

User Manual

Full Height Turnstile Series

Applicable Model(s): FHT3300, FHT3400

Date: July 2023

Doc Version: 1.1

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.



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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 **Full Height Turnstile Series**.

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

Features and parameters with ★ are not available in all devices.

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






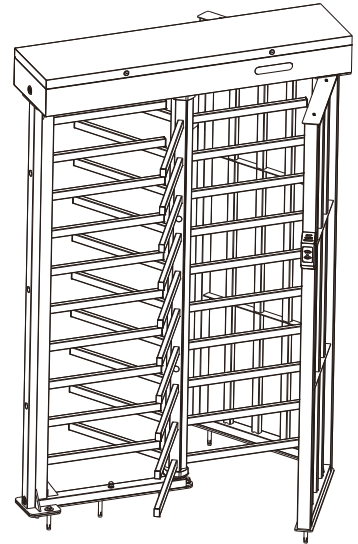
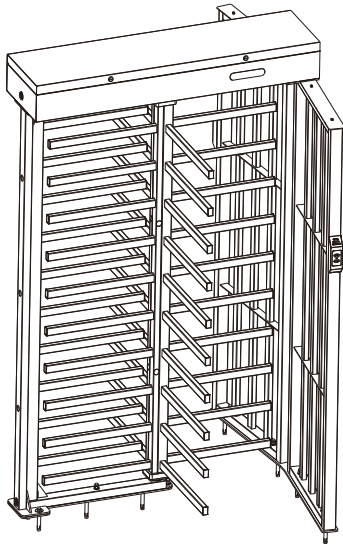
Convention	Description
	This represents a note that needs to pay more attention to.
	The general information which helps in performing the operations faster.
	The information which is significant.
	Care taken to avoid danger or mistakes.
	The statement or event that warns of something or that serves as a cautionary example.

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1 Overview

ZKTeco's FHT3300 series is a modular design full height turnstile and the angle of the barriers are 120 degrees, and the FHT3400 series has a 90 degree barrier. It is very comfortable for people pass through. Full height turnstile series provide a high security level. It is often used in the situations without security guard.



1.1 Features

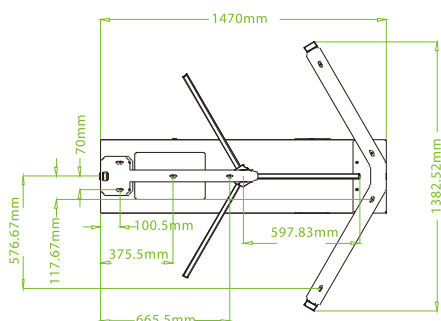
- The entire device is made of SUS304 stainless steel.
- The rotating shaft has a modular design, making it easy to install and maintain.
- It has a strong anti-tailgating capability, allowing only one person to pass at a time.
- In case of an emergency, the turnstile will unlock automatically, enabling people to push it open.
- LED indicator lights are present on both sides to guide people while they pass through.
- Support fire linkage, receive fire signal can unlock the gate in emergency and alarm prompt.
- Low power consumption.
- The device has a self-protection function that safeguards against strong intrusion, excessive current, and other special circumstances that may cause damage to the product or pose a risk of injury or fatality.

1.2 Appearance and System Components

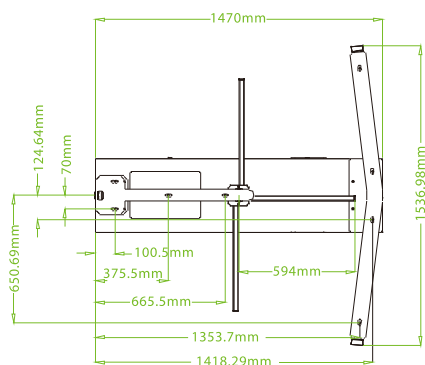
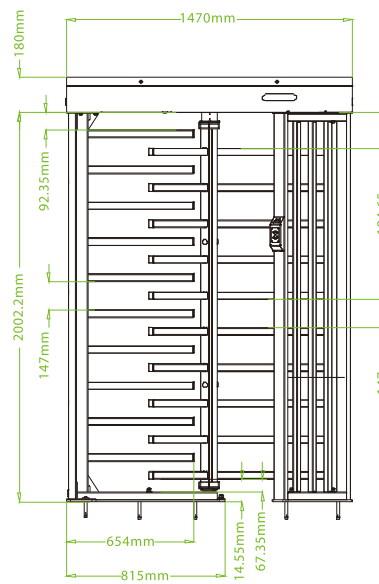
1.2.1 Appearance

