Yanteon 焱 腾 科 技 YANTEON TECHNOLOGY

User Manual for YLH2435N

Before using the controller, please read this manual carefully and operate the controller correctly as required. Failure to do so will result in damage to the controller and no warranty service!

About this manual

Icons will be used throughout the manual to attract the reader's attention.

Icons used include:

Attention- General best practices.

Caution- Safety tips, if ignored, may cause damage to the control system and the vehicle.

Warning- Safety tips, if ignored, may cause personal injury.

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1. Introduction

1.1 Brief Introduction

YLH2435N series electric wheelchair controller is an intelligent motor drive control system designed by Yanteon Mechanical & Electronic Technology (Shanghai) Co., Ltd. The electric wheelchair controller adopts MCU intelligent control and special motor drive chip to provide reliable, stable and efficient speed control scheme for vehicle manufacturers. The intuitive LCD display panel and ergonomic joystick make you control the wheelchair easily. The advanced PID driving algorithm and design concept ensure a more comfortable and safe driving experience for you. In order to facilitate your use and provide a higher level of security, this control system combines cutting-edge electronic products developed for many years. This product has strong competitiveness in the emerging market of folding electric wheelchair or light detachable electric wheelchair. As with other electronic products, correct operation can ensure the best reliability of the control system.

The main characteristics of YLH2435N controller are as follows：

- Small size and light weight (700g), Perfect match for carbon fiber wheelchair.
- LCD display which can display the driving speed and TRIP distance in real time.
- The controller is equipped with Type-C charger interface.
- Built-in headlamp .
- Bluetooth wireless remote control: Can remotely control the power wheelchair via Mobile-phone or remote controller.
- Fault indication: The controller can display the specific location of the fault on the LCD screen, which is convenient for users to repair by themselves.
- Advanced PID driving algorithm and intelligent control ensure the safety and comfort of the whole vehicle.
- Soft start, soft stop and intelligent brake ensure that the electric wheelchair is safer and more comfortable in any environment.
- The automatic motor load compensation function ensures that the speed of the electric wheelchair is stable during obstacle climbing or climbing.
- The full closed loop electronic servo system ensures that the speed of the electric wheelchair is stable and uniform when going downhill.
- Over current, over voltage, overload, over temperature, under voltage and other protection functions ensure more reliable and safe driving of electric wheelchair.
- The power-off protection function ensures that the electric wheelchair can still be controlled and decelerated slowly to stop once the power is cut off during driving.
- The self-diagnosis function of the controller makes the vehicle installation and debugging more

convenient and fast.

- Controller parameters can be completely programmed and debugged by the vehicle manufacturer to meet different needs of different users.

1.2 General Information

Caution 1：Avoid collision with the control system, especially the joystick. Avoid the controller from colliding with obstacles when driving.

Avoid the controller from falling. When transporting the wheelchair, please ensure that the controller is well protected against damage.

Caution 2: All components of the control system use industry-level specifications to ensure reliability in different environments.

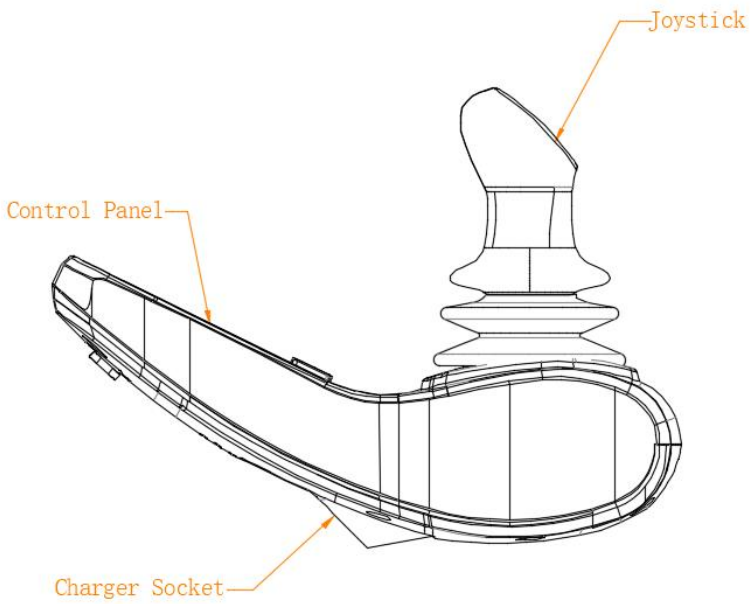
However, if we can avoid exposure to extreme conditions as far as possible, we will enhance the reliability of the control system.

