TRIPOD TURNSTILE

USER MANUAL

1 PRODUCT INTRODUCTION

1.1 INTRODUCTION

The electronic tripod turnstile, which is an electric control mechanism installed in the building structure, is used to form an access control system. The rotation unit consists of three tubular arms which are positioned at 120º intervals so that when the unit is at rest, one arm will always be in the horizontal position (barrier position).The movement of the rotation unit can be realized by pushing arms lightly. If arm rotates more than a settled position, the elastic potential energy will drive the rotation unit to complete the whole process of rotation.

1.2 FUNCTION FEATURES

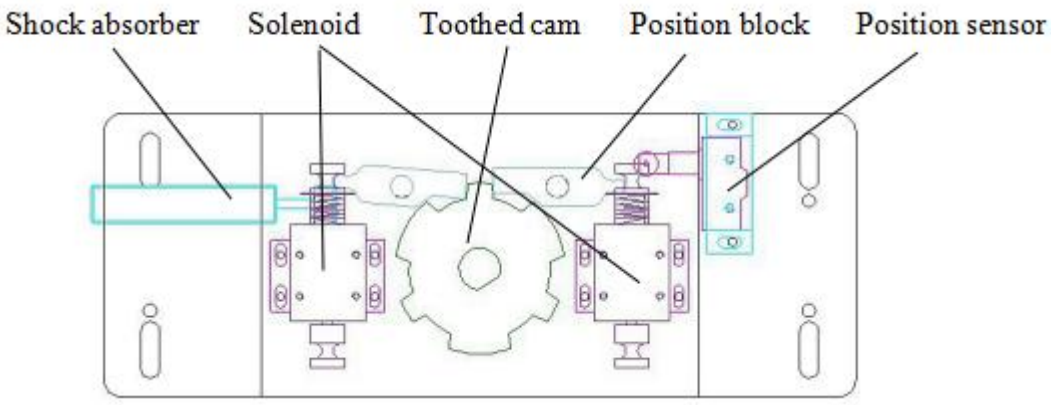
1) Standard signal input port: can be connected with most of access control controllers or standalone devices
2) The turnstile has automatic reset function: if people swipe the authorized card, but don' t pass through within the settled time, it need to swipe card again for entry
3) Automatic opening after emergency fire signal input
4) Anti following : prevent illegal passing
5) High light LED indicator, displaying passing status
6) Normal open can be also controlled via external button or manual key unlock
7) Arm will automatically fall down when power failure

1.3 PRODUCT STRUCTURE AND PRINCIPLE

1.3.1 Product structure

The structure of the product is mainly composed of mechanical system and electric control system

Mechanical system



Core

1) Rotary unit

The unit comprises a shaft, toothed cam assembly and ratchet assembly. The toothed cam assembly comprises a steel toothed cam, polyurethane toothed cam and locking flange that are bolted together with bolts and spacers

2) Locking device

The locking action is performed by the heads of the lock arms on the teeth of the toothed cam assembly

3) Positioning cam

The positioning cam is machined a guide way with a special profile. In this guide way, three points at a minimum distance from the centre are arranged at 120° intervals and correspond to the three positions of the tripod.

4) Damper (shock absorber)

The function of the damper is to adjust the force exerted by the spring on the rotary unit in order to ensure that the unit comes to a gentle stop. The greater the buffer value, the greater the buffer strength

5) Restoring device

The function of the restoring device is that the positioning sensor can receive a signal and then transmit it to the drive board when the arm has rotated about 110°

6) Anti reversal device

The anti-reversal device is used to prevent rotation of the rotary unit in the opposite direction to that of the initial rotation. This means that once the tripod has been moved in one direction, the device will prevent a reverse movement in the opposite direction

7) Tripod

The tripod, which is fitted by three screws, is composed of three lock arms, three arm detents and a drop arm. The arms are positioned at 120° intervals, so that when the tripod comes to rest, one of the arms will be in the barrier position

Electric control system

Nº	Name	Function
1	Access control device	IC/ID card access control, fingerprint, face recognition, code reader, access control device send delay signal to the turnstile board door signal (it is available according to actual use)
2	Control board	The control center of the system: when receiving the access control device delay signal, it control solenoid open, the direction indicator light turns green. The arm can be pushed to 120 degree, the solenoid will lock immediately when receiving closing signal from core position sensor
3	Indicator	Display the current channel status
4	Position sensor	Detects and controls the opening and closing position of the gate
5	Square solenoid	Control shatf close or open
6	Circular solenoid	Falling and upper arm
7	Damper	Makes the shaft run smoothly (match)
8	Power supply	Power supply to control board

2 EQUIPMENT INSTALLATION

2.1 ARM INSTALLATION

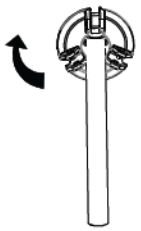


Fig 1. Please rotate turnplate 120°

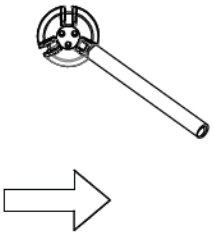


Fig2.