The appearance and dimensions of the Full height turnstile series are shown in the figure below:

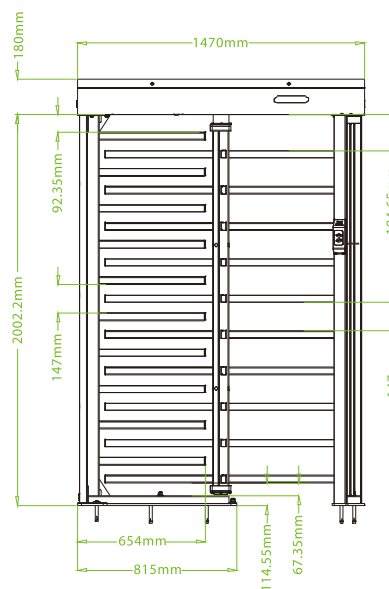
Dimension(mm)



FHT3300 Series



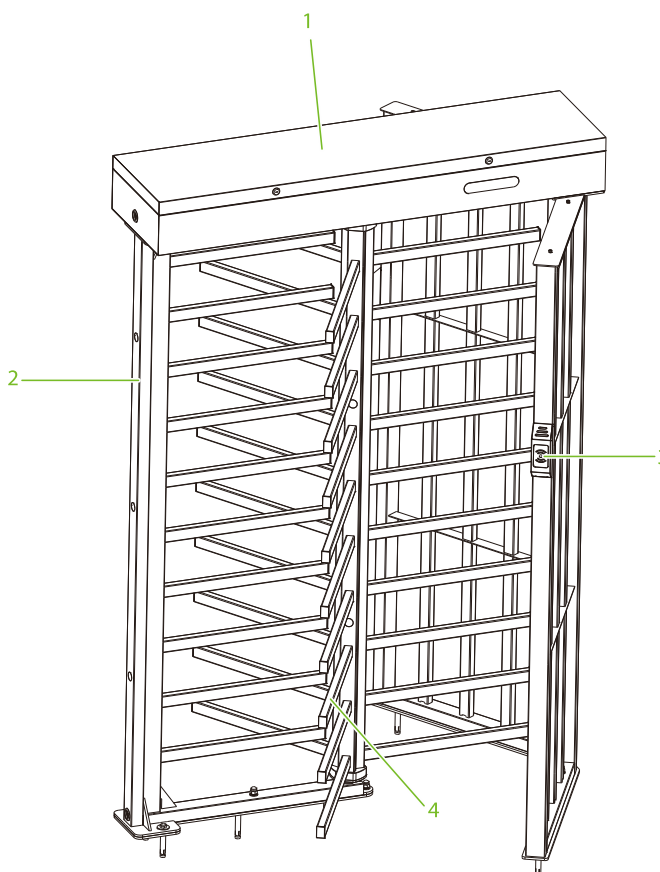
FHT3400 Series



1.2.2 System Components

The system components of the full height turnstile series are shown below:

In this manual, the illustration of the FHT3300 series will be used as an example:



1. Mainframe Box	2. Frame
3. Verification Units	4. Barrier

1.3 Mechanical System

The mechanical system of the full height turnstiles consists of a mainframe box and a frame.

The direction indicator, core, control panel, access controller and lock are installed in the mainframe box. The core component mainly consists of two solenoids, a spring and a transmission mechanism. The frame supports the entire mainframe box.

1.4 Electronic Control System

The electronic control system of the full height turnstile is composed of the reader, control panel, access controller, direction indicator, alarm, and transformer.

