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INSTALLATION GUIDE

FPG257
LINE FLAP BARRIER

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Description

Introducing the innovative FPG257, an essential flap barrier designed for pedestrian access control. Flap barrier panel will retract automatically once an authorization is received from access controller system. This swift motion enable it to effectively manage high pedestrian traffic.

Through focusing on core functionality and streamlined build, FPG257 is designed to provide a cost-effective and robust solution for managing pedestrian traffic.

Features

✓ **Reliable**

Brushless motor drive delivers low noise and smooth operation. The absence of mechanical limit switches and carbon brush improves service lifespan and simplified maintenance.

✓ **Effective and Functional**

Smart controller board with LCD screen is operator-friendly. Standard features including consecutive access memory, multiple operation modes, and auto-close delay are all available to facilitate effective pedestrian access control.

✓ **Double Safety**

6 pairs of infrared sensors will detect passage sequence and prevent accidental closing. Coupled with smart algorithm, motor will reverse upon detecting an obstructing force on the door panel, minimizing risks of injury.

✓ **Emergency Evacuation**

FPG257 will automatically open in case of power-loss, or can be configured to open immediately when fire alarm signal is received.

✓ **Illegal Access Alarm**

During unauthorized events (e.g. illegal or reverse ingress), buzzer alarm will be triggered for caution and alert.

✓ **User Friendly**

RGB user guidance light is available on both sides and the door panel to intuitively guide the user into the passage through colour switching.

