

QUICK START GUIDE

Elevator Control Panel & Elevator Floor Expansion Board

Applicable Model: EC16 & DEX16

Version: 1.1 Date: August 2023

Please note the following cautions. Mis-operation may lead to personal injury or equipment failure:

- 1) Do not operate with electricity. Do not energize until installation is complete. Make sure the wiring is correct before energizing.
- 2) All peripheral devices must be grounded.
- 3) It is recommended that all wiring be sleeved, either with PVC pipe or galvanized pipe.
- 4) The exposed part of the wiring terminal should not exceed 0.16 inches (4mm) to prevent accidental contact caused by long bare wires, which may lead to short circuit and other faults.
- 5) The main controller and expansion board of the elevator are installed on the top of the elevator car.
- It is preferable to install readers and buttons at the height of 55 inches to 59 inches (1.4m to 1.5m) above the ground or subject to customers' usual practice for proper adjustment.
- 7) Please use the matching power supply accessories provided by the equipment manufacturer to supply power to the elevator controller, or use the power supply consistent with the equipment power supply information.

Other Notes:

- RESET button: Long press 1 to 5 seconds for U disk upgrade; 5 to 10 seconds to restart the controller; 10 seconds or more to restore the factory settings. When restoring the factory settings, only the network configuration of the device is restored, other data is not restored.
- Dual Ethernet interfaces: The default IP address 192.168.1.201 for the primary NIC and 192.168.2.202 for the expansion NIC.

LED Indicators

After connecting the main controller correctly, turn on the system power, the LED indicators in normal condition is described as follows.

1. LED indicators on the Enclosure

PWR indicator (red):

Solid Red LED indicates normal energization.

COMM indicator (yellow):

Slowly flashing Yellow LED indicates data communication is in progress.

RUN indicator (green):

Slowly flashing Green LED indicates normal working status of the system.

2. LED indicators on the Elevator master controller panel

POWER indicator (red):

Solid Red LED indicates normal energization.

RUN indicator (green):

Slowly flashing Green LED indicates normal working status of the system.

COMM indicator (yellow):

Slowly flashing Yellow LED indicates data communication is in progress.

The elevator controller system is composed of the following equipments.



EC16 Master Control Panel

9.1*6.5inch (230*165mm)

DEX16 Expansion Board

5.2*6.5inch (132*165mm)

No.	Description	No.	Description		
0	Floor Button Control Port	₿	FIRE		
2	Extend Port	4	Emergency Button		
8	Wiegand	6	Manual Button		
4	RS-485	6	Power Input		
6	LED Indicator	Ø	Ethernet Interface (LAN1)		
6	Elevator Door Closing Button*	18	TCP/IP Reader Interface (LAN2)*		
0	Elevator Door Opening Button*	Ø	U Disk Interface		
8	Alarm Output	20	Reset Button		
9	Speaker*	2)	Floor Button Control Port		
0	Voice*	2	DIP Switch		
0	LED Indicator Port	23	RS-485 Input		
Ø	Tamper Switch Port	24	RS-485 Output		

* Hardware reservation function is currently not supported.

System Installation Diagram



Use the software setup after connecting the DEX16 module to the EC16 master controller.



Notes:

- 1. A maximum of seven DEX16 expansion boards can be connected to one EC16 controller.
- 2. The total can be expanded to 128 layers at most.
- Before power is supplied, use the DIP switch to set the RS-485 addresses of the DEX16s, following the order in which each DEX16 is connected.
- 4. The DIP switch needs to be set with the control board powered off and takes effect after restart. After setting, the DIP switch does not need to be set back to its original position.

Elevator Button Connection



Elevator button wiring



Instruction:

Connect Signal Cable 1 to the NO terminal of the corresponding floor. After Signal Cable 2 is disconnected, COM and NC terminals are connected to the COM and NC terminals of the corresponding floor respectively.

Wiring for swipe to select floor and direct floor selection





Original Elevator Button Connection

Elevator Button Connection for Elevator Control

Instruction: S1/S2 switches are two relays (S1 relay is normally closed and S2 relay is normally open) of the elevator control board respectively. S1 is disconnected after power on, and S1 is closed after swiping the layer selection card, then the elevator button can be lit by pressing; S2 is closed after swiping the direct access card, then the elevator button will be lit automatically.

