



## MCTC-HCB-T647/S Multimedia Display User Guide



Industrial  
Automation



Intelligent  
Elevator



New Energy  
Vehicle



Industrial  
Robot



Rail  
Transit



Data code P500017941A00

# Preface

## Introduction

The product is a multimedia display used inside the elevator car, with primary functions designed for passenger convenience. Passengers can operate the elevator through this interface, such as selecting their destination floor, and can also control the door open/close. Additionally, it displays information related to the elevator operation status, including but not limited to the current floor number and the direction of travel. This guide describes the basic information, installation, commissioning, and troubleshooting of the product.

## Note

- The drawings in the user guide are shown for illustration only and may be different from the product. Actual products may vary.
- The user guide is subject to change due to product upgrade, specification modification as well as efforts to the accuracy and convenience of the guide.

## Revision History

Date	Version	Change description
December 2024	A00	First release

## Access to the Guide

This guide is not in the scope of delivery. If necessary, you can download the PDF file in the following ways:

- Visit [www.inovance.com](http://www.inovance.com), click Download under Support and enter a keyword to search.
- Scan the QR code on the product with your smartphone.
- Scan the QR code below to install the application, where you can search for and download the guide.



## Warranty Disclaimer

If your product becomes defective under normal use conditions, we will offer guaranteed repair services within the warranty period. You need to pay charges beyond the warranty listed in the purchase order.

The warranty does not cover any defect caused by:

- your failure to operate the product in accordance with the user guide
- events beyond our reasonable control, such as fire, flood and abnormal voltage
- function misuse
- out-of-range application
- other events of force majeure, including but not limited to lightning, earthquake and other extreme weather events

The maintenance fee is charged according to the latest Price List of Inovance. If otherwise agreed upon, the agreed terms and conditions shall prevail.

For details, see Product Warranty Card.

# Table of Contents

Preface .....	1
Safety Instructions .....	5
1 Product Information .....	7
1.1 Technical Specifications .....	7
1.2 Product Dimensions .....	7
1.3 Appearance .....	8
1.4 System Connection .....	9
2 Preparations Before Installation .....	10
2.1 Installation Personnel Requirements .....	10
2.2 Installation Environment Requirements .....	10
2.3 Installation Tools Requirements .....	10
3 Unpacking and Handling .....	12
4 Installation Guide .....	13
4.1 Port Layout and Description .....	13
4.1.1 Serial Port Layout and Description .....	13
4.1.2 Parallel Port Layout and Description .....	15
4.2 Installation Procedures .....	16
4.2.1 Through-hole Mounting .....	16
4.2.2 Surface Mounting .....	17
5 Commissioning and Operation .....	20
5.1 Electrical Wiring Inspection .....	20
5.2 Function Commissioning .....	20
5.2.1 Serial Port Function Commissioning .....	22
5.2.2 Parallel Port Function Commissioning .....	25
6 Theme Change .....	28
6.1 Change with a Computer .....	28
6.1.1 Background Theme Change .....	28
6.1.2 Ad Image, Logo or Welcome Message Change .....	29
6.1.3 Background Music Change .....	30
6.2 Change with a USB Flash Drive .....	30
6.2.1 Background Theme Change .....	30
6.2.2 Ad Image, Logo or Welcome Message Change .....	31
6.2.3 Background Music Change .....	32
7 Interface Upgrade .....	33
7.1 Upgrade with a Computer .....	33

7.2 Upgrade with a USB Flash Drive .....	33
8 Maintenance .....	35
8.1 Daily Maintenance Items .....	35
8.2 Daily Inspection and Cleaning Items.....	35
8.3 Battery Replacement .....	35
9 Common Fault Troubleshooting .....	37
10 Appendix .....	39

# Safety Instructions

## Safety Disclaimer

1. Read and follow the safety precautions before installing, using, and maintaining the product.
2. To ensure the safety of humans and equipment, follow the signs on the product and all the safety instructions in this guide.
3. "CAUTION", "WARNING", and "DANGER" items in this guide do not indicate all safety precautions that need to be followed; instead, they just supplement the safety precautions.
4. Use this product according to the designated environmental requirements. Functional abnormalities or component damages caused by improper usage are not covered by warranty.
5. Inovance shall take no responsibility for any personal injuries or property damage caused by improper usage.

## Safety Levels and Definitions



Indicates that failure to comply with the notice will result in death or severe personal injuries.



Indicates that failure to comply with the notice may result in death or severe personal injuries.



Indicates that failure to comply with the notice may result in minor personal injuries or damage to the equipment. Keep the guide properly for future reference and deliver it to the end user.

<b>Wiring</b>	
	<ul style="list-style-type: none"> <li>• Ensure that all power sources are disconnected before performing installation and wiring operations; avoid working on live circuits or plugging/unplugging cables to prevent electric shock or circuit damage.</li> <li>• Connect the wiring for the DC power supply to the dedicated terminals as described in the guide.</li> <li>• When drilling screw holes and wiring, ensure no metal shavings or wire clippings fall into the product to avoid malfunction, electronic component damage, or fire.</li> <li>• After completing the wiring, carefully check to ensure the operating voltage and terminal positions are correct to avoid fire or accidents.</li> </ul>
	<ul style="list-style-type: none"> <li>• To avoid electric shock, disconnect the power source before connecting the power to this product.</li> <li>• The input power for this product is 24 VDC. If the supplied power is not within 24 VDC <math>\pm 20\%</math>, it can cause severe damage. Therefore, regularly check whether the DC power from the switched-mode power supply is stable.</li> </ul>

### Operation and Maintenance



- During use, take care to protect the display panel; perform touch operations with your hand instead of tools to avoid damage. Users are responsible for any damage caused by excessive force exerted.
- Lithium batteries, display screens, capacitors, and other components may contain substances harmful to health and the environment. Treat the product as industrial waste.

### Battery Use



- Avoid replacing the battery with an incorrect type.
- Do not dispose of the battery in fire or heat sources, do not mechanically crush or cut batteries.
- Do not expose the battery to extreme temperatures.
- Do not swallow the battery as it poses a chemical burn hazard.
- This product contains a button battery. If swallowed accidentally, it can cause severe internal burns within 2 hours and may lead to death.



- Keep new and used batteries away from children.
- If the battery compartment is not securely closed, stop using the product and keep it away from children.
- Seek immediate medical attention if you suspect battery ingestion occurs.

### Disposal



- Dispose of the product according to industrial waste regulations; when disposing of batteries, follow local ordinances separately.

# 1 Product Information

## 1.1 Technical Specifications

Parameter	Description
Screen size	7 inches
Resolution	800 px x 480 px
Product view directions	θL-θR-θT-θB
	70-70-50-70
LCD brightness	320 cd/m <sup>2</sup>
Display area	154.7 mm (W) x 86.5 mm (H)
LCD type	RGB
Power supply voltage	18 VDC to 36 VDC
Rated/Maximum power consumption	5 W/6 W
Rated/Maximum current (24 A)	200 mA/250 mA
Nominal capacity	<ul style="list-style-type: none"> <li>• Drive 1: 10 MB</li> <li>• Drive 2: 120 MB</li> </ul>
Operating environment	<ul style="list-style-type: none"> <li>• Temperature: -20°C to +70°C</li> <li>• Humidity: 10% RH to 90% RH</li> </ul>
Storage environment	<ul style="list-style-type: none"> <li>• Temperature: -30°C to +80°C</li> <li>• Humidity: 10% RH to 90% RH</li> </ul>

## 1.2 Product Dimensions

The displays come in surface-mounting and through-hole mounting types, with slightly different appearances (refer to the actual product), but have consistent dimensions. The following dimensions are for the through-hole mounting type as an example.