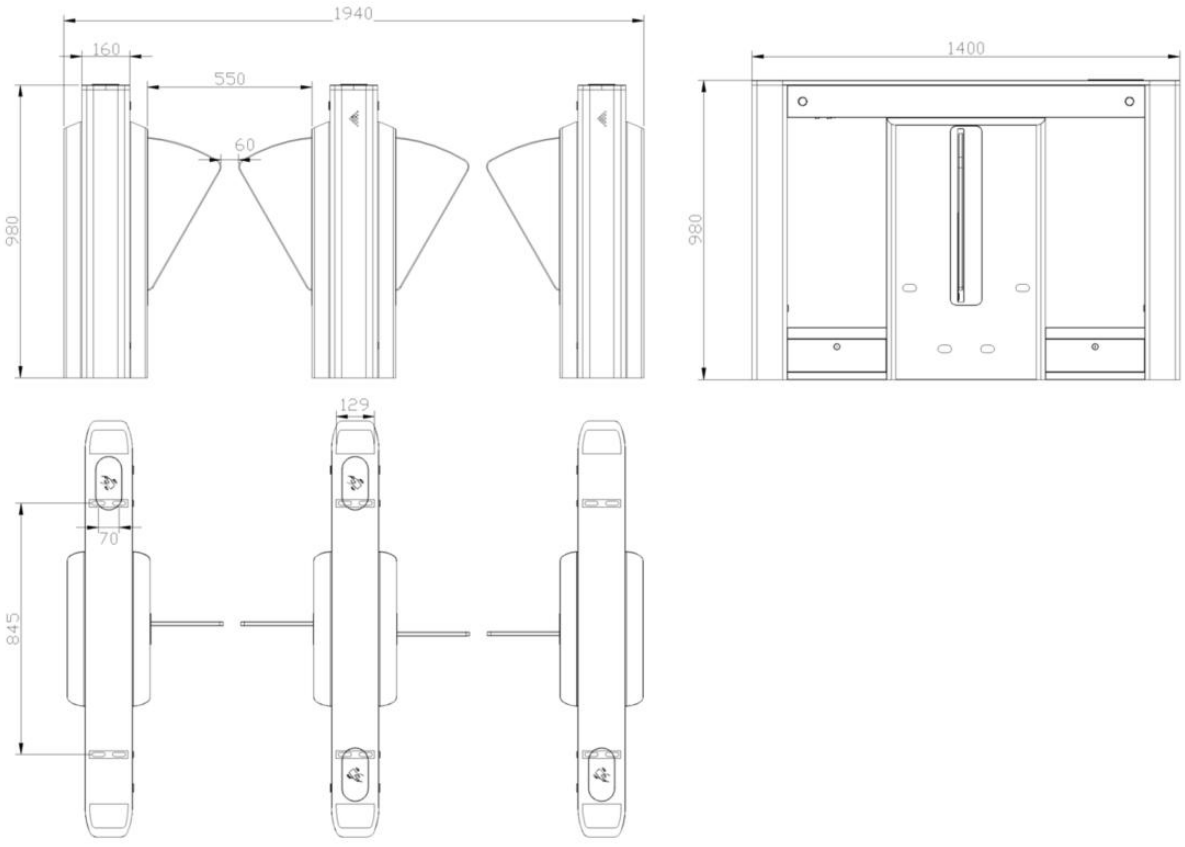
✓ **Easy Integration**

FPG257 can be integrated with any access control terminal through dry contact.

Technical Parameter

Description	Parameters
Body Material	Stainless Steel SUS304
Passage Width	550mm
Door Opening / Closing speed	Programmable, >0.6s.
Optimal Flow Rate	Up to 35 person per minute
Power Supply	AC220/110V±10%, 50/60Hz
Power Consumption	<150W (Operational)
Motor	DC Brushless Motor, 24V
Input Connection	Dry contact pulse
Working Environment	Indoor and sheltered outdoor
Working Temperature	-20°C - 70°C
Relative Humidity	≤ 90%, non-condensing
Door Material	Acrylic
IP Rating	IP 4X
MCBF	>5 million cycles

Dimension



Precaution

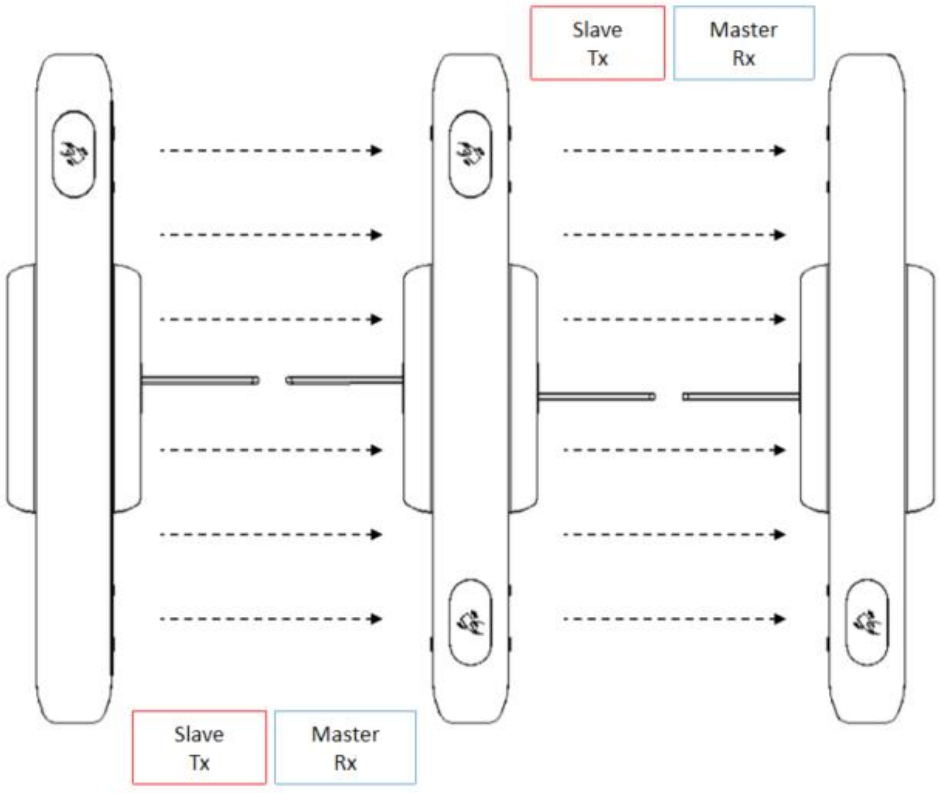
- In case of emergency, isolate the power from the power supply.
- Improper installation can cause danger (such as electric shock or fire). Please engage specialist for the proper installation work.
- DO NOT install the product in a potentially explosive atmosphere.
- DO NOT operate with wet hands.
- If abnormal condition (burnt smell. etc) occurs, switch off the power supply.
- DO NOT operate product when exposed to direct sunlight when cover is opened.
- Strictly indoor or well shaded application.

