specification

Dimension(mm)	SBTL6000 Series: L = 1400, W = 180, H =1000		
Communication	RS485	Input voltage	AC110~240V, 50-60Hz
Input control signal	Switching signal	Output voltage	DC 24V
Time of opening/closing	0.8 Sec (adjustable)	Relative humidity	20% - 95% (Non-condensing)
Temperature	-28℃ to 60℃	Passage rate	Maximum 30/minute
Infrared sensor	6	Working environment	Indoor

2 Installation of the Product

2.1 Installation Notes

1) It is recommended that the swing barrier must be installed on a horizontal solid platform with a height of 50mm to 100mm.

2) It is also recommended that the swing barrier turnstile should not be used in corrosive environment.

3) Make sure the protective ground wire of the system is reliably connected to avoid personal injuries or other accidents.

4) After installation, check if the connection is done correctly at the connecting points of the protective ground wire, at the connector assemblies and wiring points of the circuits, as well as at each movable

part of the swing barrier turnstile. Any loose nuts, screws and other fasteners should be tightened in time to avoid swing barrier turnstile failures caused by longer operations.

2.2 Installation Position of the Swing Barrier

A distance of 100mm between the swing barrier turnstile and the wall needs to be reserved for ease of opening the top cover of the machine to perform maintenance and adjustment. The reference figure is shown below:
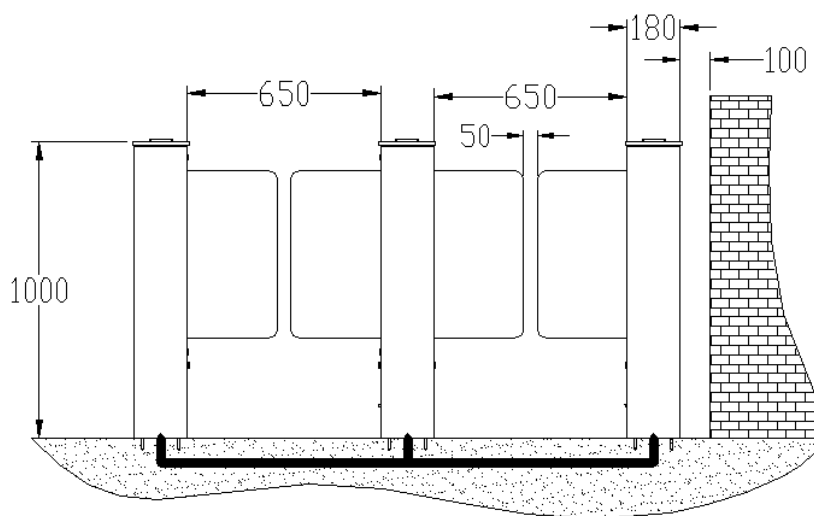
Figure 2-1 SBTL6000 series dual-lane

2.3 Cables Installation and Fixing

For the outlets of the concealed cables, please refer to the drawing indicating the mounting holes. The input voltage for this swing barrier turnstile is **AC100-120V/200-240V** and its master and slave are connected by a **5-core cable (signal)** and a 2-**core cable (power).** When installing the swing barrier turnstile, the user only needs to connect it to the corresponding ports. Note that the PVC conduits are laid **100mm** under the ground, with the height of the exposed part not exceeding **100mm.** In addition, the conduit outlet is bent back to prevent ingress of water into the conduit.