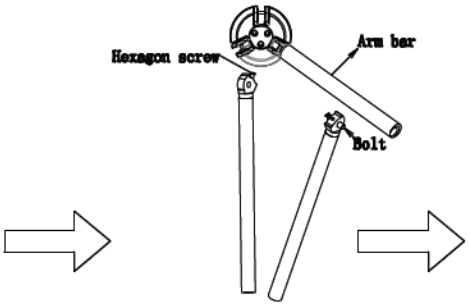


Fig 3. Please loose hexagon socket cap screws

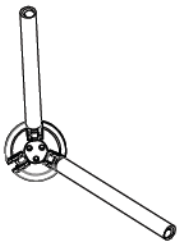


Fig 4. Please insert arm bar

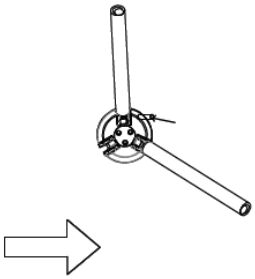


Fig 5. Please insert bolt

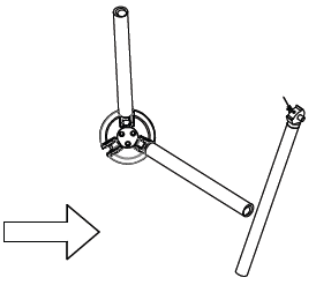


Fig 6. Please tighten hexagon socket cap screws

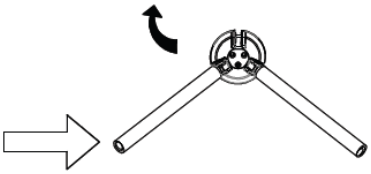


Fig 7. Please install third arm bar like second arm bar

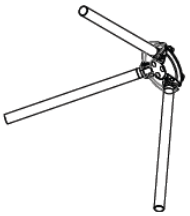
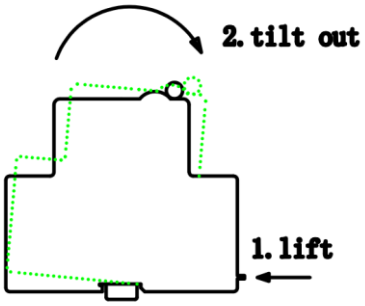
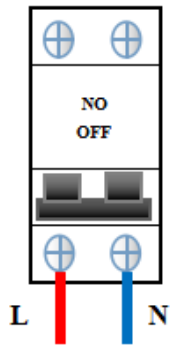


Fig8.

