EC10 & EX16 Quick Start Guide
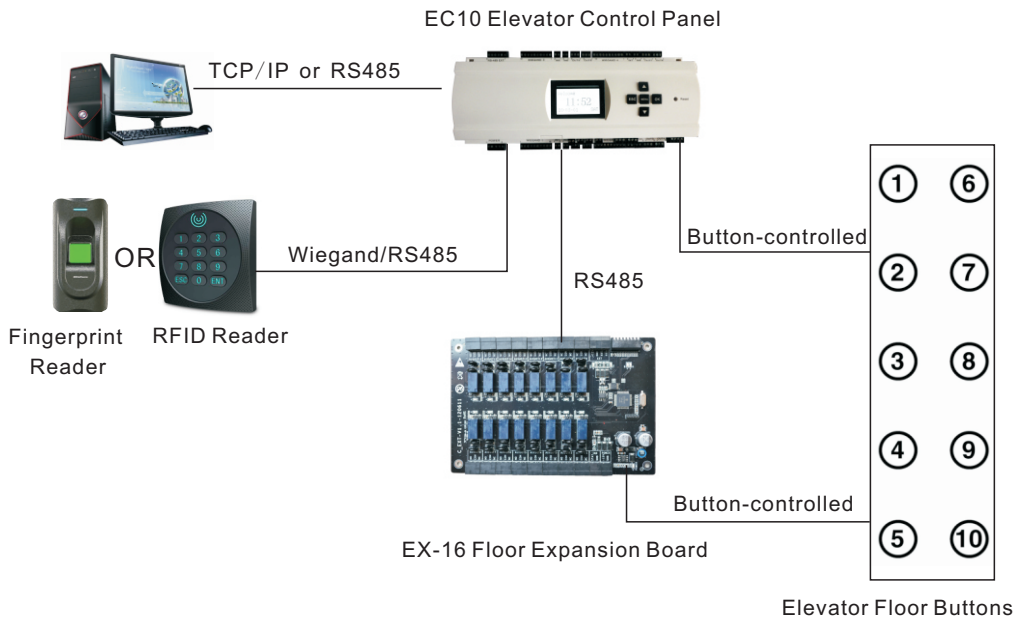
Version：V1. 1   Date：2013. 7

1. Installation Precautions

⚠ Pay attention to the following safety items. Mis-operations may cause human danger or equipment faults:
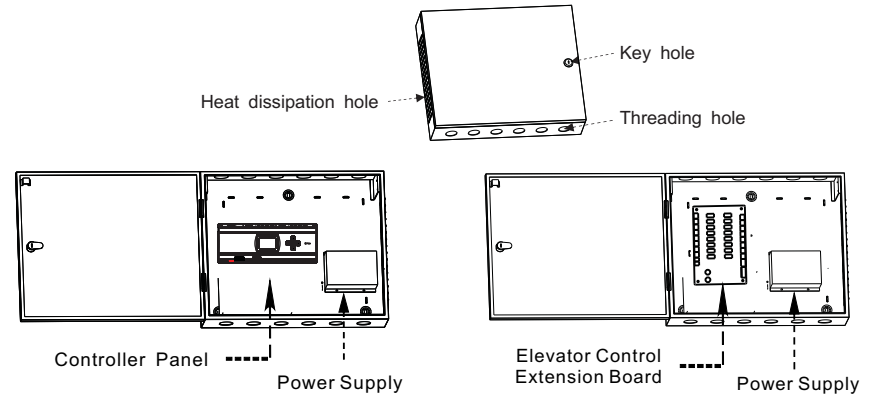
1）Before installation completes, do not power on the equipment or perform operations with electricity.

2）Use dedicated elevator ethernet cable to connect the elevator controller and computer. Use 2pin controller cable for the press button on each floor.

3）Install the card reader with a height of 1.2 to 1.4 meters.

4）Install the elevator main controller and expansion board on the elevator lift car.