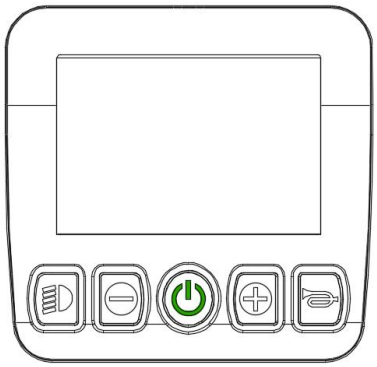
Do not expose the controller or its components for long periods of time. If the controller is contaminated by food or drink, it should be cleaned as soon as possible.

Caution 3: You can use the cloth with diluted detergent to clean the controller or joystick. You should be more careful when cleaning the joystick. It is strictly prohibited to use a corrosive or alcoholic detergent.

1.3 Function Introduction

The YLH2435N controller includes: a self-contained front light, and a speaker function. Every function will be introduced in this section.





Control Panel

1.3.1 Control Panel

1. Power Switch

: Press the button and the buzzer will beep twice, indicating that the controller is powered on normally. Press the key again to shut down the controller.

Unless there is an emergency, do not use the switch button to stop the wheelchair during driving (if used, it may shorten the service life of wheelchair driving parts or cause personal injury).

2. Horn

: Press the horn button, and the horn will continue to sound until it is released.

3. Lamp

: Press the button softly, the built-in headlamp of the controller and the associated LED will illuminate continuously, and press the button again to turn off.

4. Speed Control

: Press the button to increase the speed gear.

: Press the button to decrease the speed gear.

Users can adjust the driving speed of the electric wheelchair according to their own habits and different environments.

The speed is divided into five sections, which are respectively 20%, 40%, 60%, 80% and 100% of the maximum speed. (The controller shall be delivered in accordance with the national standard, and the maximum speed shall not exceed 6Km/h generally).

Speed gear 1 is 20% of the highest speed. (1 of speed light indicators is on)

Speed gear 2 is 40% of the highest speed. (2 of speed light indicators are on)

Speed gear 3 is 60% of the highest speed. (3 of speed light indicators are on)

Speed gear 4 is 80% of the highest speed. (4 of speed light indicators are on)

Speed gear 5 is 100% of the highest speed. (5 of speed light indicators are on)

1.3.2 LCD Display Interface

The upper display interface of the YLH2435N control system adopts an LCD display, which is used to display the current system status, including battery level, speed and gear display. There are 3 styles of display interface, users can switch freely in the engineering menu interface.

Ⅰ、Project Menu Operating Instructions

① The controller is turned on and the meter display is normal. At the same time, long press the ‘ ’ key and ‘ ’ key for about 3 seconds, the controller sends out 2 beeps after releasing the combination of keys, enter the engineering control interface, such as Figure 1 (engineering interface I), Figure 2 (engineering interface II).