Installation

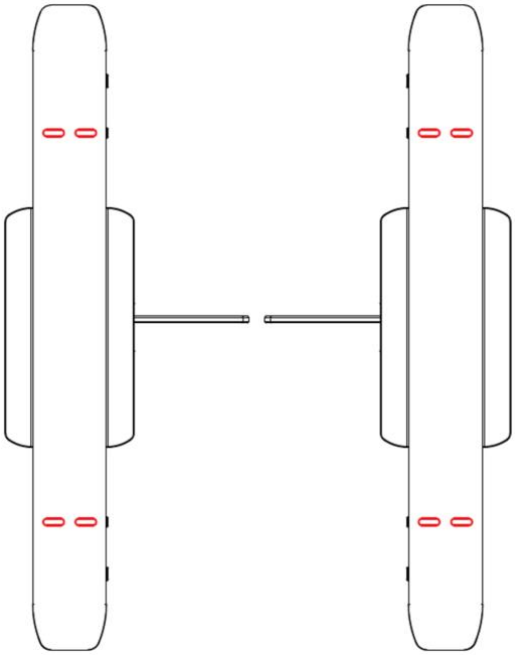
Position guidance label is affixed to the product wrapping, please take note before removing for installation.

1. Required wiring:
   - -AC 240V power line to MASTER side only (i.e. FPG257 - S (Master) ; FPG257 - D).
   - -Synchronization cables for each lane.
   - -Access control / fire alarm wiring .
2. Recommendation:
   - -Underground cable duct is recommended to be at least 60mm deep; outlet should be 50 mm higher from ground level.
3. Installation must be done on level and secured base.
4. Proper earthing must be done.

Step 1: Arrange and align the FPG257 according to the label on the package.