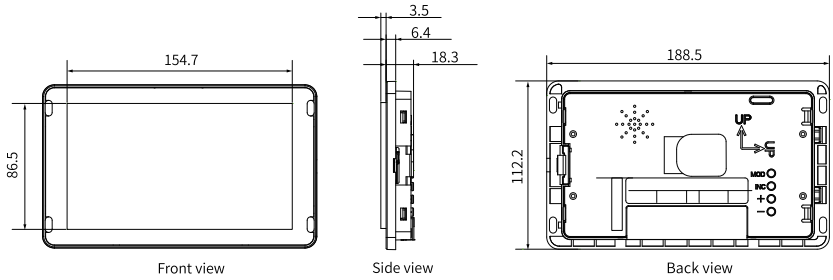


Figure 1-1 Product dimensions (unit: mm)

### 1.3 Appearance

The displays come in surface-mounting and through-hole mounting types, with slightly different appearances (refer to the actual product). The following part takes the through-hole mounting type as an example.



Figure 1-2 Appearance

## 1.4 System Connection

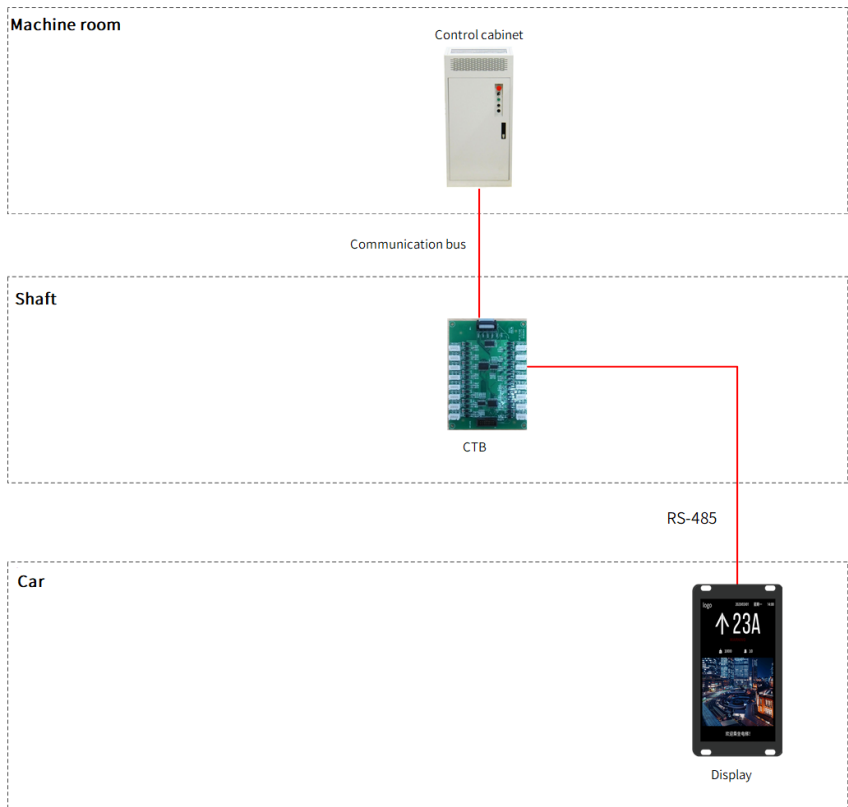


Figure 1-3 System Connection

## 2 Preparations Before Installation

### 2.1 Installation Personnel Requirements

- Installation must be performed by only experienced personnel who have been trained with necessary electrical information.
- Read and comply with the safety information provided this manual.



Inovance is not responsible for equipment damage and casualties due to failure to comply with the safety instructions or operation by unqualified personnel.

### 2.2 Installation Environment Requirements

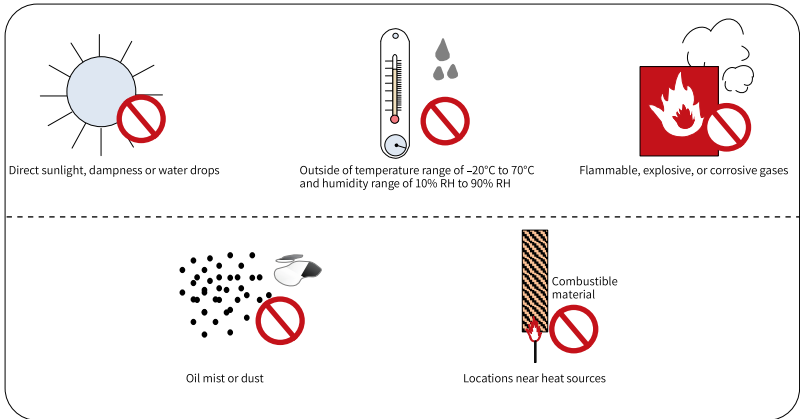


Figure 2-1 Installation environment requirements

### 2.3 Installation Tools Requirements

Prepare tools and materials before installation. The following tools are not included in the delivery and are to be ordered separately.

Table 2-1 Installation tools

Tool	Description
Gloves	Prevents static electricity during mechanical installation.
Four M3 flange nuts	Fixes the product to the mounting surface.

Tool	Description
5.5 mm open-end wrench or sleeve	Tightens the screws.
Four weld screws	Secure the screws and mounting surface connection through welding.

### 3 Unpacking and Handling

Upon unpacking, check:

No.	Item	Description	Tick
1	Whether the delivered product is consistent with your order	Check the model and specifications of the display for consistency with the order.	<input type="checkbox"/>
2	Whether the product is damaged	Check whether the product enclosure is damaged during transportation. If there is any part missing or damaged, contact Inovance or your supplier immediately.	<input type="checkbox"/>

## 4 Installation Guide

### 4.1 Port Layout and Description

The displays come in serial port and parallel port types according to different interfaces.

For serial port types, see ["4.1.1 Serial Port Layout and Description" on page 13](#); for parallel port types, see ["4.1.2 Parallel Port Layout and Description" on page 15](#).

#### 4.1.1 Serial Port Layout and Description

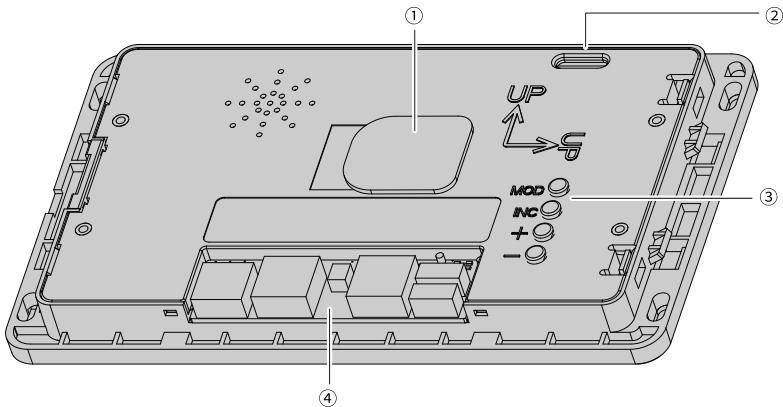


Figure 4-1 Port layout

Table 4-1 Port description (serial port)

No.	Port	Description
①	Battery	Button battery; see <a href="#">"8.3 Battery Replacement" on page 35</a> for replacement instructions.
②	Programming port	Performs programming or update on the display programs.