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

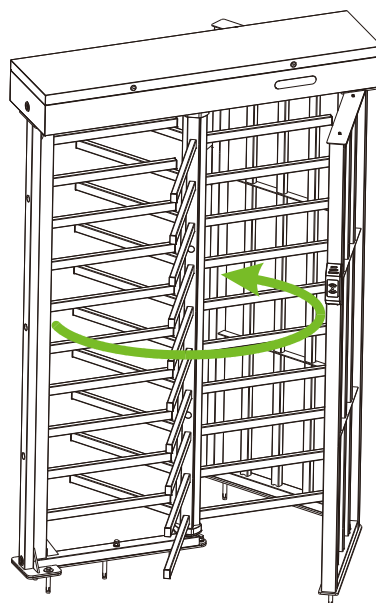
Turnstile Control Board: The turnstile control board serves as the control center of the system. It receives signals from the reader and the dry contact, performs logical calculations and processing of these signals, and sends executive commands to the barrier.

Traffic Indicator: The system will illuminate the red indicator when the gate is closed. When someone passes the verification, the system will illuminate the green indicator.

Alarm: The alarm emits voice and light signals if the system detects any unauthorized entry to the passage, false direction entry, anti-tailgate or other violations.

1.5 Power-On Self-Test

1. Please make sure that the power requirements are strictly met to avoid permanent damage to the unit. Input voltage: AC 100 to 120V /200 to 240V. Note: The Full Height Turnstile series must be connected to the ground (earth).
2. Power on the full height turnstile series and wait for 30 seconds for it to complete the self-check program.
3. Move the barrier manually, as shown in the diagram below:



4. Check whether the full height turnstile series and the LED indicators work properly. If there is any problem, please contact the supplier for assistance.

1.6 Working Principle

1. When connecting the device to the power source, the system initiates a Power-On Self-Test. If no issues are detected, the device will operate normally.
2. When a valid card is presented, the traffic indicator will send a green indicator to the pedestrian to indicate that the verification is successful. Subsequently, the card reader sends signals to the Access Controller, requesting permission to pass through the passage. The Access Controller, in turn, sends the signal to the Turnstile Control Board.
3. After receiving the signal from the card, the Turnstile Control Board will transmit valid control signals to the servo motor driver. If the system is in the forbidden passing mode, the mode indicator light will turn red, and the Turnstile Control Board will not accept any card signals.
4. Pedestrians should follow the traffic indicator and gently push the unlocked barrier; the barrier will rotate till the pedestrian passes through the lane.
5. The pedestrian can only pass through the lane after a valid card has been successfully verified.

Note: Make sure that the ground wire of the system is reliably connected to avoid personal injuries or other accidents.

1.7 Technical Specifications

Feature	Specification
Input Voltage	AC110V/220V, 50/60Hz
Operating Temperature	-28°C to 60°C
Operating Humidity	0% to 95% (Non-condensing)
Working Environment	Indoor/Outdoor
Flow Rate	Maximum 20/minute
Lane Width	660mm