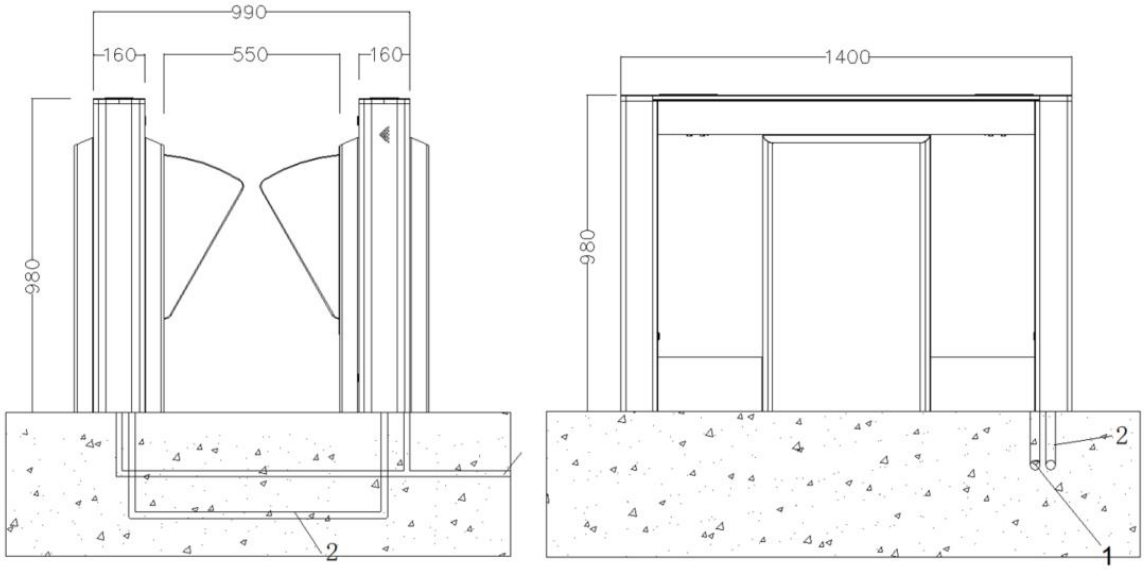


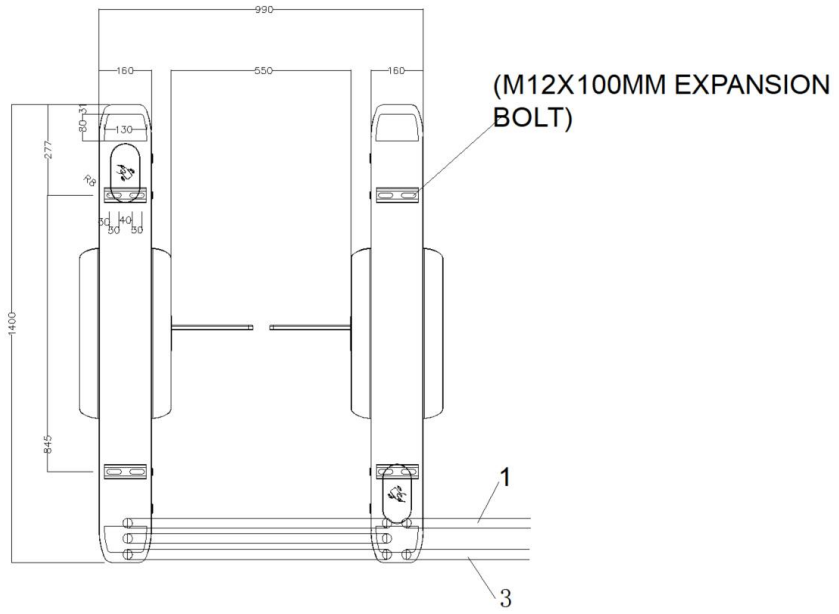
Step 2: Mark the position for expansion bolt installation.



Step 3: Move the flap barrier aside to install M12*100 expansion bolt according to the marked position.

Step 4: Wiring Set-up





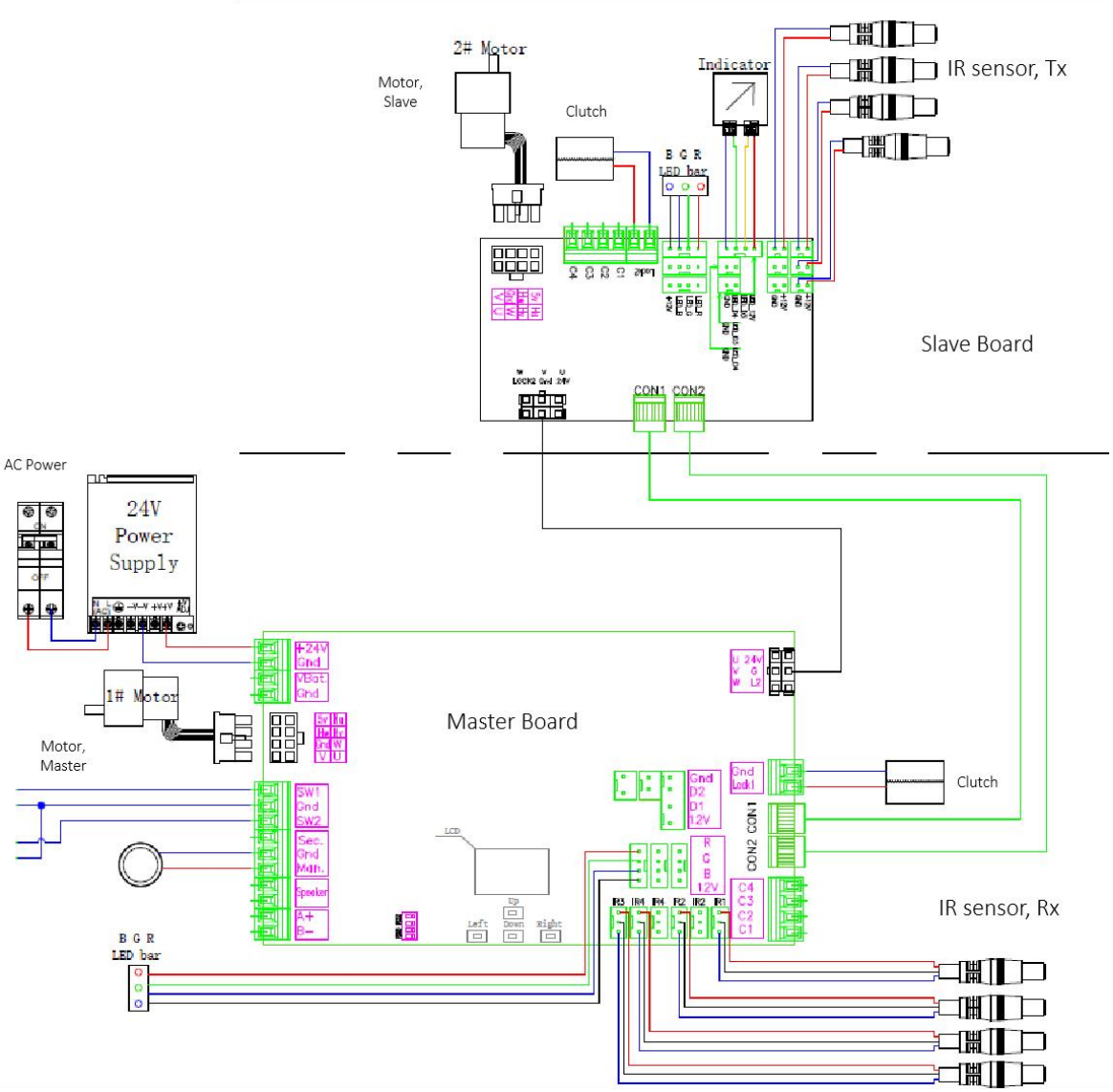
1	Ø 20mm PVC tube for AC240W power (3-core, Ø 2.0mm)
2	Sync cable to connect master and slave side for each lane. -2 nos. CAT5 network cable -1 nos. 6-core cable for motor
3	Access controller connection to PC / Server / Controller