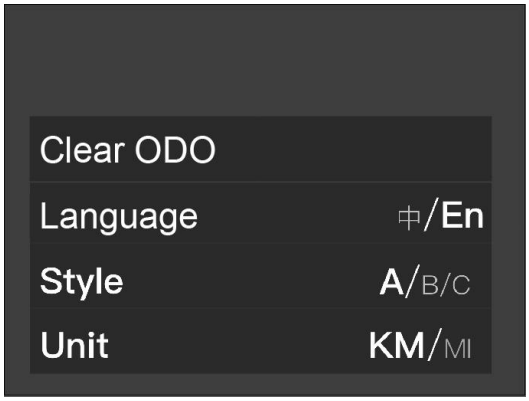


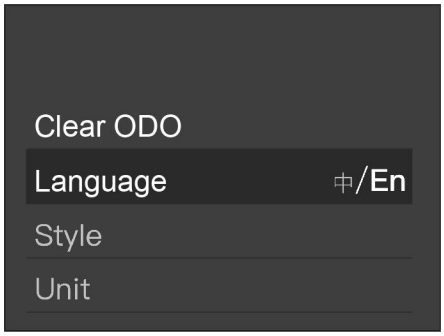
Figure 1 (engineering interface I) Figure 2 (engineering interface II)

② Press the ‘ ’key to select the previous item, and press the ‘ ’ key to select the next item, as in Figure 3.

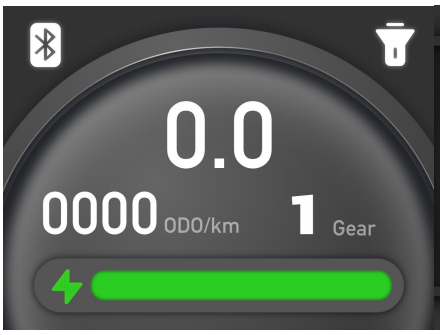
Figure 3

③ Cear the total mileage mode: find the “Clear ODO” option in the engineering interface, press ‘ ’ or ‘ ’ and the “Clear ODO” option will show “Success”, indicating that it is cleared successfully; as shown below.

④ To switch between Chinese and English voice announcements: In the engineering interface, find the Language option and press ' ' or ' ' to select either Chinese or English announcement mode. For example, after we select English, a light touch on the power switch will automatically save the settings and exit the engineering interface, returning to the main interface where all intelligent voice announcements will be in English; as shown in the following figure.

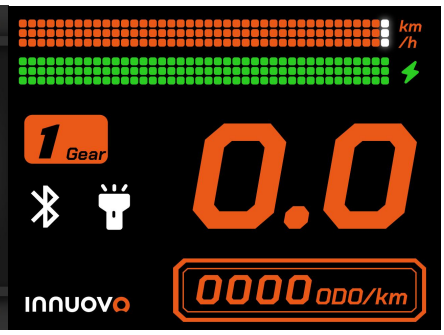


⑤ Style interface switch: In the engineering interface, find the Style option and press ' ' or ' ' to switch to three themes A, B and C. Tap the power switch to automatically save the setting and exit the engineering interface, and automatically return to the main interface with the latest selection, as shown in the figure below.