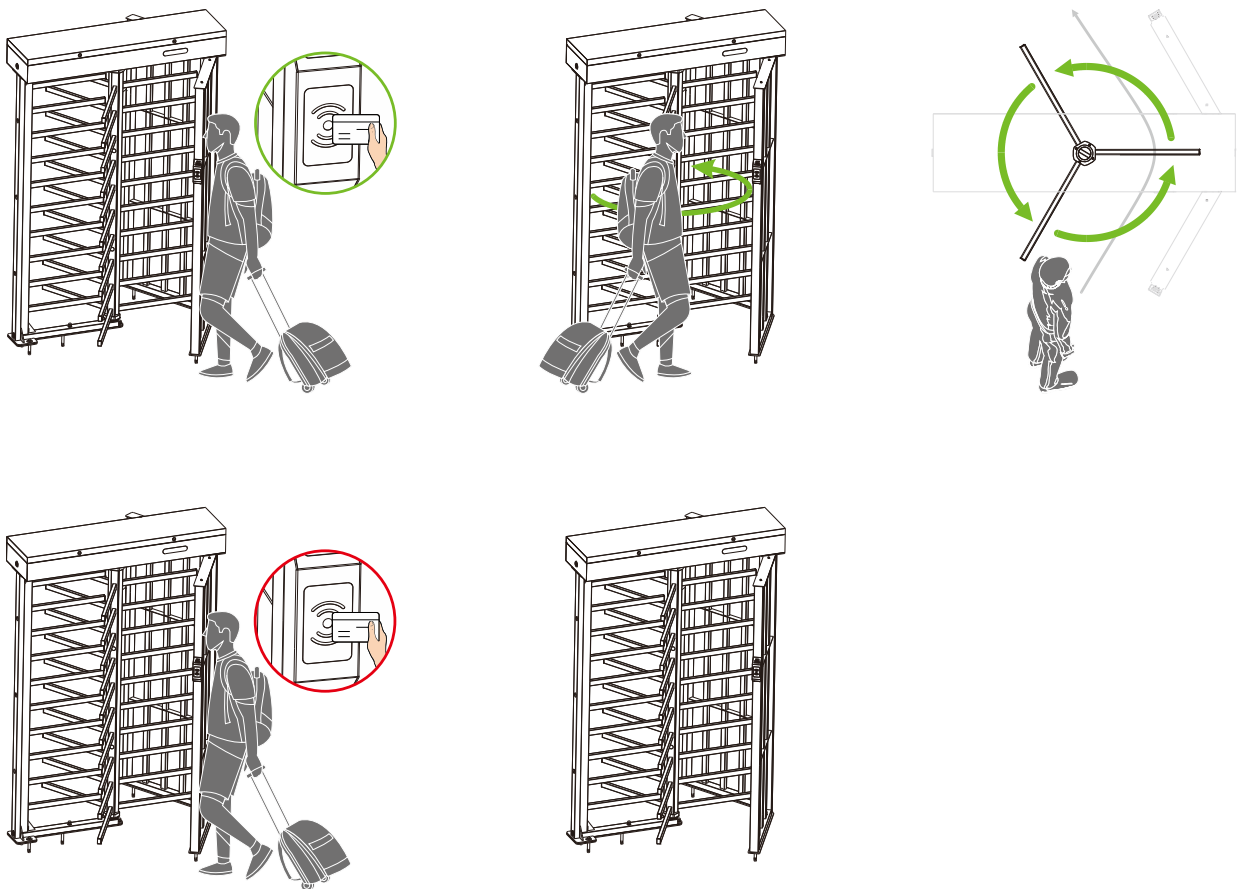
Footprint (L*W)	1470*1444mm
Dimension (L*W*H)	1470*1444*2143mm
Dimensions with Packaging (L*W*H)	1200*2100*1200mm
Net Weight	260kg
Gross Weight	300kg
Cabinet Material	SUS304 (Option SUS316)
Barrier Material	SUS304 (Option SUS316)
Barrier Movement	Rotating
Emergency Mode	Supports
Security Level	High
MCBF	1 million
Protection Level	IP54
Warranty	1 year