Step 5: Testing

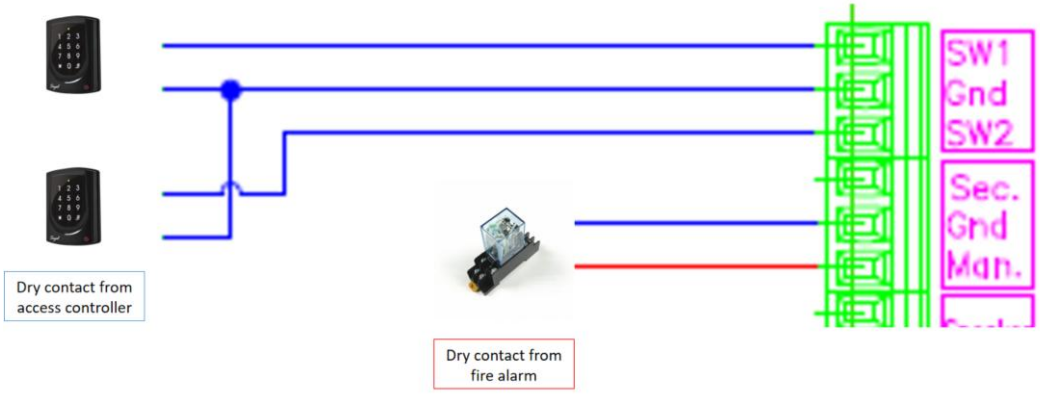
1. Verify the wiring connection and ensure all connection is secured before turning on the power.
2. After turning on the power, flap barrier will undergo initialization. Stay clear of the IR sensors zone and ensure all sensors are properly aligned and unobstructed.
3. Connect the access controller to the master side main board of each lane. Ensure the access control signal output is set to 1s.
4. Test and ensure the basic features are functional:
    a) Normal passage: After access is granted from controller, flap panel should retract. If a complete passage is made within 5s, the barrier should automatically closes promptly after the user exits. Otherwise, the flap panel will close under time-out protection after 5s.
    b) Intrusion alarm: Buzzer alarm will be triggered when IR sensors are obstructed without access.
    c) Safety: Flap panel should always stay opened if the sensors at the middle of the lane are obstructed. If the sensors are blocked while the flap panel started closing, it should reverse automatically.
    d) Power loss opening: After turning off the AC power, flap panels should retract automatically. (Back up power source needs to be charged for at least 10 minutes before testing. Insufficient charging time may cause incomplete retraction.