5）Install the emergency button in the management center or under the elevator button.
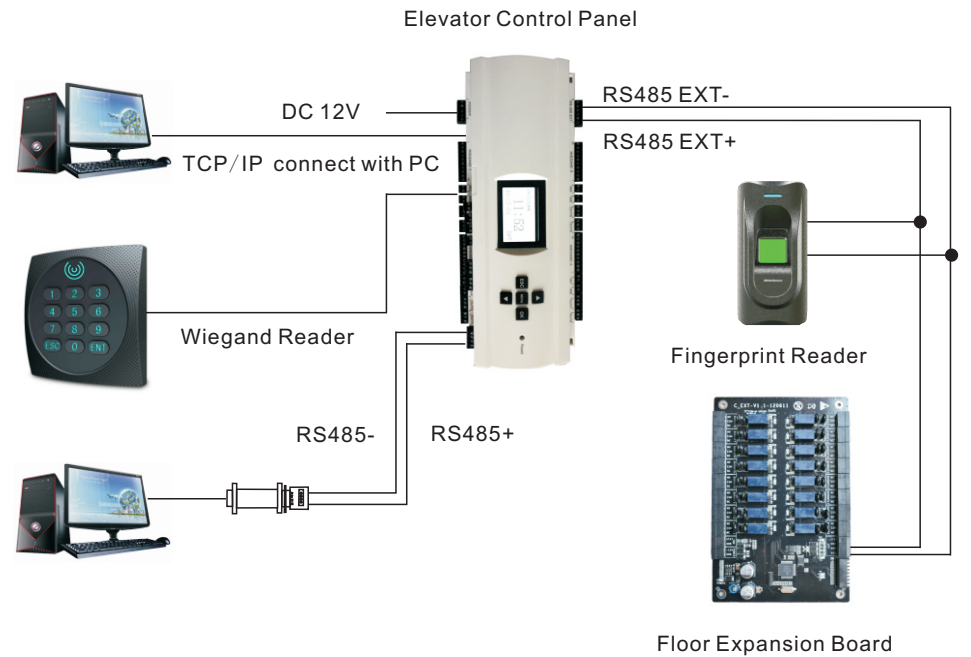
2. System Introductions

The EC10 prevents unauthorized elevator-users from accessing pre-defined restricted floors in the building. The EC10 (Elevator Control panel) controls access up to 10 floors. Also available is the EX16 (Elevator Floor Expansion board) which allows for access control of up to 16 additional floors. A maximum three EX16 boards can be daisy-chained together and collectively control access of up to 58 floors. In order to gain access to a desired floor, authorized users must first present either a valid fingerprint and/or RFID card when entering the elevator. For example, if an authorized user has access rights to only floor ③ and floor ⑩ , the elevator will not move if that same user presses the elevator button for floor ④.
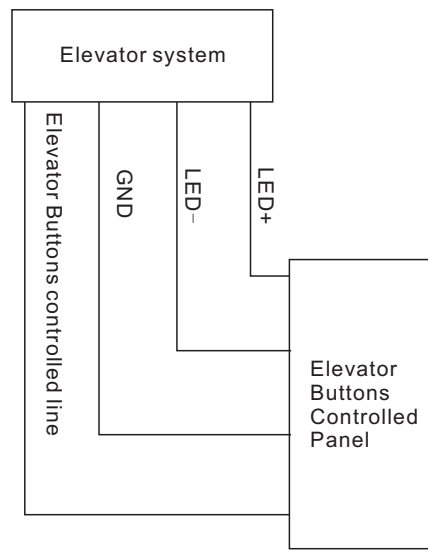
EC10 Elevator Control Panel
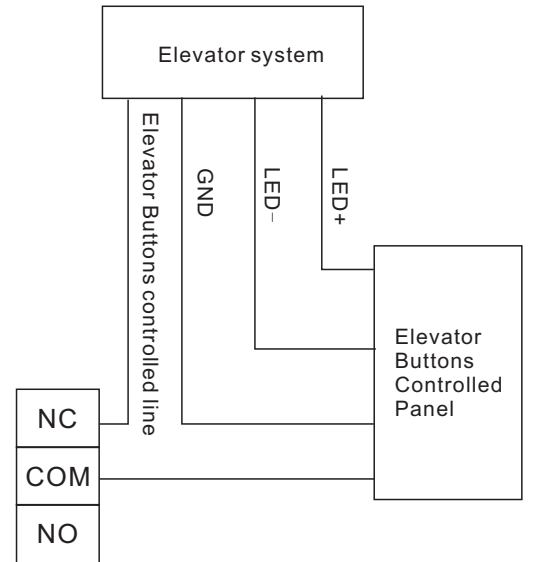
TCP/IP or RS485

OR

Fingerprint Reader

RFID Reader

Wiegand/RS485

RS485

Button-controlled

EX-16 Floor Expansion Board

Button-controlled

① ⑥
② ⑦
③ ⑧
④ ⑨
⑤ ⑩

Elevator Floor Buttons

3. Technical Specifications

EC10Technical Specification

Floor button control relays：10
Card capacity: 30,000
Fingerprint capacity: 3,000
Event capacity: 100,000
Power suply: 12V DC 1A
Communication: TCP/IP, Rs485
Supported floor expansion board： 3pcs

EX16Technical Specification

Floor button control relays：16
Communication to EC10 panel: RS485
Power supply: 12V DC 1A