2 Function Introduction

2.1 Card Verification

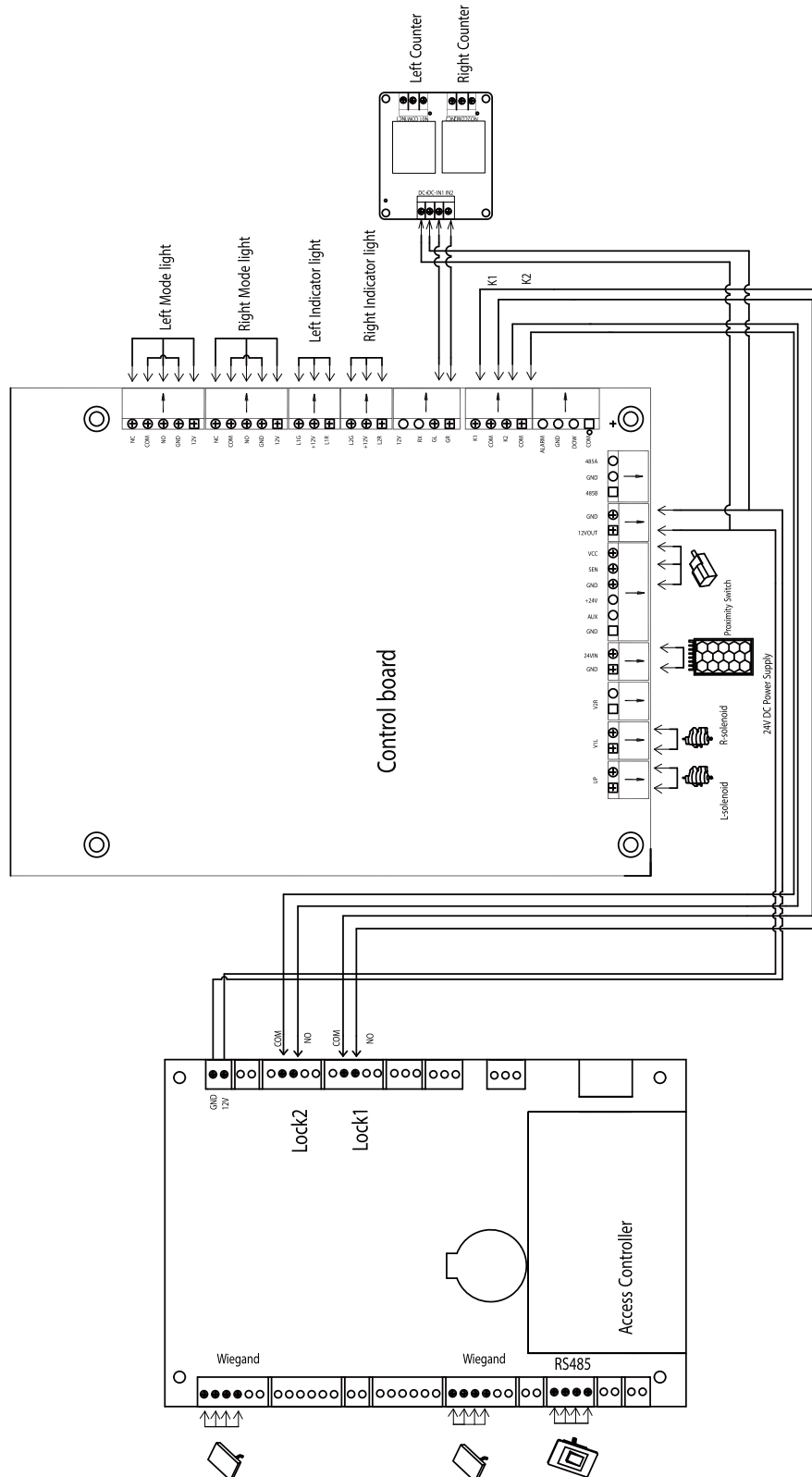
The Card Verification mode compares the card number in the card induction area with all of the card number data registered in the device and sends it to the Access Controller.

When a user presses his / her card on the card reading area, the device enters card authentication mode.