No.	Port	Description
③	MOD	<ul style="list-style-type: none"> <li>● Enters the settings menu interface</li> <li>● Enters the next-level menu</li> <li>● Enters the menu editing mode</li> </ul>
	INC	<ul style="list-style-type: none"> <li>● Exits the settings menu interface</li> <li>● Returns to the previous-level menu</li> <li>● Exits the menu editing mode</li> </ul>
	+	<ul style="list-style-type: none"> <li>● Moves up through menu items</li> <li>● Increases the value of a menu item (holding down increases speed)</li> </ul>
	-	<ul style="list-style-type: none"> <li>● Moves down through menu items</li> <li>● Decreases the value of a menu item (holding down increases speed)</li> </ul>
④	USB	Updates device resources.
	Elevator lock and fire emergency (optional)	ST, 24OUT, 24OUT, XF
	Up button (optional)	Connects the up button. ST, 24OUT, U-IN, UP
	Down button (optional)	Connects the down button. ST, 24OUT, DN-IN, DN
	DIP switch	Enables or disables the termination resistor. <ul style="list-style-type: none"> <li>● 1: Termination resistor CAN</li> <li>● 2: Termination resistor RS485</li> </ul>
	CAN (optional)	CAN serial communication. 24V, CANH, CANL, GND
	RS485	RS485 serial communication. 24V, MOD+, MOD-, GND
	RS232	RS232 serial communication. 24V, TX, RX, GND

## 4.1.2 Parallel Port Layout and Description

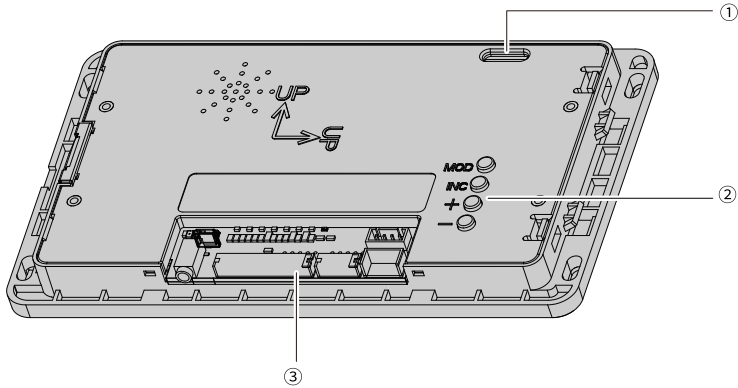


Figure 4-2 Port layout

Table 4-2 Port description (parallel port)

No.	Port	Description
①	Programming port	Performs programming or update on the display programs.
②	MOD	<ul style="list-style-type: none"> <li>• Enters the settings menu interface</li> <li>• Enters the next-level menu</li> <li>• Enters the menu editing mode</li> </ul>
	INC	<ul style="list-style-type: none"> <li>• Exits the settings menu interface</li> <li>• Returns to the previous-level menu</li> <li>• Exits the menu editing mode</li> </ul>
	+	<ul style="list-style-type: none"> <li>• Moves up through menu items</li> <li>• Increases the value of a menu item (holding down increases speed)</li> </ul>
	-	<ul style="list-style-type: none"> <li>• Moves down through menu items</li> <li>• Decreases the value of a menu item (holding down increases speed)</li> </ul>
③	Micro USB	Updates device resources.
	J1	Parallel port communication. A, b, c, d, E, F, G, H, 2A, 2B, 2C, 2D, 2E, 2F, 2G
	J3	Power supply connection. I, H, DN, UP, GND, 24V
	RS232	RS232 serial communication. 24V, TX, RX, GND

## 4.2 Installation Procedures

The displays come in surface-mounting and through-hole mounting types.

### 4.2.1 Through-hole Mounting

1. Cut out a square area on the car backplate and install weld screws according to the hole positions.

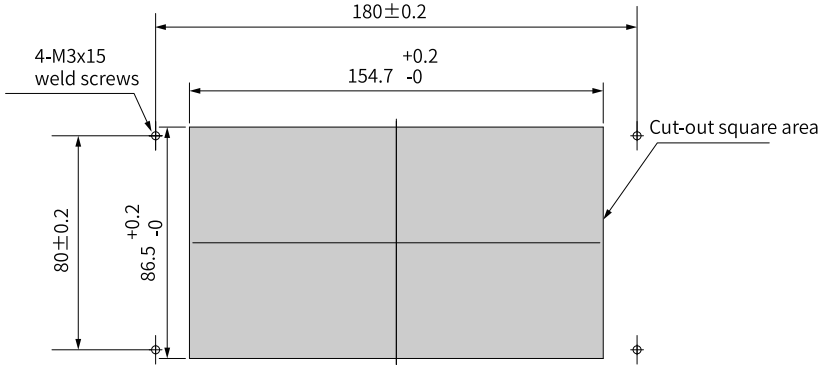


Figure 4-3 Hole dimensions (unit: mm)

2. Secure the display to the backplate with four M3 flange nuts.

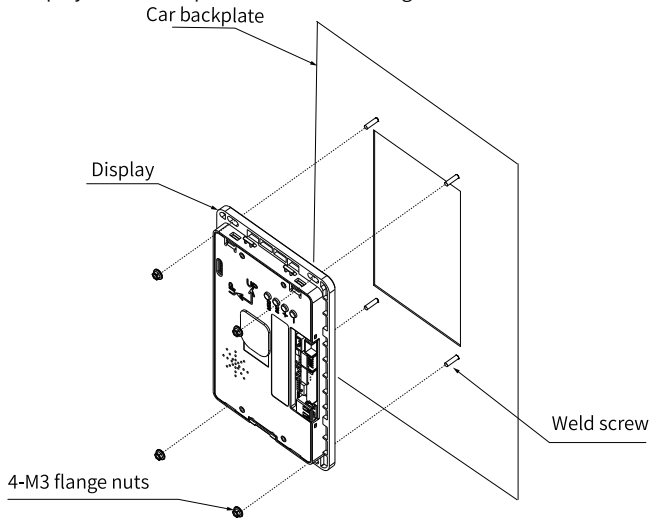


Figure 4-4 Securing the display to the backplate

3. Check the installation effect.

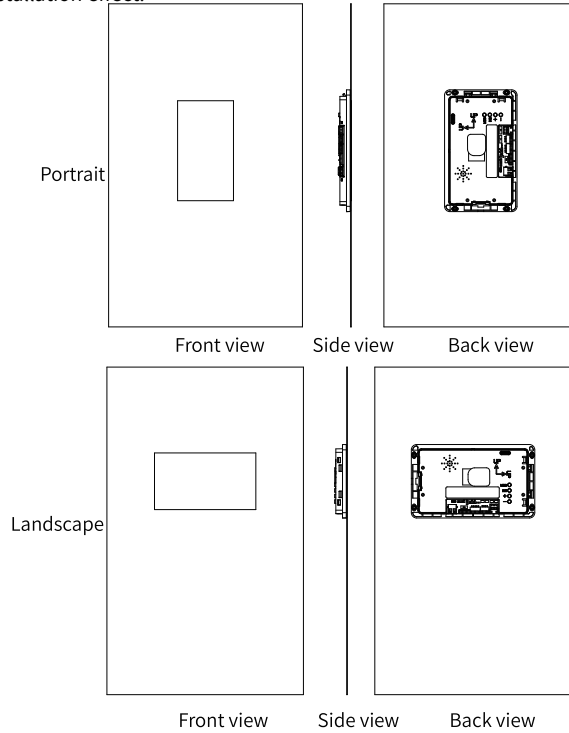
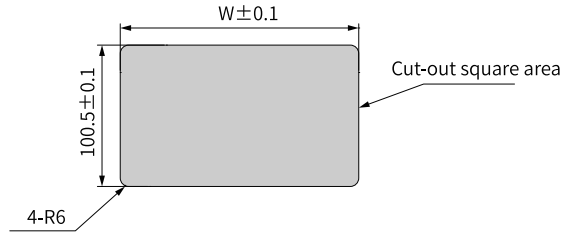