4. EX 16 DIP Switch Settings

DIP switches 2-4 are used to set each EX16 Floor Extension Board's unique device address using RS485 communication.Please keep the EX16 powered off before setting the device address.Each device address needs to be unique. See example below:

RS485 Device address 2

RS485 Device address 3

RS485 Device address 4

5. Appearance of case

Key hole

Heat dissipation hole

Threading hole

Controller Panel

Power Supply

Elevator Control Extension Board

Power Supply

6. Wiring an Elevator Control System

Elevator Control Panel

DC 12V

RS485 EXT-

TCP/IP connect with PC

RS485 EXT+

Wiegand Reader

Fingerprint Reader

RS485-

RS485+

Floor Expansion Board
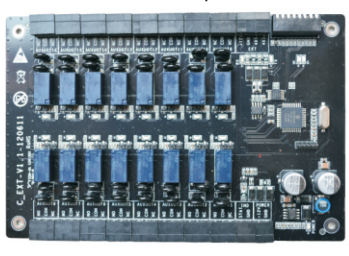
● Typical Elevator Wiring Diagram

Elevator system

Elevator Buttons controlled line

GND

LED−

LED+

Elevator Buttons Controlled Panel

● EC10/EC16 Elevator Wiring Diagram

Elevator system

Elevator Buttons controlled line

GND

LED−

LED+

NC

COM

NO

Elevator Buttons Controlled Panel

7. EX16 Elevator Wiring Diagram

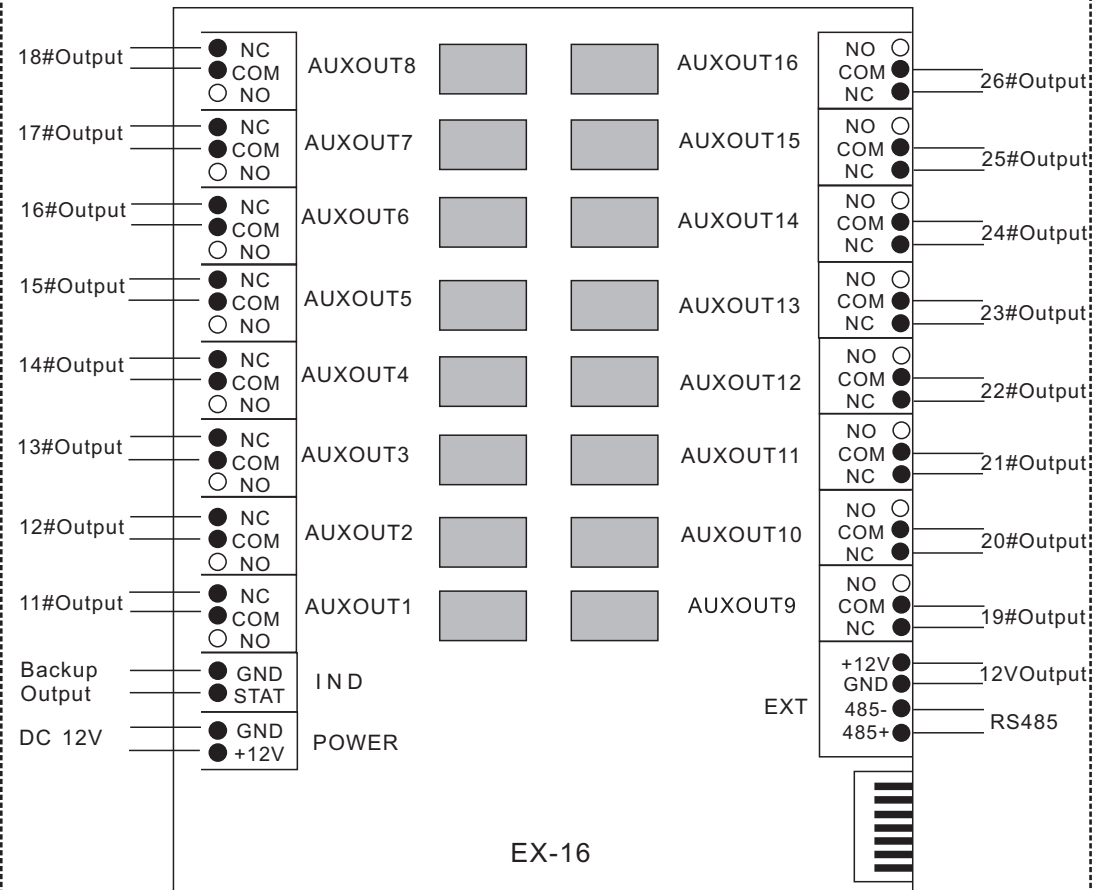|				
18#Output	NC / COM / NO	AUXOUT8	AUXOUT16	NO / COM / NC — 26#Output
17#Output	NC / COM / NO	AUXOUT7	AUXOUT15	NO / COM / NC — 25#Output
16#Output	NC / COM / NO	AUXOUT6	AUXOUT14	NO / COM / NC — 24#Output
15#Output	NC / COM / NO	AUXOUT5	AUXOUT13	NO / COM / NC — 23#Output
14#Output	NC / COM / NO	AUXOUT4	AUXOUT12	NO / COM / NC — 22#Output
13#Output	NC / COM / NO	AUXOUT3	AUXOUT11	NO / COM / NC — 21#Output
12#Output	NC / COM / NO	AUXOUT2	AUXOUT10	NO / COM / NC — 20#Output
11#Output	NC / COM / NO	AUXOUT1	AUXOUT9	NO / COM / NC — 19#Output
Backup Output	GND / STAT	IND	+12V / GND / 485- / 485+	12VOutput / RS485
DC 12V	GND / +12V	POWER	EXT	