Wiring Connection

Control Panel



Typical Wiring Connection for Access Control



Frequently Used Settings

1. Adjust flap opening / closing speed.
   Use settings: 1.8, 1.9, 1.10 and 1.11.

2. Adjust opening time-out protection (i.e. the duration before the flap panel closes back if user did not go through the lane).
   Use setting 1.3: Pass Time Out

3. Configure flap barrier access mode (e.g. one-way only)
   Use setting 1.2: Gate Mode

Frequently Asked Questions (FAQ)

Problem	Troubleshooting Steps
1. Flap barrier does not close after power on.	Check and ensure the flap barriers are line-up in MASTER-SLAVE pairing. Ensure all the IR sensors are working, connected, and aligned properly (Tx-Rx).
2. Flap barrier does not close after the user has exited the lane. 3. Flap barrier retracts multiple times before fully closing.	Ensure the access control signal is set to 1s. Check and ensure all the IR sensors are working, connected, and aligned properly (Tx-Rx).
4. Flap barrier does not retract after receiving access signal.	Ensure IR sensors are aligned properly (Tx-Rx), and unobstructed. Disconnect the access control connection and test by jumper cable or push button. If the problem persists, swap the main controller board (MASTER) with adjacent lane unit.

Parameter Settings and Description

Menu	Description
1. Parameters	
1.1 Counter	Display pass through count
1.2 Gate Mode	Configure gate operation mode for both entry and exit direction, e.g. Normally Open Normally Close, Access Controlled (Default) Free Access by IR sensors Access Restricted
1.3 Pass Time Out	Single Pass Timer before gate reset and closes. Unit 0.1s, default 5 seconds
1.4 Memory	Consecutive Access Memory (a.k.a. card stacking) mode: 1. Both direction disable(default)
1.5 Read In Lane	Enable gate opening even when lane is occupied. (DO NOT CHANGE) 1. Not allowed (default)
1.6 Open Delay	Set door opening delay post authorization. 0-255, unit 0.1s, (default 0)
1.7 Close Delay	Set door closing delay after completed passage. 0-255, unit 0.1s, (default 0)
1.8 MIN Speed 1.	Set master side power-on initialization speed, Smaller value, lower speed.
1.9 MAX Speed 1.	Set master side opening and closing max speed, Larger value, higher speed.
1.10 MIN Speed 2.	Set slave side power-on initialization speed, Smaller value, lower speed.
1.11 MAX Speed 2.	Set slave side opening and closing max speed, Larger value, higher speed.
1.12 Pass End	Set IR Check passage end position: 1.Exit (default), 2.Safety
1.13 Intrusion Set	Set Intrusion Alarm Mode: 1.None, 2.Alarm (default), 3.Alarm and gate closes

1.14 Reverse Set.	Set passage from reverse alarm mode: 1.None
1.15 Tail-Gating	Set tailgating alarm mode: 1.None
1.16 Entry-Voice	N/A
1.17 Exit-Voice	N/A
1.18 Alarm-Voice	N/A
1.19 Adv. Param.	
.1 Gearbox RR	Set gearbox reduction ratio (1-120)
.2 KP1	N/A
.3 KP2	N/A
.4 Motor Pro.	Set motor over-current protection threshold, Default 2.0A
.5 Entry Angl 1	Set master side door opening angle for entry
.6 Exit Angle 1	Set master side door opening angle for exit
.7 Entry Angl 2	Set slave side door opening angle for entry
.8 Exit Angle 2	Set slave side door opening angle for exit
.9 Cushion Entry 1	Set master side door closing slow speed zone for entry
.10 Cushion Exit 1	Set master side door closing slow speed zone for exit
.11 Cushion Entry 2	Set slave side door closing slow speed zone for entry
.12 Cushion Exit 2	Set slave side door closing slow speed zone for exit
.13 Antagonism	Resistive force on force-pushing the door panel during idle / NC mode.
.14 Output Test 1	Display hall sensor value for master side door panel positioning
.15 Output Test 2	Display hall sensor value for slave side door panel positioning
.16 Lock Open	Clutch: 1.Disabled 2.Enabled