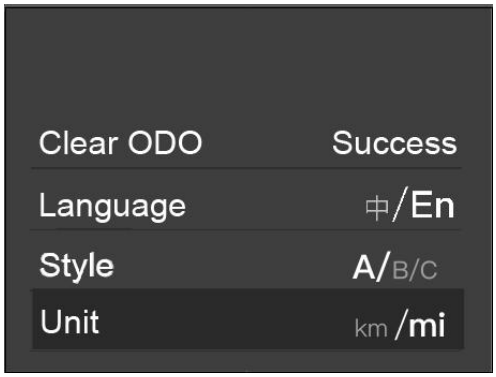
Theme A

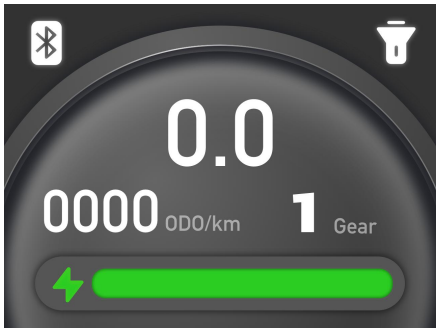
Theme B



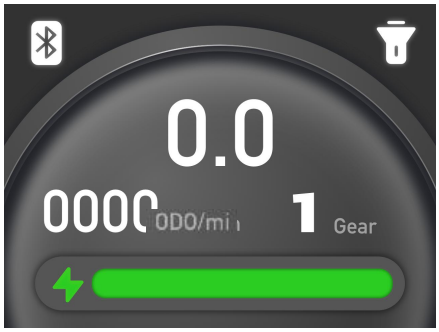
Theme C

⑥ Switch between km and mi: In the engineering interface, find the Unit option, press ‘ ’ or ‘ ’ to switch km or mi. Tap the power switch, the system will automatically save the setting and exit the engineering interface, and automatically return to the main interface. The main interface will display the current latest selected unit, as shown in the figure below.



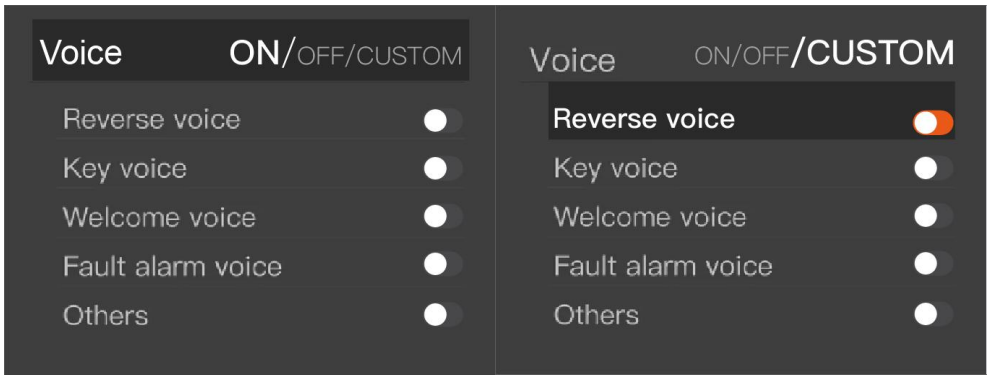


Unit :km



unit :mi

⑦ Voice option: Find the Voice option in the engineering interface, press ‘ ’ or ‘ ’to select all sounds "ON", "OFF", "CUSTOM", tap the power switch, the system automatically saves the setting and exits the engineering interface, automatically returns to the main interface, and executes the selected function;



(1) When the "ON" option is selected, the intelligent voice of the vehicle, mechanical buttons and reversing sound will be all turned on;

(2) When the "OFF" option is selected, all sounds of the vehicle are turned off except for the normal mechanical horn sound;

(3) When the "CUSTOM" option is selected, press the ‘ ’ key to select the previous item and press the ‘ ’ key to select the next item。

A. "Reverse voice" option means that the intelligent voice is turned on and off separately.

B. "Key voice" option, indicating that the mechanical key sound is turned on and off separately.

C. "Welcome voice" option, indicating that the boot welcome screen is opened and closed separately.

D. "Fault alarm voice" option, indicating that the fault alarm sound is opened and closed separately.

E. "Others" option, which means that the sound other than the above four voice messages is opened and closed separately, such as gear voice message, headlights on and off voice message, etc.

1.3.3 Combination button function

◆ **Battery type switching**

The controller is turned on and the horn button‘ ’ and acceleration button ‘ ’ are pressed at the same time for more than 3S. After the controller emits two beeps, it is turned off and effective. That is, the free switching mode of lead-acid lithium battery is realized (the first sound when the controller is turned on is lead-acid, the second sound is ternary lithium battery, and the third sound is iron phosphate lithium).