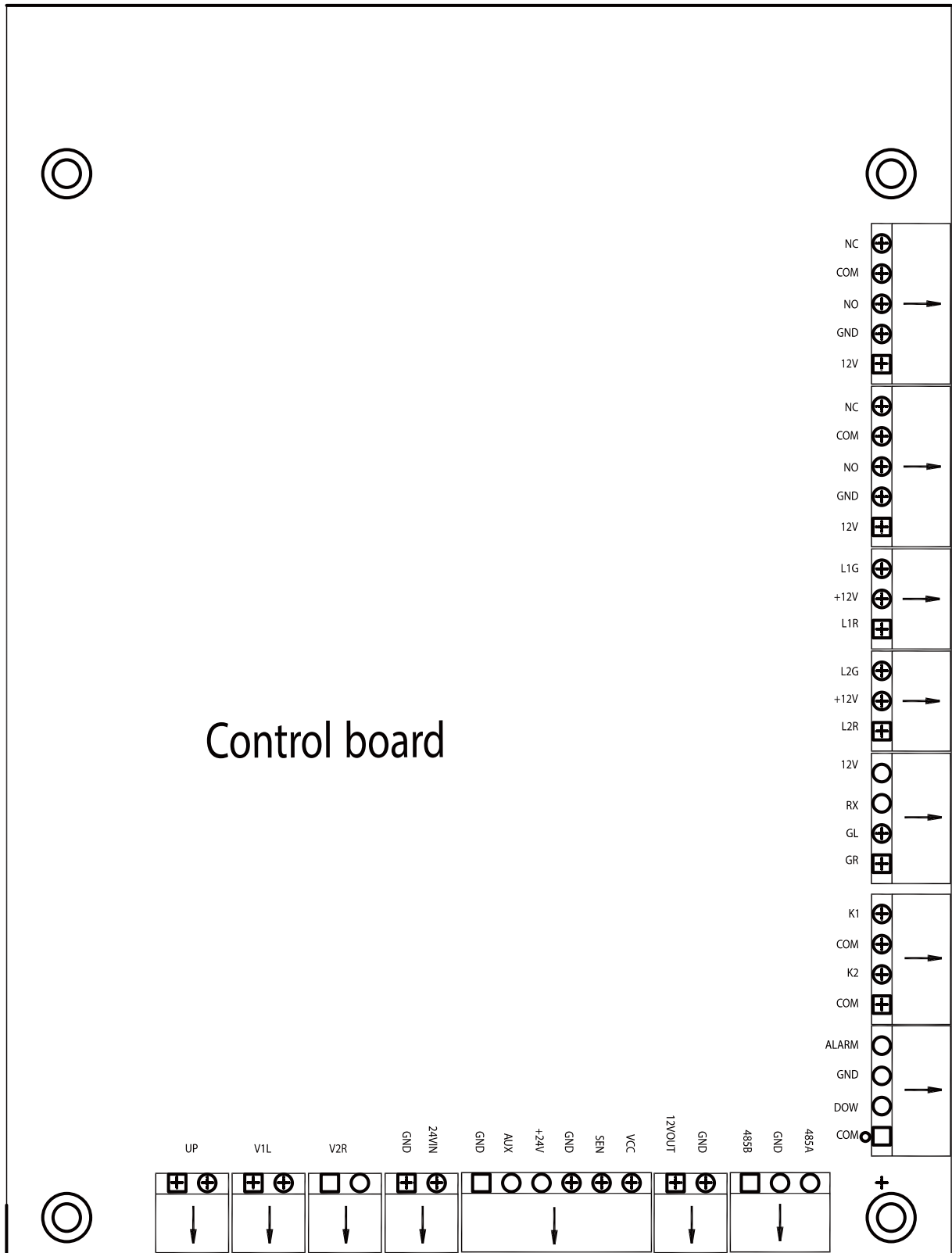


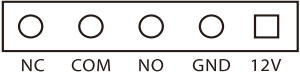
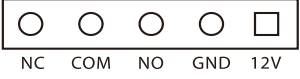
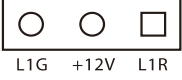
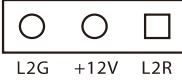