Figure 4-5 Checking the installation effect

## 4.2.2 Surface Mounting

1. Cut out an area on the car backplate according to the product dimensions.



No.	Sheet metal thickness (mm)	W size (mm)
1	1.0	168.8
2	1.5	169.4
3	2.0	170

Figure 4-6 Hole dimensions

2. Mount the snap-fit joint first, then fix the bottom circlip to the backplate.

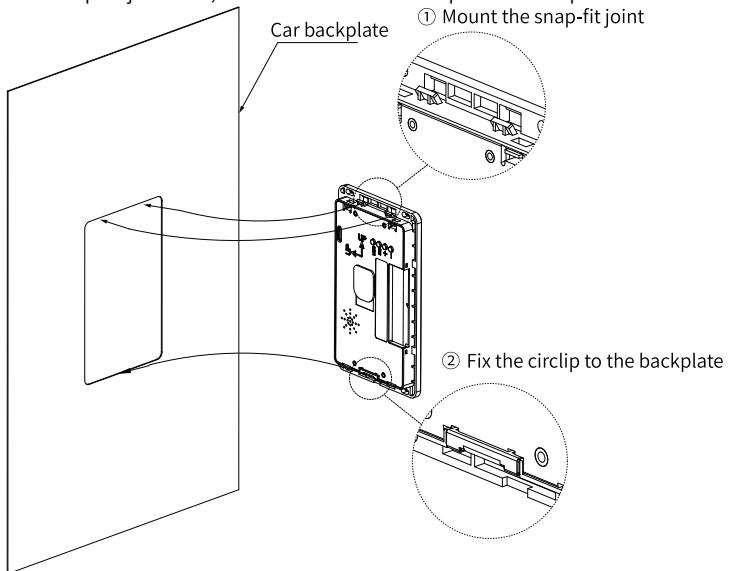


Figure 4-7 Securing the display to the backplate

3. Check the installation effect.

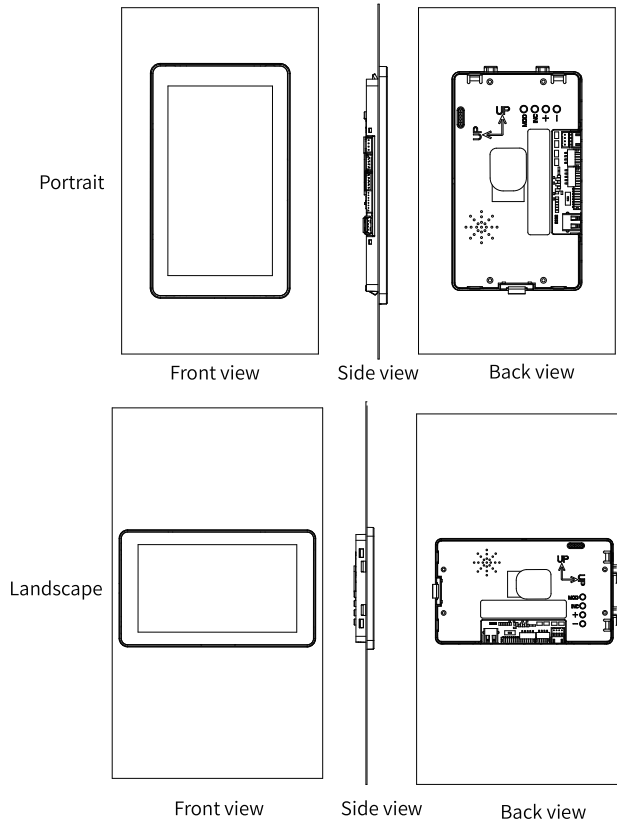


Figure 4-8 Checking the installation effect

## 5 Commissioning and Operation

This chapter introduces basic commissioning procedure for the display. By following the instructions, you can perform basic commissioning to ensure that its basic functions can be used normally.

### 5.1 Electrical Wiring Inspection

The operator is responsible for performing checks including but not limited to those listed in the following table in accordance with the recognized technical rules in the country of installation and with applicable regional guidelines. Tick after each check of the item.

No.	Item	Tick
1	Ensure that power input terminals are connected correctly and securely.	<input type="checkbox"/>
2	After power on, check whether the input voltage of pins 1 and 4 of the MCB power supply terminal is 24 VDC (range: 18 VDC to 36 VDC). If the voltage is abnormal, turn the power off and check the switched-mode power supply and ensure normal 24 VDC circuit wiring.	<input type="checkbox"/>

### 5.2 Function Commissioning

#### Note

Function commissioning varies slightly according to the backplate interface type (serial or parallel port).

For serial port types, see ["5.2.1 Serial Port Function Commissioning" on page 22](#); for parallel port types, see ["5.2.2 Parallel Port Function Commissioning" on page 25](#).

The backplate has four physical keys, mainly used for menu selection and parameter setting.

Table 5-1 Keys description

Key	Function description
MOD	<ul style="list-style-type: none"> <li>• Enters the settings menu interface</li> <li>• Enters the next-level menu</li> <li>• Enters the menu editing mode</li> </ul>
INC	<ul style="list-style-type: none"> <li>• Exits the settings menu interface</li> <li>• Returns to the previous-level menu</li> <li>• Exits the menu editing mode</li> </ul>

---

Key	Function description
+	<ul style="list-style-type: none"><li>• Moves up through menu items</li><li>• Increases the value of a menu item (holding down increases speed)</li></ul>
-	<ul style="list-style-type: none"><li>• Moves down through menu items</li><li>• Decreases the value of a menu item (holding down increases speed)</li></ul>

### 5.2.1 Serial Port Function Commissioning

Table 5-2 Function commissioning (serial port)

Function		Description
Level I menu	Level II menu	
Floor setting	Floor minimum	Sets the lowest floor in auto demo mode, ranging from 1 (default value) to 50.
	Floor maximum	Sets the highest floor in auto demo mode, ranging from 1 to 50 (default value).
	Floor address	<p>Range of 0 to 56, D2, D3, D4, and DH with default value 0.</p> <ul style="list-style-type: none"> <li>For car use: When there is only one display inside the car, it should be set to 0; when there are multiple displays, only one display can be set to 0, and the other displays should be set to any address of D2, D3, or D4.</li> <li>For hall use: Numbers 1 to 56 are used for hall call scenarios, setting the physical floor. DH is used when only the floor number is displayed at the landing floor, for example on the lintel.</li> </ul>
Display setting	Brightness	Sets the normal operating brightness of the screen, ranging from 10 to 100.
	Standby brightness	<p>Sets the standby brightness of the screen, ranging from 10 (default value) to 100.</p> <p>When the display does not receive the elevator operation signal within the standby time, it automatically enters the standby mode. The brightness will drop to this value.</p> <p>If the elevator control cabinet supports energy-saving mode, after the elevator enters this mode, the display will also automatically enter a standby state.</p>
	Standby time	<p>Sets the time (in minutes) after which the display will automatically enter the standby mode, ranging from 0 to 120 minutes, with a default value of 1 minute.</p> <p>If set to 0, it indicates that the standby mode will never be applied.</p>
	Welcome message	Switch for displaying the welcome message, which is disabled by default.
	LOGO	Switch for displaying the logo, which is disabled by default.