EX-16

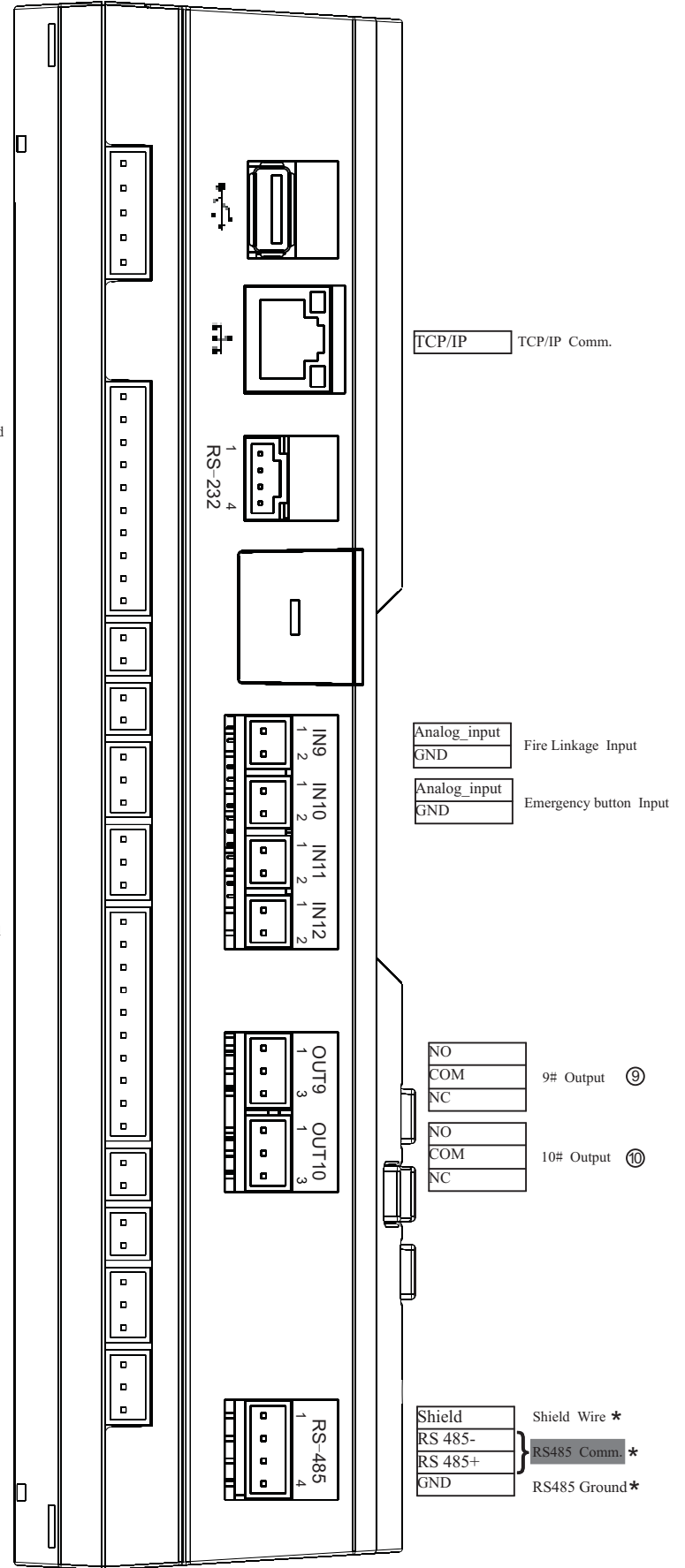**Notes:**

1) The backup input is reserved for the elevator control system.