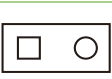





3 Control System Introduction

3.1 Wiring Diagram

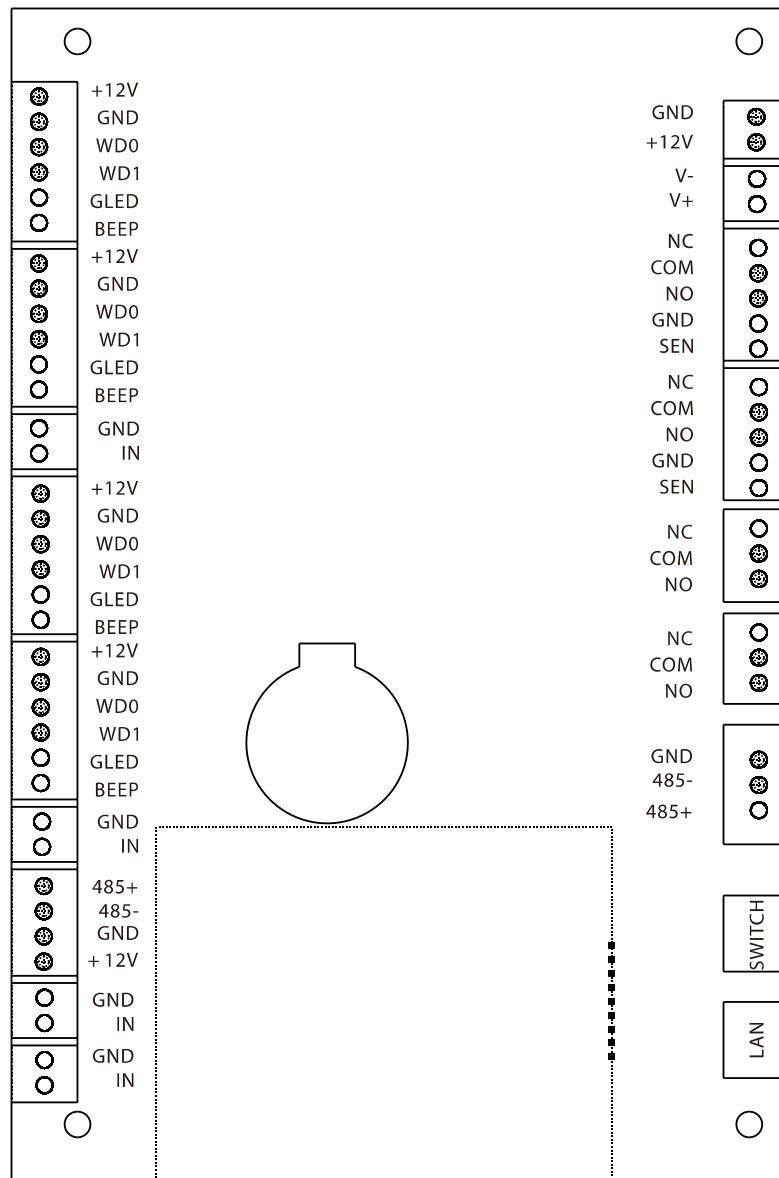


3.2 Turnstile Control Board








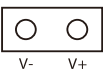
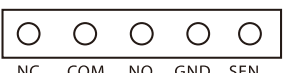
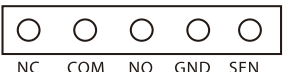


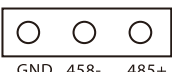




Terminal	Description
 <p>NC COM NO GND 12V</p>	Left Mode Light
 <p>NC COM NO GND 12V</p>	Right Mode Light
 <p>L1G +12V L1R</p>	Left Pass Light
 <p>L2G +12V L2R</p>	Right Pass Light
 <p>12V RX GL GR</p>	Left/Right Count
 <p>K1 COM K2 COM</p>	Left/Right Open
 <p>ALARM GND DOW COM</p>	Alarm/ Fire Signal
 <p>485A GND 485B</p>	RS485
 <p>GND 12VOUT</p>	12V Power Supply Output
 <p>VCC SEN GND +24V AUX GND</p>	Proximity Switches
 <p>24VIN GND</p>	24V Power Supply Input
 <p>V2R</p>	Reserved
 <p>V1L</p>	R-open Solenoid
 <p>UP</p>	L-Open Solenoid