SBTL 6000 series installation holes and cabling positions is shown in Figure 2-2:
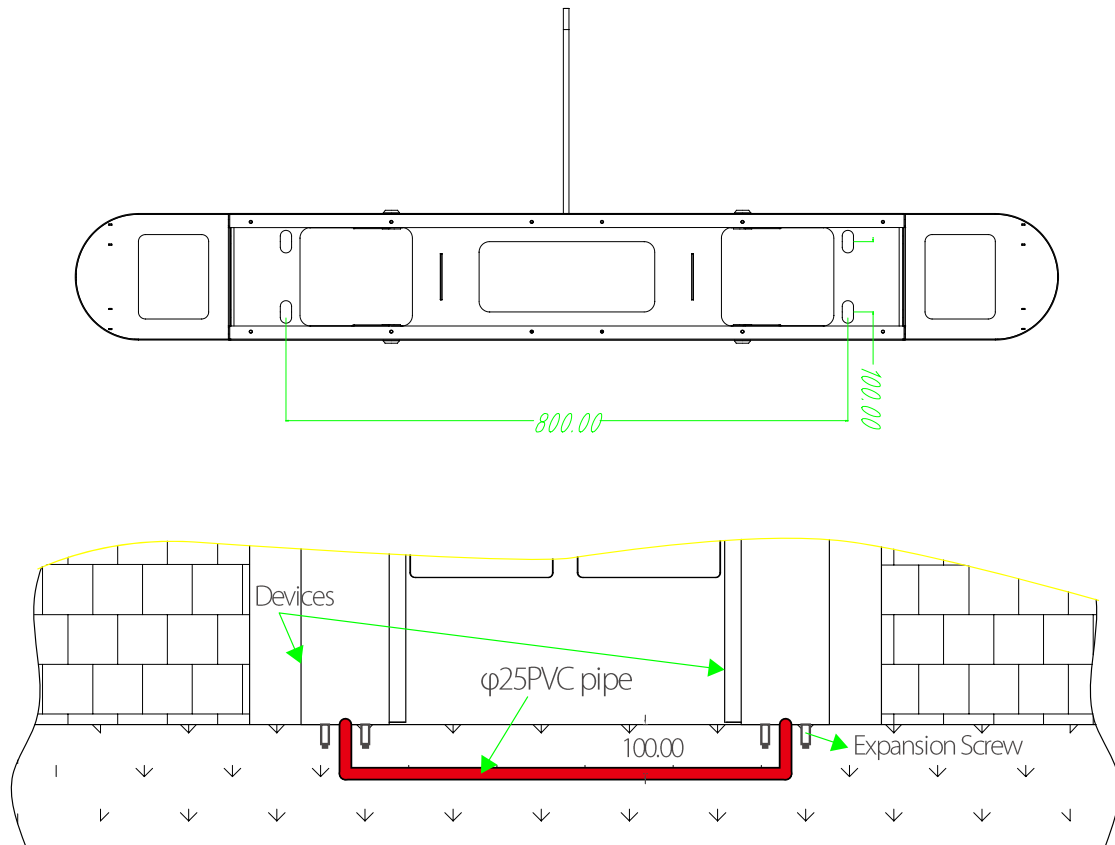
Figure 2-2

Mark the screw hole at the centre of the stand, and the edge of the chassis base on the ground according to the sizes as shown on the Figure 2-2. Use a hammer drill to make M12 screw holes and then install the screws. Place the swing barrier turnstile according to the sizes and positions as shown in the figure before installation and fixing. Connect the online cables and perform the power-on test. If the test is OK, tighten the screws. It is recommended that a warning line be marked on the ground after installing the device, so as to prompt the pedestrian to stand behind the warning line when swiping the card. As shown in Figure 2-3:
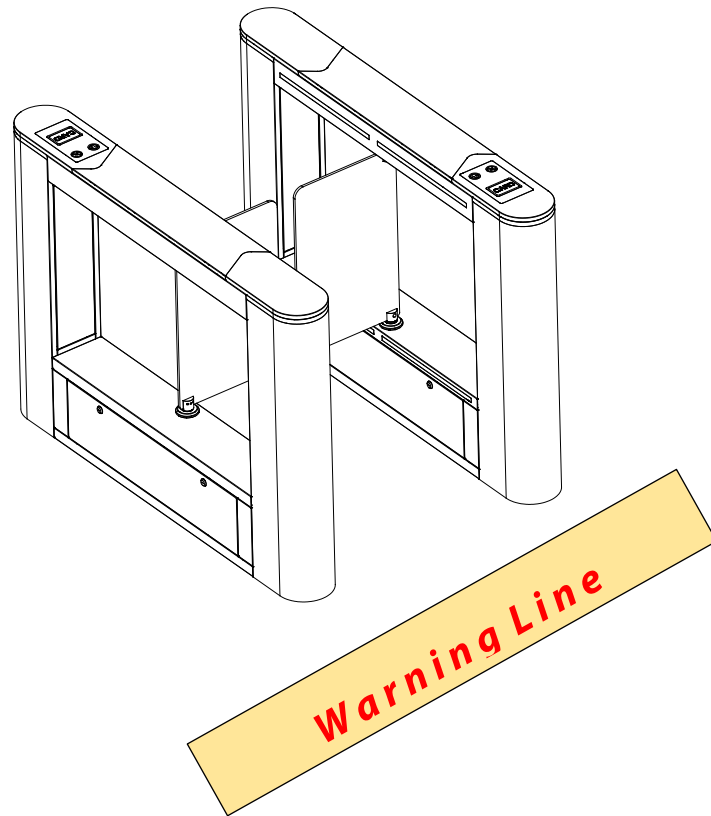
Figure 2-3

3   Menu Introduction

3.1   Function Introduction

1.   After powered on, the LCD screen on the control board will display the default state showing the current working mode.