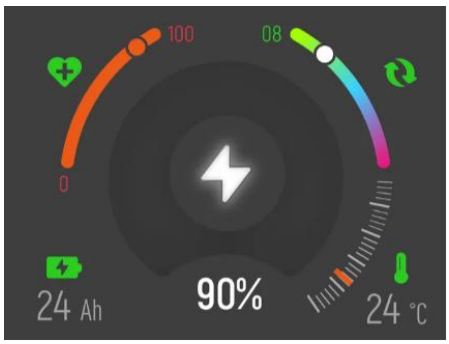
◆ Maximum speed adjustment for each gear

First, confirm which gear (1, 2, 3, 4, 5) the current vehicle is in. Then press and hold the " " key and " " key for 3 seconds. After the controller emits two beep sounds, it enters the adjustment mode:

A、At this point, pressing the " " or " " key can change gears. Selecting gear 1 sets the maximum forward speed to 60; gear 2 to 70; gear 3 to 80; gear 4 to 90; and gear 5 to 100. After setting, press the "Power button" to save changes, which will take effect upon shutdown. Each adjustment can only be made for one gear at a time;

◆ **Battery health interface**

In the on state, press " " and " " at the same time to enter the battery health display interface. Tap the power button once, and the system will automatically save the setting and exit the function interface as shown in the figure below;



◆ **Turn off and on the reverse sound**

In the on state, press " " and " " at the same time, the controller will beep twice and then shut down.

1.3.4 Battery Gauge

Battery charging method for electric wheelchair: Insert charger plug (Figure 1) into the battery charging socket (Figure 2) of the controller as shown below:

① Connecting to positive pole of power supply (24V)

② ③ Connecting to negative pole of power supply (24V)

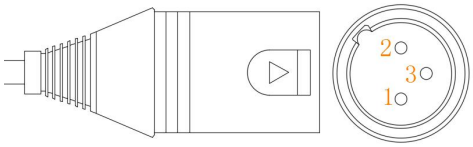


Figure1：Charger Plug

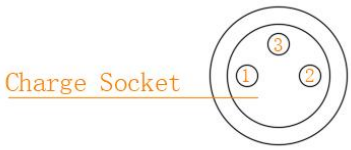


Figure2：Battery Charging Socket

Function description:

When the product is connected to the charger, the upper control display will show the charging status. When the electric wheelchair controller is being charged, the wheelchair cannot be operated. Once the charger displays "Charging Complete," indicating that the battery is fully charged, you can unplug the charger and use the electric wheelchair. The charging current for the electric wheelchair controller does not exceed 5A.

The charging status will only be displayed when the charger is plugged into the controller. The charging status will not be displayed when the charger is unplugged. Whether the battery is fully charged depends on the display of the battery charger. Do not disconnect the battery during charging.

The controller can also be charged when it is powered off. Whether the battery is fully charged depends on the display of the battery charger.

Before charging, please make sure that the polarity of the charger plug pin is correct and compatible with the pin polarity shown in the charging socket of the controller. If the plug is not compatible, there is a risk of injury or fire, and Yanteon will be free of any legal liability for any loss caused by failing to comply with this condition.

If the wrong charger is used, it may damage the battery, wheelchair, control system or charger itself, and may also lead to overheating of parts, resulting in potential danger of injury or even fire. Yanteon will be free of any legal liability for any loss caused by failing to comply the charger with the wheelchair controller or other parts of the wheelchair system.

1.3.5 Joystick

The moving direction of the joystick can control the moving direction of the electric wheelchair. and the speed of the electric wheelchair in this direction depends on the movement range of the joystick.

Push the hand-held joystick forward: the electric wheelchair will move forward.

Push the hand-held joystick backward: the electric wheelchair will move backward.

Push the hand-held joystick to the left: the electric wheelchair will turn to the left.