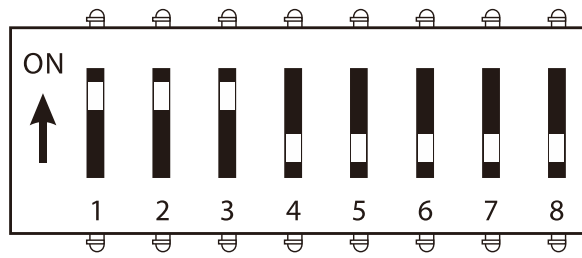
3.3 Access Control Board



Terminal	Description
	Reader
	Reader
	Button

 <p>+12V GND WD0 WD1 GLED BEEP</p>	<p>Reader</p>
 <p>+12V GND WD0 WD1 GLED BEEP</p>	<p>Reader</p>
 <p>GND IN</p>	<p>Button</p>
 <p>485+ 485- GND +12V</p>	<p>RS485</p>
 <p>GND IN</p>	<p>Auxiliary Input</p>
 <p>GND IN</p>	<p>Auxiliary Input</p>
 <p>GND +12V</p>	<p>Power In</p>
 <p>V- V+</p>	<p>Lock</p>
 <p>NC COM NO GND SEN</p>	<p>Lock</p>
 <p>NC COM NO GND SEN</p>	<p>Lock</p>
 <p>NC COM NO</p>	<p>Auxiliary Output</p>
 <p>NC COM NO</p>	<p>Auxiliary Output</p>
 <p>GND 458- 485+</p>	<p>485 Connections</p>
 <p>SWITCH</p>	<p>Switch</p>
 <p>LAN</p>	<p>Ethernet</p>

3.4 DIP K1 Switch Configuration



PIN	Function Setting	Description
1	Opening duration	1
2	Opening duration	1
3	Opening duration	1
4	Direction indicator	0
5	Direction indicator	0
6	Memory function	1
7	Memory function	0
8	Testing mode	0

Opening Duration			
Bit setting	Duration	Bit setting	Duration
111	5s	011	30s
110	10s	010	40s
101	15s	001	50s
100	20s	000	60s

Direction Indicator	
Bit setting	Direction
00	Passing is allowed in both directions
01	One way traffic, right passing is allow
11	One way traffic, left passing is allow
10	Both ways forbidden

Memory Function	
Bit setting	Memory
00	Unable memory function
10	Allow memory function

Alarm	
Bit setting	Solenoid automatically open and close
0	Unable auto testing
1	Allow auto testing

4 Maintenance

4.1 Chassis Maintenance

The mainframe box is made of 304 stainless steel. So after a long period of operation, its surface may have some stains. You can use a soft cotton-cloth to clean the mainframe box. In protect surface lines, please wipe along the lines direction. It's best to polish and wax it.

4.2 Movement Maintenance

Before performing maintenance, turn off the power. Open the door, wipe off any surface dust, and apply lubricant for smooth movement.

4.3 Power Supply Maintenance
















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




Caution: All the maintenance methods mentioned above for the Speed Gate R should be carried out by a professional technician, particularly when it comes to the movement and electric control components. To ensure operational safety, always switch off the power supply when the speed gate is not in use.

5 Packing List

The package consists of the following items:

	Item	Number
	Barrier	3 (FHT3300 series)
		4 (FHT3400 series)
	Top Cover Plate A	1
	Top Cover Plate B	1
	Top Fixing Plate	1
	Frame A	1
	Frame B	2
	Mounting Plate A	1
	Mounting Plate B	1
	Mainframe Box	1
	Fixation Block 120°	2 (FHT3300 series)
	Nut	6 (FHT3300 series)
		8 (FHT3400 series)
	Hole Plug	6 (FHT3300 series)

		8 (FHT3400 series)
	Screw (M6*16)	16
	Screw (M6*25)	12 (FHT3300 series)
		16 (FHT3400 series)
	120° Row Rod Connection Block	2
	120° Shaft Head	1
	120° Bearing Seat	1
	Screw (M12*100)	8
	Nut (M12)	6
	Screw (M10*55)	8
	Screw (M10*100)	2
	Bearing	1
	Bearing A	1
	Bearing B	1
	Screw (m6*10)	2
	Power Cable	1
	Card	1

	Stainless Steel Maintenance Wipes	1
	Hex Wrench	1
	Key	1

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