2.   There are 4 buttons on the control board: **UP**, **DOWN**, **ENT**, and **ESC**, show as Figure 3-1:

   UP: to move upwards or increase the value.

   DOWN: to move downwards or decrease the value.

   ENT: to enter a menu setting item or confirm the current modified value.

   ESC: to return to the previous menu or cancel the current operation.

Figure 3-1

3.   Operation and instruction of menu

Press the **ENT** button and enter the password input interface. The default password is: **UP**, **UP**, **DOWN**, **DOWN**, **DOWN**, **DOWN**. You may press the **ESC** button to erase the last input. After entering the menu, press **UP** or **DOWN** to choose a menu item, then press **ENT** to enter the interface and adjust such function or value.

There are four keys on the control panel, including "UP", "DOWN", "ENT", and "ESC". Press "ENT" to modify settings, press "UP" and "DOWN" button to select a function, and press "ESC" to exit.

3.2 Menu Introduction

After input correctly password then press "OK" and the menu operation interface is displayed.

The menu has the following options:

1.   Barrier positioning

Zero position (Default).

Left opening position.

Right opening position.

2.   Opening mode

Bi-direction swiping card. (Default)

Left free + Right swiping card.

Left swiping card + Right free.

Bi-direction control by IR sensor.

Left forbidden + Right swiping card.

Left swiping card + Right forbidden.

Left forbidden + Right free.

Left free + Right forbidden.

Bi-direction forbidden.

3. **Open duration**

5~60s (The default is 10s).

4. **False direction entry**

Close door and voice alarm.

Voice alarm (Default).

Alarm disabled.

5. **Speed of barrier closing and opening**

Low speed.

Middle speed (Default).

High speed.

6. **Anti-tailgate**

Alarm disabled.

Voice alarm (Default).

Close door and voice alarm.

7. **Reset counter**

Exit counter (Default).

Entry counter.

Both.

8. **Gate closing delay time**

0~10s (The default is 0).

9. **Unlock brake**

Delay to unlock (Default).

Unlock after card swiping.

10. Brake starting angle

3~10° (The default is 3°).

11. Fire signal setting

Right opening (Default).

Left opening.

Disable.

12. System working mode

Working mode (Default).

Test mode.

Factory reset.

13. Volume setting

Disable.

1~16 (The default is 5).

14. Exchange voice of door opening

No (Default).

Yes.

15. IR anti-pinch setting

Disable.

Stop turning for anti-pinch (Default).

Open the barrier for anti-pinch.

16. Memory function

Disable (Default).

Enable.

17. Select anti-pinch area

No anti-pinch (Default).

All IR areas for anti-pinch.

18. Master device speed compensation

0~20 (The default is 0).

19. Slave device speed compensation

0~20 (The default is 0).

20. Swiping card mode

Allow to swipe card in passage (Default).

Not allow to swipe card in passage.

21. Version

V6.0.4.

4 Troubleshooting

Number	Failure description	Analysis and solution
1	No response from direction indicator or indication is not correct.	Check whether the connection of the roof lamp is correct or not.
2	After swiping the card, there is only a swing arm action.	Check the master and slave machine type setting and the 5-core, 2-core connection line.
3	Delay in barrier opening doesn't close.	Check whether the time of the opening is too long or the IR sensor is covered.
4	Motor doesn't rotate, the resistance is much, or the belt is loose.	The motor works properly, but the rotated angle is not sufficient, so it may cause loosening of belt.
5	When powered ON, the swing doesn't return to the initial position.	Ensure that no obstacle is in the sensing area, then restart the equipment.

5 Product Maintenance

5.1 Chassis Maintenance

The chassis is made up of SAE 304 stainless steel. If it is in service for a longer period, then there may be rust stains on its surface, regularly sand the surface along the grain softly and carefully. Coat the surface with anti-rust oil, do not cover the infrared sensor.

5.2 Movement Maintenance

Switch off the power supply before maintenance. Open the door, clean surface dust, lubricate the transmission mechanism. Check the belt movement, if found loose, adjust the position of the motor to tighten the belt. Check and tighten others connection parts.

