

# Elevator Control System

## User Manual

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<b>Product</b>	UDE07XX
<b>Model</b>	
<b>Subsystem name and model</b>	
<b>Module name</b>	

## Revision History

Revision	Initiator	Revision Description	Reviewed by	Approved by	Issue Date
V0.1.1	Fish Yu	Initial version	Eileen Zhou Johny Wu	John Gu	2022-05-13
V0.2.1	Alex Qin	Added FCC Warning Information	Eileen Zhou Johny Wu	John Gu	2022-07-15
V0.3.1	Alex Qin	Deleted Footer of “Excelland Confidential, Do Not Copy or Distribute without Permission”	Eileen Zhou Johny Wu	John Gu	2022-07-28

# Introduction of Elevator Control System

The elevator control system consists of five parts: main control box of elevator control system, floor counting device of elevator control system, floor calibration device of elevator control system, wireless transmitting and receiving device, and key expansion device.

## 1 Control System of Elevator Taken by Robot

Mainly including robot, Cloud network management system, intelligent elevator IoT module

Cloud network management system: It is mainly responsible for remote management of each module. The robot and elevator IoT module should be connected to the cloud network management system for data interaction. In addition to the maintenance of its own operating logic, it receives the status data reported by each module, and issues the corresponding control instructions according to the requirements.

Robot: As the main body to take the elevator, it shall determine whether to take the elevator according to business requirements. In the process of taking the elevator, it interacts with the cloud network management system and the elevator IoT module to complete the operations of calling the elevator and entering and leaving the elevator.

Intelligent elevator IoT module: It communicates with the cloud network management system, Lora module and robot through It is mainly responsible for calling elevator, floor detection, opening and closing the door. When the robot takes the elevator, the intelligent module interacts with the robot and the cloud network management system, reports the elevator status in real time, and coordinates the robot to complete the elevator- riding process.

## 2. Main Control Box of Elevator Control System



The main control box contains two important units:

1. Main control board of elevator control system; 2. Wireless module

#2 RS485\_2 interface: This interface is connected to Interface RFID RS485.

#3 24V power supply interface: Connected to a 24V adapter.

#4 Keyboard extension interface: Connected to the keyboard installed in the cage operation panel through the main control board and keyboard connection line.

#5 Hall interface: Connected to Hall sensor

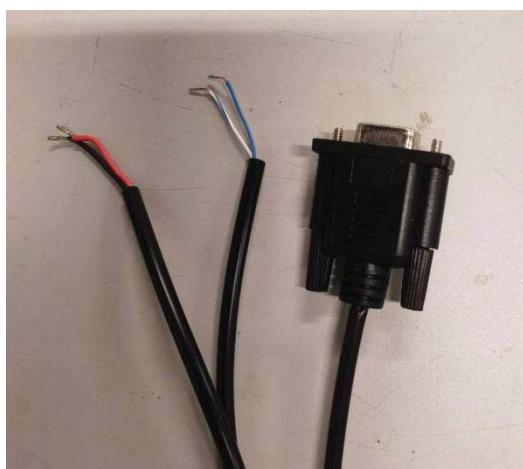
#6 Photoelectric interface: Connected to photoelectric switch

## 3. Floor Counting Device of Elevator Control System

### 3.1 RFID Module



RFID installation instructions: RFID supplies power through red line VCC and black line GND, and communicates through blue line 485a and white line 485b



### 3.1.1 Installation Description of RFID

In order to ensure normal and stable operation of the equipment and your personal and property safety, please carefully read the following notes before installing RFID integrated reader:

1. Please disconnect the power supply before wiring and do not operate with electricity
2. First check whether the outlet is connected to the ground, and check if the local power supply voltage meet reader voltage requirements;
3. Check if the device is connected tightly;
4. Pay attention to the network cable and serial cable type selection and length restrictions;
  - Serial port cable length 5m maximum.
  - RS485 length 80m maximum.
  - Ethernet length 80m maximum.
5. When installing multiple readers, the antenna position and the antenna spacing should be appropriate to avoid interference with each other.
6. Please test & ensure the reader can work normally before using it.