RS-485 readers and Wiegand readers need to be connected with the master elevator controller in order to make relevant settings through the ZKBio CVSecurity Software. The system sends the personnel information to the master controller through the software, and reader then uploads the data to the master controller for comparison and verification after collection. The following is the wiring diagram of various readers and elevator controller.



Multiple readers are connected to the controller

Note:

- 1. The readers can be connected to the elevator controller via Wiegand and RS-485.
- 2. Open DEMO, select the serial port number, the default baud rate is 115200, click "Connect" and "Scan Address" and then put the card or QR code (paper, electronic, mobile phone) into the recognition range of the card reader, and read the card. The device automatically obtains and transmits the information carried by the card or QR code to the controller.
- 3. Each EC16 can connect a maximum of two RS-485 readers or two Wiegand readers.

Connect to ZKBio CVSecurity

1. Add the elevator control device on the software

Login to the software and add the device by searching. The process is as follows:

- 1) Click Elevator > Elevator Device > Device to enter the device setting interface.
- 2) Click Search to open the Search interface in the software.
- 3) Click Search to search the elevator controller. After searching, a list of controllers will be displayed.



- 4) Click Add after the controller in the operation bar to add the device.
- 5) After setting the relevant parameters, click **OK** to finish adding the elevator controller.
- 6) Click Close to close the Device Search Add interface.

2. Register users and send to the elevator control device

- 1) Click Personnel > Person > New to register users in the software.
- 2) Add users to elevator control level.
- Click Elevator > Device > Control > Synchronize All Data to Devices to synchronize all data to the controller, including new users. As shown in the figure below.

Device 1	Device Name	Device Model	IP Address	More * Q Q
Expanding Board	O Refresh 🕁 New	∎ Delete ⊥ Export Q Search	🙂 Control 🔹 🐵 Set up 👻 B	® View / Get ∽
Reader	Device Name	Serial Number Area Name	✓ Enable	Device Model : Device : Firmware Version : Operations
Auxiliary Input	10.8.14.93	6013143400001 Area Name	O Disable	EC18 Online AC Ver 7.0.2-INDPK-0 🖉 🗃
Event Type	2		© Rebool device	
Device Monitoring			@ Synchronize Time	
Real-Time Monitoring			G Synchronize All Data to Devices	18

3. Assign elevator control levels group

- 1) Click Elevator > Elevator Control Rule > Elevator Levels to enter the setting interface.
- 2) Click **New** to add a new elevator control level group.
- 3) Enter the level name, time zones and setting area, then click **OK** to confirm and exit.

TKBio CVSecurity	::: ¥					
Elevator Device >	Elevator / Eleva	tor Control Rule / Eleva	ator Levels			
Elevator Control Rule 🗸	Elevator Levels			<		
Time Zones	Level Name		Time Zones	Q &		
Holidays	⊖ Refresh	Z I Delete				
Elevator Levels	Level Name Area Na Time Zo Floor C Operati					
Set Access By Levels	41		New	×		
Set Access By Person		Level Name*	1			
Set Access By Department	«	Time Zones*	24-Hour Accessible 🔻			
Direct Selection Set	J	Area*	Area Name 🔻			
Global Linkage		6		_		
Parameters		OK	Cancel			

- 4) After adding successfully, check the levels group.
- 5) Click 🖄 Add Floor icon to add the selected floor to the levels group.
- 6) The added floors will be displayed in the **Floor** list on the right.

1	TXKBio CVSecurity III #														
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8	Elevator Control Rule 🗸 🗸	1	Elevator	Levels							٢	Floor			
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	Holidays		OR	efresh	±+ New	自 Delete						OR	efresh	直 Delete Floor	
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	Set Access By Person			1	А	rea Name	24-Hour Ac	4	2 2				2		10.8.14.93(2)
	Set Access By Department	«	4						6	Add Fl	loor		3		10.8.14.93(3)
	Global Linkage		-										-1		10.8.14.93(-1)
	Parameters													6	
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4. Setting of Elevator Control Authority Allocation

Authority allocation is used to manage the elevator control authority of personnel. Only after the authority allocation can personnel normally verify the operation of entering and leaving the elevator. Permission assignment supports three methods: **setting access by levels, setting access by person,** and **setting access by department**.

a. Set Access By Levels

- 1) Click **Elevator** > **Elevator Control Rule** > **Set Access By Levels** to enter the setting interface.
- 2) Check the levels group and click the & Add Personnel icon in its bar to open the settings window.
- 3) Select the person and then click > to move it to the selected column on the right.
- 4) Click **OK** to confirm and exit.