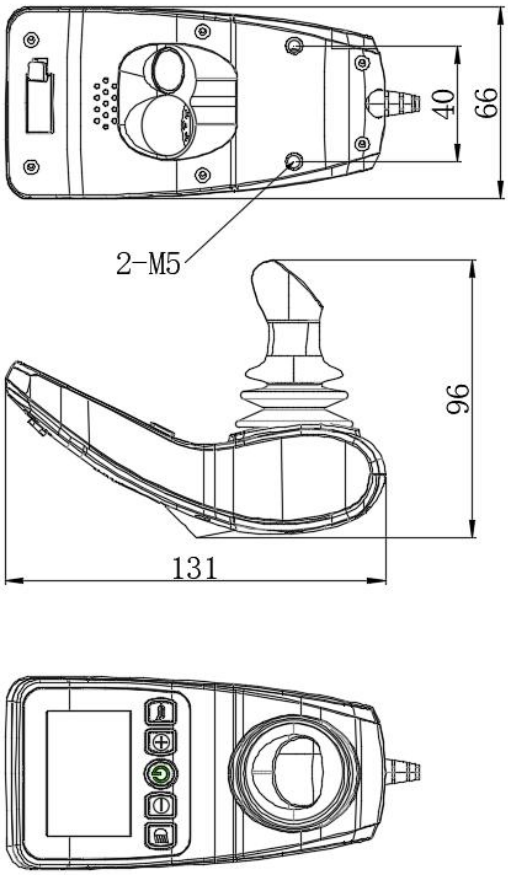
Push the hand-held joystick to the right: the electric wheelchair will turn to the right.

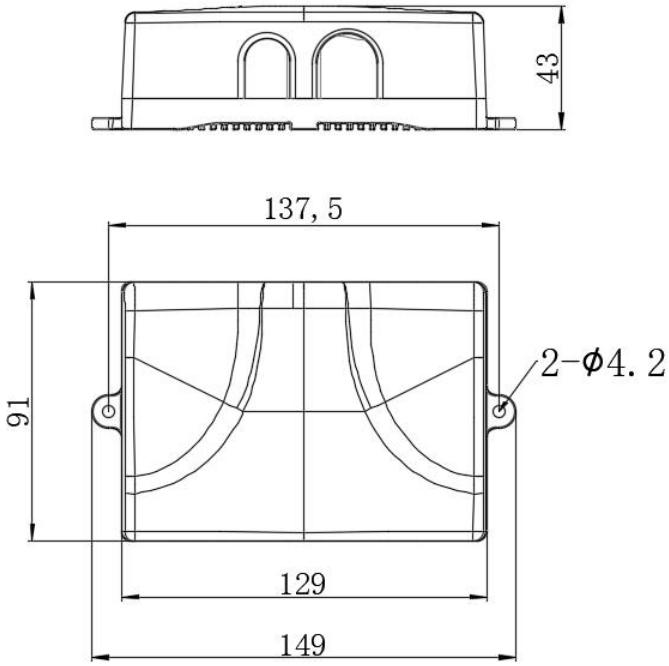
For safety concerns, when the product power-up for the first time, it will automatically ignore the movement of the joystick. If the power supply is turned on when the joystick is not in the middle position, the controller will give a sound prompt of "tick tick tick tick...", release the joystick and return it to the middle position, and the prompt will disappear. This function can prevent sudden or unexpected actions of the electric wheelchair, and prevent driving when the controller power is turned on or the prohibition condition is removed and the joystick is not in the middle. If the prompt still exists after releasing the joystick, it may be that the joystick components have been damaged. Please do not continue to use this product and consult the manufacturer at the same time.

If there is no action of the joystick, the controller will automatically turn off the controller power according to the time set by the manufacturer and enter the sleep mode. Press the power switch button to wake up the control system from the sleep mode.

2. Installation

YLH2435N control system consists of joystick module and power module. The joystick module is fixed with two M5 screws, and the power module is fixed with two φ 4.2 mounting holes.





Joystick Module **Power Module** Unit：mm

3. Parameter Setting

3.1 Introduction

Users can set the parameters of this product through the wheelchair controller programmer customized by Yanteon according to their driving habits. This product takes into account the normal driving habits of most users, driving safety and the adaptation requirements of electric wheelchairs to various road conditions, so only a small amount of parameter settings are in need.