2) Fire linkage and emergency button function require no software settings. These functions are available when the hardware is installed.

3) GPRS, WIFI and functions marked by * are optional. If these functions are required, contact our business representatives or pre-sale technical support.

4)〞#〞indicates floor,〞1# output〞indicates that it is connected to the first floor button, the first expansion board is connected to the 11th floor button.

Front View

Label	Terminal
12V Power Input	+12V
	GND
Shield Wire	Shield
★ AC Fail Detection	AC Fail
★ Battery Fail Detection	Battery Fail

POWER 1~5

12V Power Output	VCC 12V
	GND
Wiegand Input	D0
	D1
Shield Wire	Shield
Output Green	LED_G
Red	LED_R
Beep	BEEP
★ Controlled Reader Hold	Hold
★ Card Present	Card_present

WIEGAND 1 (1~10)

IN1, IN2 (1,2)
OUT1, OUT2 (1,2,3)

| ① 1# Output | NO / COM / NC |
| ② 2# Output | NO / COM / NC |

12V Power Output	VCC 12V
	GND
Wiegand Input	D0
	D1
Shield Wire	Shield
Output Green	LED_G
Red	LED_R
Beep	BEEP
★ Controlled Reader Hold	Hold
★ Card Present	Card_present

WIEGAND 2 (1~10)

IN3, IN4 (1,2)
OUT3, OUT4 (1,2,3)

| ③ 3# Output | NO / COM / NC |
| ④ 4# Output | NO / COM / NC |

ESC   MENU   ◄ ►   OK   ○ Reset

RS-485 EXT 1~6

Data_Tx-	
Data_Tx+	★RS 422 Send
GND	
Data_RxTx-	★ Extension Board
Data_RxTx+	★ or RS485 Reader
Shield	Shield Wire★

WIEGAND 3 (1~10)

Card_present	★Card Present
Hold	★Controlled Reader Hold
BEEP	Beep
LED_R	Red } Output
LED_G	Green
Shield	Shield Wire
D1	
D0	} Wiegand Input
GND	
VCC 12V	12V Power Output

IN5, IN6 (1,2)
OUT5, OUT6 (1,2,3)

| NC / COM / NO | 5# Output ⑤ |
| NC / COM / NO | 6# Output ⑥ |

WIEGAND 4 (1~10)

Card_present	★Card Present
Hold	★Controlled Reader Hold
BEEP	Beep
LED_R	Red } Output
LED_G	Green
Shield	Shield Wire
D1	
D0	} Wiegand Input
GND	
VCC 12V	12V Power Out

IN7, IN8 (1,2)
OUT7, OUT8 (1,2,3)

| NC / COM / NO | 7# Output ⑦ |
| NC / COM / NO | 8# Output ⑧ |

Front Side View

TCP/IP   TCP/IP Comm.

RS-232 1~4

IN9, IN10, IN11, IN12 (1,2)

| Analog_input / GND | Fire Linkage Input |
| Analog_input / GND | Emergency button Input |

OUT9, OUT10 (1,2,3)

| NO / COM / NC | 9# Output ⑨ |
| NO / COM / NC | 10# Output ⑩ |

RS-485 1~4

Shield	Shield Wire ★
RS 485-	RS485 Comm. ★
RS 485+	
GND	RS485 Ground ★

Notice:

1. Open the elevator press button panel when connecting to the elevator button. Ask the supplier to provide the floor button control circuit. If the supplier can not provide the circuit, exclude the incorrect circuit one by one and ensure the correct connections.

2. EC10 connects to the computer using TCP/IP or RS485.

3. EC10 supports ZK fingerprint readers (model FR1200) and RFID card readers (model KR series).

4. EC10 controls access up to 10 floors, EX16 controls access up to 16 floors. An EC10 carries a maximum of 3 expansion boards. Total 58 floors can be controlled when combining EC10 with EX16.

5. The RS485 device address of the fingerprint reader (model FR1200) must be 1. The RS485 device address of the EX16 floor extension board must start from 2.

6. Wiegand reader can connect to the elevator main controller Wiegand 1#~ 4#.

7. IN9 functions as fire linkage signal input. When fire linkage signal works, elevator control system stops working and the elevator retains to original status. (Fire linkage must be passive dry contact signal)

8. IN10 functions as an emergency button. When it is pressed, the whole elevator is not controlled by elevator controller. At this moment, up and down buttons are available. When the emergency button is not pressed, the elevator retains to the original status.

9. ①~⑩ Output terminals connect to floor press button.