	Elevator Device >	Elevator / Elevator Control Rule / Set Access By Levels						
8	Elevator Control Rule 🗸	Elevator Levels c Browse Personnel 1 (Area Name) From Levels						
	Time Zones	Level Name Time Zones Q Q Personnel ID More * Q Q						
	Holidays	Refresh O Refresh Delete Personnel						
	Elevator Levels	2 Level Name Area Na. Time Zo. Personne. Operations Personnel ID First Name Last Name Card Number Department						
	Set Access By Levels	1 Area Name 24-Hour Ac 0 8 2						
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		Canoel						

b. Set Access By Person

- 1) Click Elevator > Elevator Control Rule > Set Access By Person to enter the setting interface.
- 2) Check the levels group and click the **Add to Levels** icon in its bar to open the settings window.
- 3) Select the levels group and then click ≥ to move it to the selected column on the right.
- 4) Click **OK** to confirm and exit.

Time Zones	Personnel ID Name More * Q Q	vel Name Time Zones Q Q
Holidays	ORefresh B Elevator Control Setting	Refresh 🝵 Delete From Levels
Elevator Levels	2 Personne First Na Last Na Card Num Department Operations	Level Name Area Name Time Zones
Set Access By Levels	21 JTTY LTe Department Name 🛱 2	
Set Access By Person	Add to Levels	×
Set Access By Department		
Direct Selection Set	Level Name Time Zones Q Q	
Global Linkage e	Alternative Selected(1)	
Parameters	Level Name Time Zones Level Name Time	e Zones
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c. Set Access By Department

- 1) Click Elevator > Elevator Control Rule > Set Access By Department to enter the setting interface.
- Check the department and click the Add to Default Levels icon in its bar to open the settings window.
- 3) Select the levels group and then click > to move it to the selected column on the right.
- 4) Click OK to confirm and exit.

EB	Elevator Device	>	Elevator / Elevator Control Rule / Set Access By Department		
181	Elevator Control Rule	~	Edit Default Levels For Department	Browse Department 1 (Department Name) Defail	ult Leve
	Time Zones		Department Number Department Name	2 Level Name Time Zones	
	Holidays		O Refresh	O Refresh 🛛 📋 Delete From Default Levels	
	Elevator Levels		Z Department N Department Name Parent Departm Operation	itions 📃 Level Name Area Name	Time 2
	Set Access By Levels	(Department Name	2	
	Set Access By Person		Add to Default Leve	wis X	
			1		
	Direct Selection Set		Level Name Time Zones C	2 @	
	Global Linkage		Alternation	Palastad(1)	
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			41 24-Hour Accessible	1 24-Hour Accessible	~
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5. Add Expanding Board

Make sure to power off the device and connect the expansion board correctly, then set the RS485 address of the expansion board with the DIP switch and restart the device.

- 1) Click Elevator > Elevator Device > Expanding Board to enter the setting interface.
- 2) Click **New** to add a expanding board.
- 3) Set the relevant parameters and then click OK to confirm and exit.



Electrical Specifications

EC16 Master Control Panel

Power				
Main Power Supply	12VDC \pm 20%, maximum current 600mA (without reader and expansion board)			
Wiegand Reader	12VDC \pm 20%, maximum output current 350mA			
RS-485 Reader	12VDC \pm 20%, maximum output current 750mA			
Output				
Auxiliary Relay Output	Contact load: 1A / 24VDC Note: When connecting to the elevator button, the maximum allowable voltage is 24V.			
Input				
FIRE				
Emergency				
Manual	Maximum allowable input voltage 15V			
TAMPER				
Wiegand Reader TAMPER				

DEX16 Expansion Board

Power				
Main Power Supply	12VDC \pm 20%, maximum current 350mA			
Output				
Auxiliary Relay Output	Contact load: 1A / 24VDC Note: When connecting to the elevator button, the maximum allowable voltage is 24V.			

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