Programmer of Wheelchair Controller

3.2 Parameter Setting

YLH2435N electric wheelchair controller can set parameters through a hand-held programmer. Insert the charger plug of the programmer into the controller that needs to set parameters, turn on the control power switch, and the LCD screen of the programmer displays: special for engineering and production. Enter the password in the "Project Specific" area to enter the new vehicle model and parameter modification page, press the "New" button to name and enter the setting of relevant parameters.

The parameter setting items are as follows:

No.	Display	Default Value	Description
1	Battery type	Lead acid	Selection of battery supply type: Lead acid: the battery type is lead acid Ternary lithium battery: the battery type is lithium battery version(default) Lithium iron phosphate battery: the battery type is lithium battery version If wrong selected, the system cannot correctly indicate the power state. Please be noted!
2	Switch left motor running forward and reverse	Off	Modify this parameter when the vehicle cannot run normally. The vehicle turns left when the control joystick is pushed in the positive direction.
3	Switch right motor running forward and reverse	Off	Modify this parameter when the vehicle cannot run normally. The vehicle turns right when the control joystick is pushed in the positive direction.
4	Motor swap	Off	Modify this parameter when the vehicle can't trun normally, push the joystick left to drive right, and modify this parameter when pushing the joystick right to drive left.
5	Brake type	/	Selection of motor with mechanical brake: electromagnetic brake, otherwise select: slope-parking (motor without mechanical brake)
6	Brake disconnected alarm	On	Yes: Enable the function of detecting the electromagnetic brake when power on. No: do not detect the electromagnetic brake after power on If the vehicle does not have an electronic brake, please do not select "Yes". Otherwise, the controller will give 3 or 5 alarm indicators when power on.
7	Chick the motor connect	On	This is factory default parameter and do not change it!
8	Reverse driving alarm	Off	If the reversing alarm sound is disabled, the reversing horn has no sound. This function has no effect on the button prompt tone and the horn button of the controller.
9	Ratio of maximum forward speed	1-100	It is used to set the maximum speed ratio of the vehicle when the joystick is pushed forward to the maximum. The higher this value is set, the faster the forward speed is. Please set the speed gear to 5 and then adjust this parameter.
	Ratio of minimum forward speed	1-100	It is used to set the minimum speed ratio of the vehicle when the joystick is pushed forward to the maximum. The higher this value is set, the faster the forward speed is. Please set the speed gear to 1, and then adjust this parameter.

No.	Display	Default Value	Description
10	Ratio of maximum turning speed	1-100	It is used to set the maximum speed ratio of the vehicle when pivot turn, when the joystick is pushed to the right to the maximum. The higher this value is set, the faster the turning speed is. Please set the speed gear to 5 and then adjust this parameter.
	Ratio of minimum turning speed	1-100	It is used to set the minimum speed ratio of the vehicle when pivot turn, when the joystick is pushed to the right to the maximum. The higher this value is set, the faster the turning speed is. Please set the speed gear to 1, and then adjust this parameter.
11	Ratio of maximum reverse speed	1-100	It is used to set the maximum speed ratio of the vehicle when the joystick is pushed backward to the maximum. The higher this value is set, the faster the forward speed is. Please set the speed gear to 5 and then adjust this parameter.
	Ratio of minimum reverse speed	1-100	It is used to set the minimum speed ratio of the vehicle when the joystick is pushed backward to the maximum. The higher this value is set, the faster the forward speed is. Please set the speed gear to 1, and then adjust this parameter.
12	Straight acceleration	1-255	The default parameter. This parameter can adjust the acceleration effect when going straight, the higher the value, the faster the acceleration.
	Straight acceleration filt	0-255	The default parameter. This parameter allows you to adjust the acceleration effect when going straight, and the value is also large, and the acceleration process is softer.
13	Straight deceleration	1-255	The default parameter. This parameter can adjust the deceleration effect when going straight, the higher the value, the faster the deceleration.
	Straight deceleration filt	0-255	The default parameter. This parameter allows you to adjust the deceleration effect when going straight, and the value is also large, and the deceleration process is softer.
14	Straight brake	1-255	The default parameter. This parameter can adjust the braking effect when driving straight, the higher the value, the stronger the braking.
	Straight brake filt	0-255	The default parameter. This parameter can adjust the braking effect when going straight, the higher the value, the softer the braking process.
15	Acceleration standard	1-255	The default parameter.
16	Swerve acceleration	1-255	Default parameters. This parameter adjusts the acceleration effect when cornering, and the higher the value, the faster the acceleration.
	Swerve acceleration filt	0-255	Default parameters. This parameter adjusts the acceleration effect when cornering, and the higher the value, the softer the acceleration process.
17	Swerve deceleration	1-255	Default parameters. This parameter adjusts the deceleration effect when cornering, and the higher the value, the faster the deceleration.