5.3 Power maintenance

Switch off the power supply before maintenance. Check the plug connection, if found loose, fix it properly. Do not change any connection position randomly. Check the external power supply insulation periodically. Do periodic check for any king of leakage. Check if the technical parameters of interface are normal. Check the service life of the electronic components and replace accordingly.

Caution: Above mentioned maintenance method for swing barrier must be carried out by professional personnel. Especially the movement and the electric control part, first switch off the power supply, ensure the operation safety.

Appendix Internal Wiring Diagram
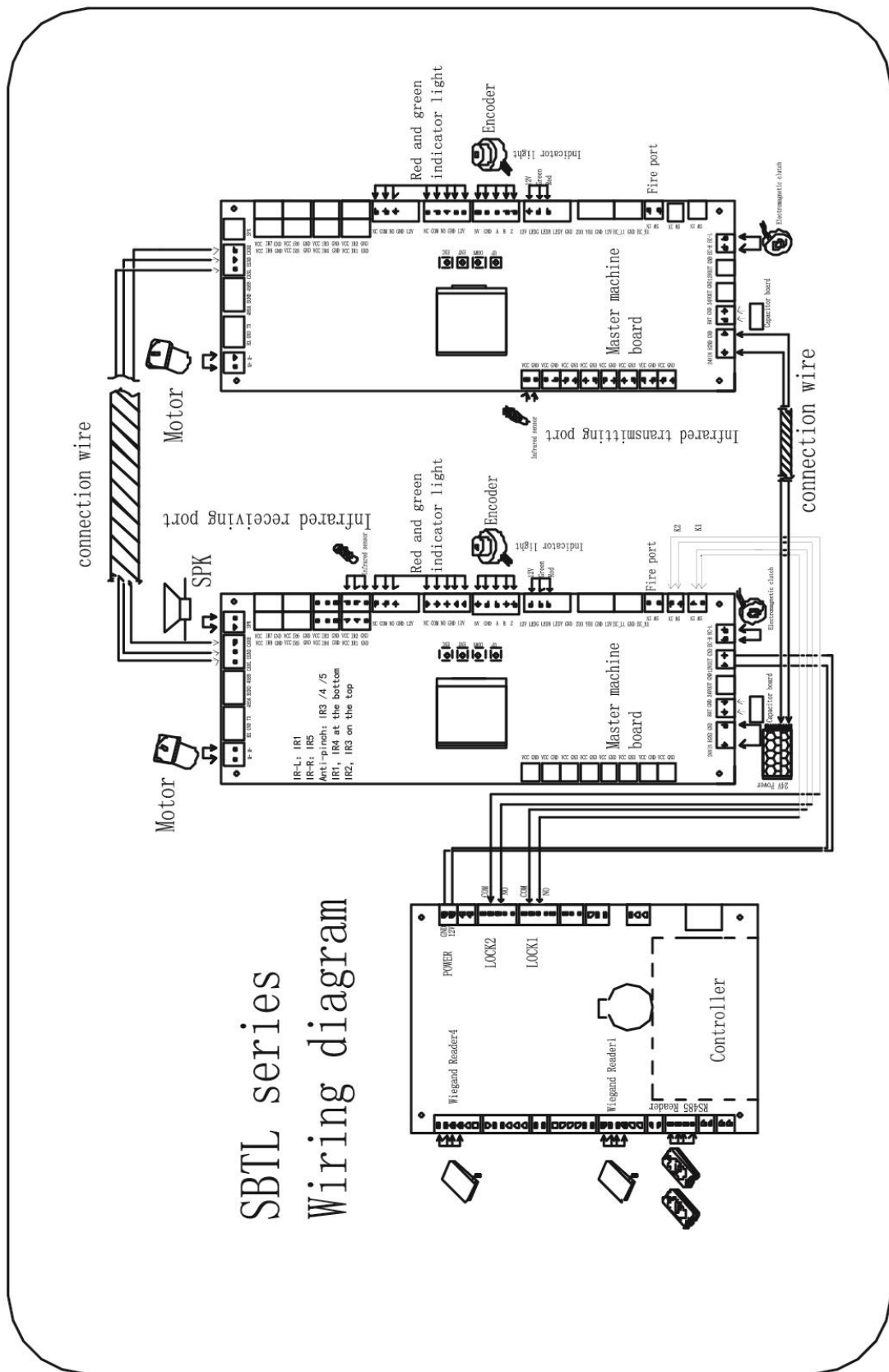
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