### 3.1.2Horizontal Pole Installation

(1) Align the L-shaped mounting bracket against the screw poles on bottom of reader housing, then install the rubber and screw the M6 nuts, refer to Figure 3-1.

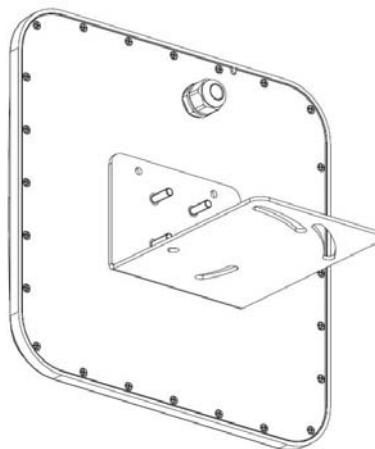


Figure 3-1 L-shaped mounting bracket installation

(2) Using two U-bolts and two toothed installation bracket to fix the reader on vertical rod through the L-bracket, refer to Figure 3-2.

Note: This installation method is suitable for cross bars with a diameter of 30mm ~ 50mm.

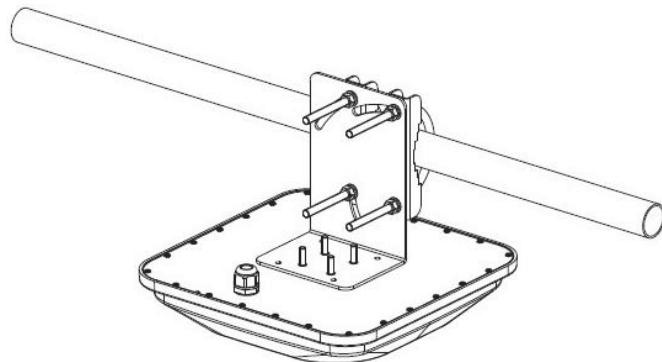


Figure 3-2 Horizontal pole installation

### 3.1.3 Vertical Pole Installation

(1) Align the L-shaped mounting bracket against the screw poles on bottom of reader housing, then install the rubber and screw the M6 nuts, refer to Figure 3-3:

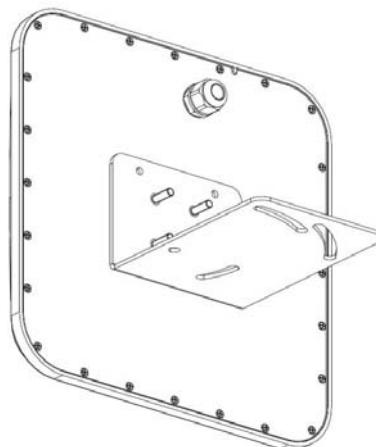


Figure 3-3 L-shaped mounting bracket installation

(2) Using two U-bolts and two toothed installation bracket to fix the reader on vertical rod through the L-bracket, refer to Figure 3-4.

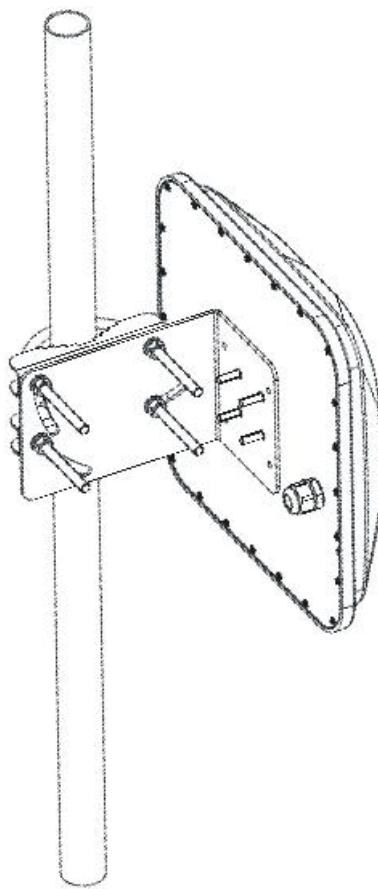


Figure 3-4 Vertical pole installation

## 3.2 Floor Calibration Device of Elevator Control System

### 1. Hall Sensor



### FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

### FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to

radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.