2.2 CONECCTION

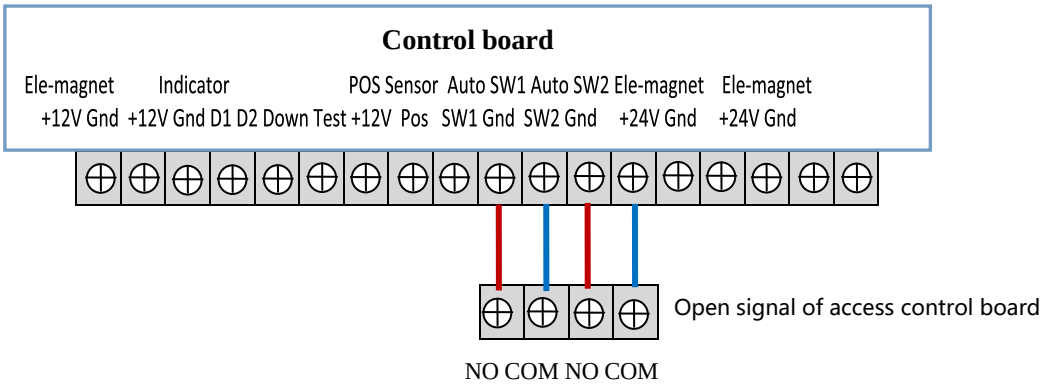
Connecting AC 100~220 V power input



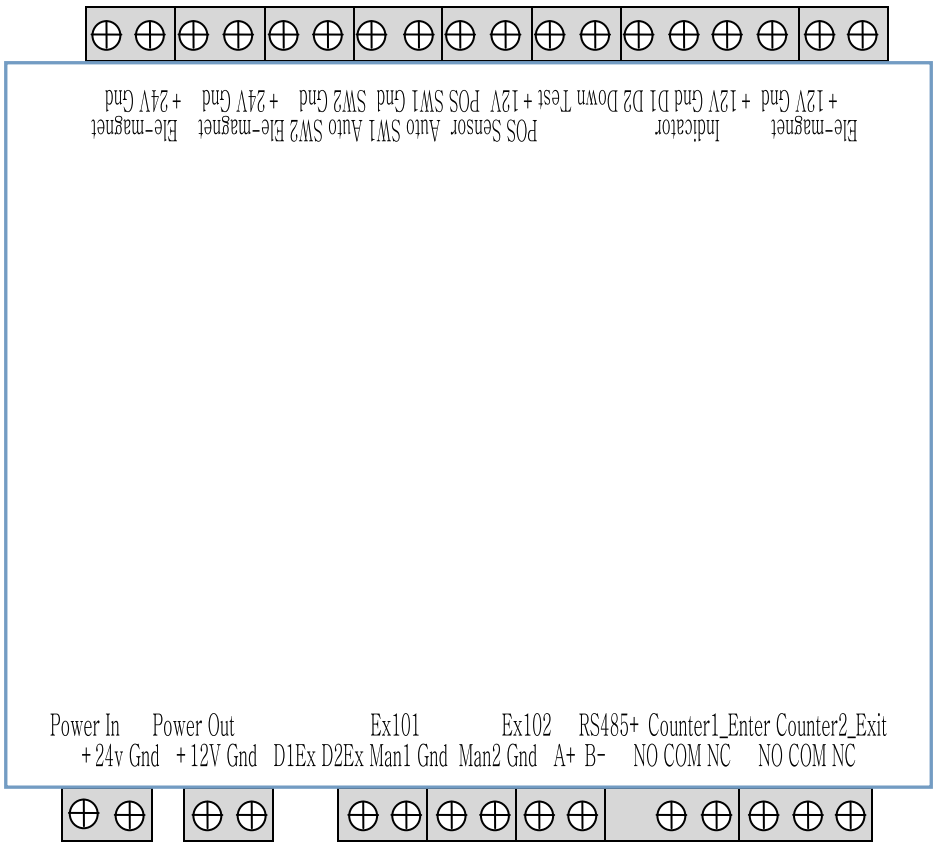


AC100-220v Input connecting wires

Connect wire of access control device



3 MAIN BOARD CONNECTION



No	Port sign	Instructions
1	+24V	24V input power supply to PCB board
2	GND	
3	+12V	12V power output to light bar, counter and other
4	GND	
5	D1Ex	NO USE
6	D2Ex	
7	Man1	Entry button for manual opening gate input
8	GND	
9	Man2	Exit button for manual opening gate input
10	GND	
11	A+	485 communication
12	B -	
13	NO	Entry relay normally open and normally close interface which also

14	COM	can connect entry counter
15	NC	
16	NO	Exit relay normally open and normally close interface which also can connect exit counter
17	COM	
18	NC	
19	+12V	DC 12 V power supply for arm drop down circular solenoid
20	GND	
21	D1	Entry LED indicator signal input
22	D2	Exit LED indicator signal input
23	+12V	DC 12 V power supply for indicator
24	GND	
25	Down	Testing for drop down function
26	Test	
27	+12V	Position sensor full close in place signal input: once arm turn 120 degree, it will give closing gate signal
28	POS	
29	SW1	Entry opening signal input: dry contact signal and access control PCB board entry opening relay signal (NO connect SW1, COM connect GND, and the relay time of access control board should be set "0" or "1")
30	GND	
31	SW2	Exit opening signal input: dry contact signal and access control PCB board exit opening relay signal (NO connect SW2, COM connect GND, and the relay time of access control board should be set "0" or "1")
32	GND	
33	+24V	Output for entry square solenoid. Normally 0 V, when board recieve open singal, this port will be 24 V output
34	GND	
35	+24V	Output for exit square solenoid. Normally 0 V, when board recieve open singal, this port will be 24 V output
36	GND	

4 WIRING DIAGRAM