Function		Description
Level I menu	Level II menu	
Media setting	Min media index	Sets the minimum image number for the multimedia area, ranging from 0 to 32, with a default value of 1.
	Max media index	Sets the maximum image number for the multimedia area, ranging from 0 to 32, with a default value of 5.
	Rotation speed (s)	Sets the speed at which advertisement images switch in the carousel, ranging from 5 to 60 seconds, with a default value of 10 seconds.
	Play video	Not supported.
	Background music	Switch for setting background music, which is enabled by default.
	Gong	Switch for setting voice announcement, which is enabled by default.
	Video volume	Sets the volume level, ranging from 0 to 100.
Time setting	Date (Year)	Sets the year, ranging from 0 to 99.
	Date (Month)	Sets the month, ranging from 1 to 12.
	Date (Day)	Sets the day, ranging from 1 to 31.
	Time (Hour)	Sets the hour, ranging from 0 to 23.
	Time (Minute)	Sets the minute, ranging from 0 to 59.
	Display mode	The time display mode includes the following types: <ul style="list-style-type: none"> <li>• None: Hides the display of date, time, and day of the week.</li> <li>• Week: Displays only the date + day of the week.</li> <li>• Time: Displays only the date + time.</li> <li>• Week+Time: Displays the date + time + week.</li> </ul>
	24-hour time	Switch for 24-hour format display, which is enabled by default.

Function		Description
Level I menu	Level II menu	
System setting	Language	Sets the language , supporting switching between Chinese and English, with Chinese as the default.
	Display direction	Sets the display orientation, supporting switching between landscape and portrait modes.
	Theme	Sets the display theme, supporting switching between two themes, with Theme 1 as the default.
	Operating mode	Sets the operating mode, supporting auto demo mode and normal mode, with normal mode as the default.
	Arrow scroll speed	Sets the arrow scrolling frame animation speed, supporting five options: stationary, slow, medium, fast, and fastest, with medium speed as the default.
	Load	Sets the elevator load limit, ranging from 0 kg to 9999 kg, with a default value of 900, meaning 900 kg. When the load is set to 0, both the load and number of persons are not displayed.
	Number of persons	Sets the elevator person limit, ranging from 0 to 99, with a default value of 12. When the limit is set to 0, both the load and number of persons are not displayed.
Status code	101	Current communication baud rate for the time period, ranging from 1 to 38400 and 0 to 9600.
	102	Longest interval time for current data frames, in ms.
	103	Current packet loss rate in communication with the control cabinet.
	104	Current number of baud rate switchings in communication with the control cabinet.
	201	Current running duration of MCU for the time period.
	202	MCU watchdog reset times (retentive at power failure).
	301	Current running duration of MPU for the time period.
	302	MPU reset times (retentive at power failure).
	303	Timeout time of the last MPU reset, in ms.
	304	Current packet loss rate in communication with the MPU.

Function		Description
Level I menu	Level II menu	
Customer code	/	Displays the customer or manufacturer protocol code. This parameter is read-only. If you need to modify it, use Monarch App.
Security protocol	/	<p>Option for encrypted or non-encrypted models, with encryption enabled by default.</p> <ul style="list-style-type: none"> <li>• If an encryption chip is installed on the display, setting it to OFF will disable the security protocol; otherwise, it will be enabled.</li> <li>• If no encryption chip is installed on the display, this parameter is invalid.</li> </ul> <p>During encryption settings, judgment of the self-authentication result for encryption is added. If encryption self-authentication fails (for example, due to key not programmed, missing encryption chip, or other issues with the encryption circuit), switching to the encryption option will not be possible.</p>

## 5.2.2 Parallel Port Function Commissioning

Table 5-3 Function commissioning (parallel port)

Function	Description
Auto demo	<ul style="list-style-type: none"> <li>• 0: Exits from auto demo mode and displays the current status of the elevator.</li> <li>• 1: Enters the auto demo mode, with floors displayed cyclically without receiving elevator data.</li> </ul>
Floor address setting	Display address: Reserved.
Floor minimum	The lowest floor in auto demo mode with a minimum value of 1.
Floor maximum	The highest floor in auto demo mode with a maximum value of 99.
Rotation	<p>After rotation, the interface flips automatically, and the display does not need to be restarted.</p> <ul style="list-style-type: none"> <li>• 0: Not rotating.</li> <li>• 1: Rotating 90 degrees.</li> </ul>
Theme	<p>Two built-in themes are offered by default. If you need other themes, contact Inovance for customization.</p> <ul style="list-style-type: none"> <li>• 0: Theme 1.</li> <li>• 1: Theme 2.</li> </ul>
Language	<p>English and Chinese are offered by default. If you need other languages, contact Inovance for customization.</p> <ul style="list-style-type: none"> <li>• 0: Chinese.</li> <li>• 1: English.</li> </ul>

Function	Description																																																																																										
Capacity	<ul style="list-style-type: none"> <li>● 0: The number of persons is not displayed on the interface.</li> <li>● Others: The load capacity and number of persons required by national standards are as follows:</li> </ul> <p style="text-align: center;">Table 5-4 Load setting</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Param.</th> <th>Load</th> <th>Number of persons</th> <th>Param.</th> <th>Load</th> <th>Number of persons</th> </tr> </thead> <tbody> <tr><td>1</td><td>100</td><td>1</td><td>15</td><td>900</td><td>12</td></tr> <tr><td>2</td><td>180</td><td>2</td><td>16</td><td>975</td><td>13</td></tr> <tr><td>3</td><td>225</td><td>3</td><td>17</td><td>1000</td><td>13</td></tr> <tr><td>4</td><td>300</td><td>4</td><td>18</td><td>1050</td><td>14</td></tr> <tr><td>5</td><td>375</td><td>5</td><td>19</td><td>1125</td><td>15</td></tr> <tr><td>6</td><td>400</td><td>5</td><td>20</td><td>1200</td><td>16</td></tr> <tr><td>7</td><td>450</td><td>6</td><td>21</td><td>1250</td><td>16</td></tr> <tr><td>8</td><td>525</td><td>7</td><td>22</td><td>1275</td><td>17</td></tr> <tr><td>9</td><td>600</td><td>8</td><td>23</td><td>1350</td><td>18</td></tr> <tr><td>10</td><td>630</td><td>8</td><td>24</td><td>1425</td><td>19</td></tr> <tr><td>11</td><td>675</td><td>9</td><td>25</td><td>1500</td><td>20</td></tr> <tr><td>12</td><td>750</td><td>10</td><td>26</td><td>1600</td><td>21</td></tr> <tr><td>13</td><td>800</td><td>10</td><td>27</td><td>2000</td><td>26</td></tr> <tr><td>14</td><td>825</td><td>11</td><td>28</td><td>2500</td><td>33</td></tr> </tbody> </table>	Param.	Load	Number of persons	Param.	Load	Number of persons	1	100	1	15	900	12	2	180	2	16	975	13	3	225	3	17	1000	13	4	300	4	18	1050	14	5	375	5	19	1125	15	6	400	5	20	1200	16	7	450	6	21	1250	16	8	525	7	22	1275	17	9	600	8	23	1350	18	10	630	8	24	1425	19	11	675	9	25	1500	20	12	750	10	26	1600	21	13	800	10	27	2000	26	14	825	11	28	2500	33
	Param.	Load	Number of persons	Param.	Load	Number of persons																																																																																					
	1	100	1	15	900	12																																																																																					
	2	180	2	16	975	13																																																																																					
	3	225	3	17	1000	13																																																																																					
	4	300	4	18	1050	14																																																																																					
	5	375	5	19	1125	15																																																																																					
	6	400	5	20	1200	16																																																																																					
	7	450	6	21	1250	16																																																																																					
	8	525	7	22	1275	17																																																																																					
	9	600	8	23	1350	18																																																																																					
	10	630	8	24	1425	19																																																																																					
	11	675	9	25	1500	20																																																																																					
	12	750	10	26	1600	21																																																																																					
	13	800	10	27	2000	26																																																																																					
14	825	11	28	2500	33																																																																																						
Media enable	<ul style="list-style-type: none"> <li>● 0: Does not play background music.</li> <li>● 1: Loops a single background music file.</li> </ul>																																																																																										
Customer logo	<ul style="list-style-type: none"> <li>● 0: Does not display the logo.</li> <li>● 1: Displays the logo. If you need to change the logo, contact Inovance for customization</li> </ul>																																																																																										
Min media index	Sets the minimum image number for the multimedia area, with a minimum value of 1.																																																																																										
Max media index	Sets the maximum image number for the multimedia area, with a maximum value of 10.																																																																																										
Arrow scroll speed	Reserved.																																																																																										
Text	<ul style="list-style-type: none"> <li>● 0: Does not display text.</li> <li>● 1: Displays text and the language switches with the setting.</li> </ul>																																																																																										
Volume setting	Sets the volume level, ranging from 0 to 100.																																																																																										
Brightness setting	Sets the normal operating brightness of the screen, ranging from 10 to 100.																																																																																										
Standby brightness	When the display does not receive the elevator operation signal within the standby time, it automatically enters the standby mode. The brightness will drop to this value, ranging from 10 to 100.																																																																																										