.17 Save Factory Settings	Save the current parameter as factory default: 1. OK 2. Cancel
.18 Auto Report	Set automatic gate status upload 1. Disabled (default), 2. Enabled
.19 Motor Direction 1	Set direction of master motor rotation: 1. DIR_ON, 2. DIR_REV
.20 Motor Direction 2	Set direction of slave motor rotation: 1. DIR_ON, 2. DIR_REV
.21 Motor Type	Motor type: 1. Motor1, 2. Motor2
.22 LED Mode	LED indicator type: 1.Static LED, 2.Square LED
.23 Relay Mode	Set relay mode for passage counter: 1.Disabled (default), 2.Enabled
.24 Set Device Type	Gate type: 1. Swing Barrier, 2. Flap Barrier, 3. Motorized Tripod turnstile
2. System Set	
2.1 Language	Set Menu Display Language
2.2 Device Type	Display Controller Device Type
2.3 Version	Display hardware and firmware version information
2.4 Set Address	Set Device Logic Address
2.5 RS485 Baud	Set the baud rate of the RS485 communication
2.6 Reset	Reset all settings to factory default
2.7 Restart	Restart controller
3. Factory Test	**(For trained technicians only)**
3.1 Cycle Test	Cycle / stress test

3.2 Set Zero	(Swing barrier only) Set door closing position

Stainless Steel Maintenance

Stainless Steel 304 (SS304) and Corrosion Factors

SS304 is renowned for its excellent corrosion resistance as part of the austenitic stainless steel family. However, under certain conditions, even SS304 can succumb to corrosion. Here are the primary factors to consider:

- **Halogen Ions (Chloride Ions, Cl^-)**
  Chloride ions, commonly found in salt, sweat, salty water, soil, and sea breeze, are particularly aggressive. They can disrupt the passive chromium oxide layer on SS304, leading to localized pitting and rusting.

- **High Temperature**
  Elevated temperatures can accelerate corrosion processes by increasing chemical reactivity and potentially degrading the protective oxide layer.

- **Iron Contamination**
  The presence of iron particles can create localized corrosion sites. When iron contaminates the surface of SS304, it can initiate rust formation. Sources of iron contamination includes but not exclusive to: brake dust from road traffic and iron dust from construction or fabrication.

- **Poor Maintenance and Cleaning**
  Without proper cleaning and maintenance, contaminants can accumulate on SS304 surfaces, increasing the risk of corrosion.

Practical Recommendations:

- **Environment Assessment**
  Always evaluate the application environment. If the material is exposed to aggressive conditions—such as high chloride levels or elevated temperatures—extra precautions are necessary.

- **Regular Maintenance**
  Keep SS304 surfaces clean and dry to minimize the risk of corrosion. For cleaning the surface, routine wiping and rinsing with soft cloth dampened in fresh water,using mild detergent and rinse thoroughly to ensure no soap residue remains and consider applying a protective coating or passivation treatment. These coatings add an extra barrier between the stainless steel and environmental factors that can lead to corrosion.

- **Material Selection**
  For harsh environments, consider using SS316, which contains molybdenum and offers improved resistance to chloride-induced corrosion.

Type	Solution	Period	Picture
Dust/ Chemical/ Stain/ Acid or Alkaline elements.	Use damp cloth to clean the SS304 surface first, then use a dry cloth to wipe again immediately Clean tough stain with alcohol if required. Finally, clean and polish lightly with WD-40.	Weekly	
Moving parts, motor, shaft, arms, etc	If noise is exceeding acceptable level, apply some lubrication or grease to the moving part and motor.	Quarterly	
Fastener, screw, bolts and controller board	Use a screw driver, wrench, hammers or other tools to fasten screws. Check the controller board and wiring to prevent any risk. CAUTION: Circuit check shall be done by professional technician	Annually	

ACB QMS 05
MS No.: 05 100 20010

***Product performance is based on testing in a controlled environment. Your results may vary due to several external and environment factors.**