Function	Description
Standby timeout	Sets the time (in minutes) after which the display will automatically enter the standby mode, ranging from 0 to 120 minutes. If set to 0, it indicates that the standby mode will never be applied.
Date (Year) setting	Sets the time and date.
Level mode	To set the level mode, open the back cover of the display and use the DIP switch. <b>FunSW: Floor and function signal</b> <ul style="list-style-type: none"><li>● H: Active high.</li><li>● L: Active low.</li></ul> <b>ICSSW: Up/Down arrow signal</b> <ul style="list-style-type: none"><li>● H: Active high.</li><li>● L: Active low.</li></ul>

## 6 Theme Change

Devices are categorized into serial port type and parallel port type, with the supported theme change methods shown in the following table.

Table 6-1 Theme change method

Device type	Change with a computer		Change with a USB flash drive	
Serial port	Supported or not	✓	Supported or not	✓
	Tools	Type-A dual-male USB cable and a computer.	Tools	USB drive, with a maximum capacity of 16 GB and FAT32 format. It is recommended to use USB drives from well-known brands, such as Kingstone and SanDisk.
Parallel port	Supported or not	✓	Supported or not	×
	Tools	Micro USB cable and a computer.	Tools	-

### 6.1 Change with a Computer

Replace the background theme, ad image, logo, and so on.

- For serial port devices, prepare the type-A dual-male USB cable and a computer.
  - For parallel port devices, prepare the Micro USB cable and a computer.
1. After connecting the device to the computer USB port using the USB cable, two drives will appear on your computer.  
The device will display "usb device is connecting...".
  2. Open the drive with the larger capacity.

#### 6.1.1 Background Theme Change

1. To change the background theme, prepare new images according to the requirements.

##### Note

- **Image format requirement: PNG format, resolution 800 x 480, 32-bit color depth.**
  - **Ensure that the display orientation of the new images matches that of the images being replaced.**
  - Pay attention to the naming and format of the new images, ensuring they are consistent with the originals. You can check image information by right-clicking on the image file and selecting "Properties > Details".
2. Open the "TGUS\_TF" folder and copy and replace the original images.

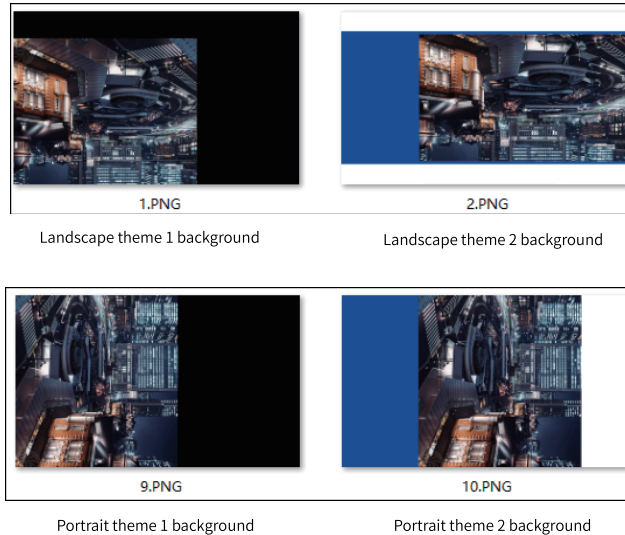


Figure 6-1 Background theme change

3. When "...finished..." is displayed, it indicates that the update is complete, and you can eject the USB drive from the computer and unplug the USB cable.
4. Check the display after power-on again. Check whether any images are displayed in the wrong direction. If yes, the images need to be rotated. If the images do not display, check the file names and formats.

### 6.1.2 Ad Image, Logo or Welcome Message Change

The procedure for replacing ad images, logos, and welcome messages is the same.

1. Prepare new images according to the requirements.

#### Note

- Ensure you replace the images corresponding to landscape or portrait orientation as required. Make sure that the new images have the same naming, format, and resolution as the ones being replaced. See "[Appendix](#)" on page 39 for the default images built into the display for guidance.
- Image format requirement: PNG format, 32-bit color depth. See the image name for resolution requirements. The image naming convention is "No. + Sequence + Height + Width + \_ICO.png". You can view image information by right-clicking and selecting "Properties > Details".

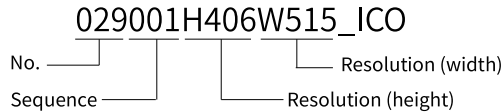


Figure 6-2 Image naming (example)

2. Open the "TGUS\_TF" folder and copy and replace the original images.
3. When "...finished..." is displayed, it indicates that the update is complete, and you can eject the USB drive from the computer and unplug the USB cable.
4. Check the display after power-on again. Check whether any images are displayed in the wrong direction. If yes, the images need to be rotated. If the images do not display, check the file names and formats.

### 6.1.3 Background Music Change

1. To change the background music, prepare new music according to the requirements.

**Note**

**The file name and format must be 60.mp3.**

2. Open the "TGUS\_TF" folder and copy and replace the original music.
3. When "...finished..." is displayed, it indicates that the update is complete, and you can eject the USB drive from the computer and unplug the USB cable.
4. Check whether the music can be played properly after power-on again.

## 6.2 Change with a USB Flash Drive

The USB drive has a maximum capacity of 16GB and is formatted as FAT32.

---

### **Note**

Some low-cost USB drives use processing chips of unknown brands, which may lead to upgrade failures. It is recommended to use USB drives from well-known brands, such as Kingston and SanDisk.

---

1. Prepare the USB drive in advance and insert the USB drive into the computer.
2. Create the "**bstupdate>TGUS\_TF**" directory path on the USB drive.

### 6.2.1 Background Theme Change

1. To change the background theme, prepare new images according to the requirements.

**Note**

- **Image format requirement: PNG format, resolution 800 x 480, 32-bit color depth.**

- **Ensure that the display orientation of the new images matches that of the images being replaced.**
  - Pay attention to the naming and format of the new images, ensuring they are consistent with the originals. You can check image information by right-clicking on the image file and selecting "Properties > Details".
2. Open the "TGUS\_TF" folder and place the newly created images inside.



Figure 6-3 Background Theme Change

3. Pull out the USB drive and insert it into the display.
- When "...finished..." is displayed, it indicates that the update is complete, and you can remove the USB drive.
4. Check the display after power-on again. Check whether any images are displayed in the wrong direction. If yes, the images need to be rotated. If the images do not display, check the file names and formats.

## 6.2.2 Ad Image, Logo or Welcome Message Change

The procedure for replacing ad images, logos, and welcome messages is the same.

1. Prepare new images according to the requirements.

### Note

- Ensure you replace the images corresponding to landscape or portrait orientation as required. Make sure that the new images have the same naming, format, and resolution as the ones being replaced. See "[Appendix](#)" on page 39 for the default images built into the display for guidance.



## 7 Interface Upgrade

Displays are categorized into serial port type and parallel port type, with the supported interface upgrade methods shown in the following table.

Table 7-1 Interface upgrade method

Device type	Upgrade with a computer		Upgrade with a USB flash drive	
	Supported or not	✓	Supported or not	✓
Serial port	Tools	Type-A dual-male USB cable and a computer.	Tools	USB drive, with a maximum capacity of 16 GB and FAT32 format. It is recommended to use USB drives from well-known brands, such as Kingstone and SanDisk.
	Supported or not	✓	Supported or not	×
Parallel port	Tools	Micro USB cable and a computer.	Tools	-

### 7.1 Upgrade with a Computer

- For serial port devices, prepare the type-A dual-male USB cable and a computer.
  - For parallel port devices, prepare the Micro USB cable and a computer.
1. After connecting the display to the computer through USB cable, wait about 5s until the display shows "usb device is connecting."
  2. At this point, two removable drives will appear on your computer. Select the drive with larger capacity.
  3. Copy the folder containing the UI resource files you want to replace into the "TGUS\_TF" folder on this drive, overwriting the existing files.
  4. Eject the removable drive from the computer and the display will immediately show "\*\*\*\*\*finished" or "\*\*\*\*\*successful." Then power off the display and disconnect the USB cable.  
If the upgrade fails, "errfile=\*\*\* FAIL" will be displayed, where \* represents a specific file. In this case, reapply power and attempt the upgrade again.

### 7.2 Upgrade with a USB Flash Drive

The USB drive has a maximum capacity of 16GB and is formatted as FAT32.

## Note

Some low-cost USB drives use processing chips of unknown brands, which may lead to upgrade failures. It is recommended to use USB drives from well-known brands, such as Kingston and SanDisk.

---

The file organization structure within the USB drive is detailed in the following table, with paths starting from the root directory of the USB drive. If the following directory is not available, you need to create it manually. After the USB drive is inserted, you must restart the device manually before entering the upgrade mode.

Table 7-2 File organization structure within the USB drive

No.	Name	Description
1	bstupdate	Directory for storing TGUS_TF files

1. On your computer, place the TGUS\_TF interface files intended for update into the "bstupdate" directory on the USB drive, then insert the drive into the USB port of the display.
2. Power on the display and an upgrade interface will appear.
3. Once the upgrade is complete, it will display "Upgrading in progress...". At this point, remove the USB drive and apply power again.  
If the upgrade fails, "errfile=\*\*\* FAIL" will be displayed, where \* represents a specific file. In this case, reapply power and attempt the upgrade again.

## 8 Maintenance

### 8.1 Daily Maintenance Items

- Do not expose this product to rain or place it near water. If water stains appear on the surface, which can cause touch distortion, wipe it dry with a dry cloth or paper towel before resuming normal use.
- Do not install the product in unstable positions, such as on wobbling mounting brackets or on inclined surfaces.
- Do not drop the product or subject it to shocks.
- The touch surface of this product requires regular cleaning to ensure it remains clean and tidy.
- Do not hit the surface with force.
- Do not pry or force the edges of the frame open.

### 8.2 Daily Inspection and Cleaning Items

The operator is responsible for performing checks including but not limited to those listed in the following table in accordance with the recognized technical rules in the country of installation and with applicable regional guidelines. Tick after each check of the item.

Table 8-1 Daily inspection items

No.	Item	Tick
1	Ensure that the installation environment does not change	<input type="checkbox"/>
2	The display is in normal operation	<input type="checkbox"/>
3	The wiring does not come loose	<input type="checkbox"/>
4	The screws on the external frame of the display are secure	<input type="checkbox"/>

Table 8-2 Daily Cleaning Items

No.	Item	Tick
1	Clean the display surface periodically.	<input type="checkbox"/>

### 8.3 Battery Replacement

The displays come in serial port and parallel port types with slightly different battery replacement methods.

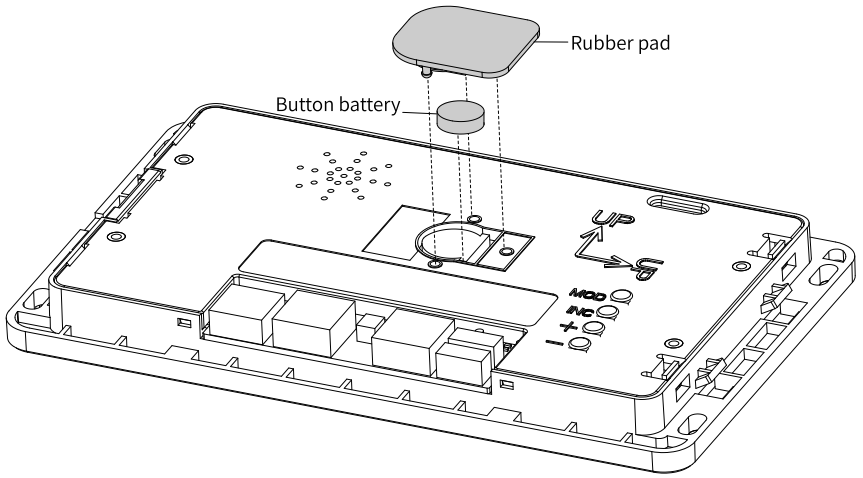


Figure 8-1 Battery replacement for serial port type

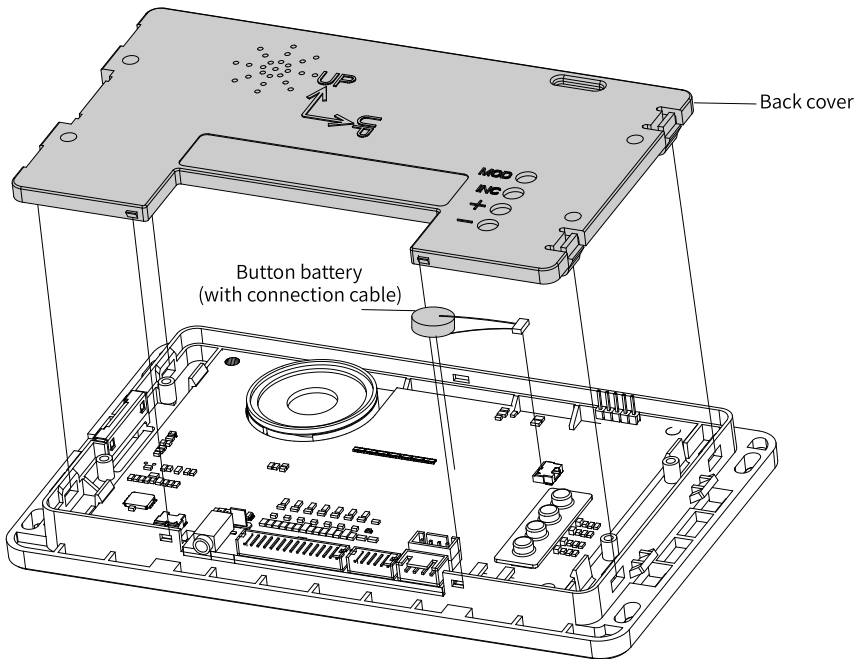


Figure 8-2 Battery replacement for parallel port type

## 9 Common Fault Troubleshooting

Table 9-1 Common fault troubleshooting















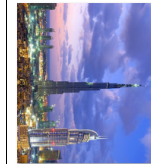




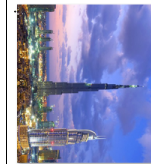
Description	Cause	Diagnosis	Solution
During installation and commissioning, floors and arrows are not displayed.	The wiring is incorrect or the cable is connected improperly.	Check whether all connection lines match the defined pinout of the display; inspect COB board and CTB wiring for any abnormalities.	Check whether the communication lines are incorrectly wired (reversed or incorrect pinout). If so, reconnect the communication lines correctly. Connect the faulty display to the normally operating elevator control cabinet and check whether the fault is displayed. If the display is normal, check the elevator control cabinet to ensure that it can operate properly.
	The display and control cabinet customer protocol codes do not match.	Go to the display settings menu and check the "Customer code" in the Level I menu.	Perform on-site modification using the Monarch App or provide the work orders on the back of the product to Inovance service personnel.
	The on-site control cabinet is an encrypted system, but the display encryption authentication is disabled.	Go to the display settings menu and check whether the "Security protocol" is enabled in the Level I menu.	Modify the parameters in the settings menu to enable the security protocol.
	The on-site control cabinet is an encrypted system, but the display encryption self-authentication fails.	Go to the display settings menu and check whether the "Security protocol" is disabled in the Level I menu and cannot be manually enabled.	Provide the work orders on the back of the product to Inovance service personnel.
	Address settings conflict for multiple displays installed within the elevator car.	Ensure that when multiple displays are installed in the car, only one display address is set to 0, while others should be set to any address of D2, D3, or D4.	Go to the display settings menu and check the parameters in "Floor setting > Floor address" in the Level II menu. If the parameters are incorrect, set them again.

Description	Cause	Diagnosis	Solution
<p>When the control cabinet is encrypted during running, the floor arrow area displays the up arrow and "000", or "-" or "=".</p> <p>It can be temporarily fixed through restarting the system but reoccurs after 7 days.</p>	<p>The floor address setting is incorrect.</p>	<p>Go to the display settings menu and check whether the "Security protocol" is enabled. Check whether the display address setting is correct. Ensure that when multiple displays are installed in the car, only one display address is set to 0, while others should be set to any address of D2, D3, or D4.</p>	<p>Go to the display settings menu and check the parameters in "Floor setting &gt; Floor address" in the Level II menu. Adjust the parameters that are set incorrectly. Also, modify the parameters in the settings menu to enable the security protocol.</p>
	<p>The display encryption authentication is not enabled.</p>	<p>Go to the display settings menu and check whether the "Security protocol" is enabled.</p>	<p>Go to the display settings menu and enable "Security protocol".</p>
	<p>The on-site control cabinet is an encrypted system, but the display encryption self-authentication fails.</p>	<p>Go to the display settings menu and check whether the "Security protocol" is disabled in the Level I menu and cannot be manually enabled.</p>	<p>Provide the work orders on the back of the product to Inovance service personnel.</p>
	<p>The on-site control cabinet is an encrypted system, with more than two peripheral devices that require encryption authentication mounted or connected on the car COP bus, such as display, and A0S board.</p>	<p>For the Monarch encryption system, it must be ensured that only one peripheral device gets involved in the encryption authentication on the car COP bus.</p>	<p>Provide the work orders on the back of the product to Inovance service personnel.</p>
<p>Time display is inaccurate.</p>	<p>Time has not been calibrated.</p>	<p>Go to the display setting menu and check the "Time setting" in the Level I menu, where you can set the year, month, day, hour, minute, and display mode separately.</p>	
	<p>The battery level is low.</p>	<p>Check whether the time differs greatly from the previous setting. If yes, recalibrate the time. If the issue persists after three power cycles, it indicates that the battery level is low and replacement is required.</p>	<p>Contact Inovance service personnel to purchase the CR1220 button battery for replacement.</p>
<p>The display freezes or there is no display after the multimedia image is updated.</p>	<p>The newly imported multimedia image format or specification do not meet the requirements.</p>	<p>Check the image against the specified requirements.</p>	<p>Modify the image format or specification, delete incorrect image, and re-import.</p>
	<p>The newly imported multimedia image name does not meet the requirements.</p>	<p>Check whether the name of the newly imported image matches the name of the replaced image.</p>	<p>Ensure that the names of the new and replaced images match.</p>

## 10 Appendix

Ensure that when replacing advertisements, logos, or welcome messages, the naming, format, and resolution of the new images match those of the original images.

### Ad Image

Landscape theme 1	 029001H406W515_ICO.png	 029002H406W515_ICO.png	 029003H406W515_ICO.png	 029004H406W515_ICO.png	 029005H406W515_ICO.png
Landscape theme 2	 039001H352W581_ICO.png	 039002H352W581_ICO.png	 039003H352W581_ICO.png	 039004H352W581_ICO.png	 039005H352W581_ICO.png
Portrait theme 1	 049001H480W458_ICO.png	 049002H480W458_ICO.png	 049003H480W458_ICO.png	 049004H480W458_ICO.png	 049005H480W458_ICO.png
Portrait theme 2	 059001H480W458_ICO.png	 059002H480W458_ICO.png	 059003H480W458_ICO.png	 059004H480W458_ICO.png	 059005H480W458_ICO.png

## Logo

Landscape theme 1	Landscape theme 2	Portrait theme 1	Portrait theme 2
024001H067W284_ICO.png	034001H056W158_ICO.png	044001H287W069_ICO.png	054001H158W056_ICO.png

## Welcome Message

Landscape theme 1		Landscape theme 2	
028001H059W300_ICO.png	028002H059W300_ICO.png	038001H056W536_ICO.png	038002H056W536_ICO.png
Portrait theme 1		Portrait theme 2	
048001H480W059_ICO.png	048002H480W059_ICO.png	058001H480W056_ICO.png	058002H480W056_ICO.png



Copyright © Shenzhen Inovance Technology Co., Ltd.

PS00017941A00

---

**Shenzhen Inovance Technology Co., Ltd.**

[www.inovance.com](http://www.inovance.com)

---

**Suzhou Inovance Technology Co., Ltd.**

[www.inovance.com](http://www.inovance.com)

---

**Add.:** Inovance Headquarters Tower, High-tech Industrial Park,  
Guanlan Street, Longhua New District,  
Shenzhen 518000, P.R. China

**Tel:** (0755) 2979 9595

**Fax:** (0755) 2961 9897

---

**Add.:** No.52, Tian'e Dang Road, Wuzhong District,  
Suzhou 215104, P.R. China

**Tel:** (0512) 6637 6666

**Fax:** (0512) 6285 6720