No.	Display	Default Value	Description
	Swerve deceleration filt	0-255	Default parameters. This parameter adjusts the deceleration effect when cornering, and the value is also larger, and the softer the deceleration process.
18	Swerve brake	1-255	Default parameters. This parameter adjusts the braking effect when cornering, and the higher the value, the stronger the braking.
	Swerve brake filt	0-255	Default parameters. This parameter adjusts the braking effect when cornering, and the higher the value, the softer the braking process.
19	Swerve sensitivity	0-200	The higher the value, the faster the reaction to turning when going straight.
20	Swerve transition	0-200	The higher the number, the smoother the turn.
21	Steer correct	0-100	Matching coefficient of left and right motors. This parameter can be adjusted when the vehicle cannot go straight. Use software to adjust the vehicle when it cannot go straight motor parameter difference. When the parameter is less than 50, the left motor compensates load, and when the parameter is greater than 50, the right motor compensates load. 50 is the intermediate value, which is generally 50 by default.
22	Hall decoding value of left motor	4	Exclusive use for brushless motor (for Linix, Gindun , and Unite brushless motors, this item is 4. For Maotian brushless motors, this item is 6. For other brushless motors, please consult the controller manufacturer)
	Hall decoding value of right motor	6	Exclusive use for brushless motor (for Lianyi, Gindun, and Unite brushless motors, this item is 4. For Maotian brushless motors, this item is 6. For other brushless motors, please consult the controller manufacturer)
23	Automatic adaptation motor	On	This item is only applicable to the SVPWM motor. After starting the machine, make the driving wheel hang in the air. When the motor is not under force (no load), gently push the joystick forward or backward to make the motor automatically adapt. After about 3 seconds, the motor will automatically rotate at a constant speed. Release the joystick, and the motor is successfully adapted.
24	Motor resistance	/	This is factory default parameter and do not change it!
	Battery resistance	/	This is factory default parameter and do not change it!
25	Electric frequency	/	This is factory default parameter and do not change it!
26	Maximum current	/	This is factory default parameter and do not change it!
27	Standing slope value	0-255	The general default parameter is 15. For the controller without electromagnetic brake, generally drive the vehicle in the 8-degree gradient. After the vehicle stops steadily, check whether there is slow backward sliding? Increase this value if there is backward

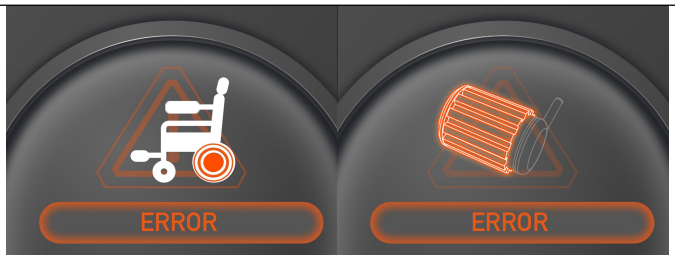
No.	Display	Default Value	Description
			sliding, and the maximum setting is generally less than 15. For the controller with charged magnetic brake, this value should be reduced as far as possible under the condition of meeting the use conditions, which is generally set below 10.
28	Brake off delay value	0-1000ms	When the vehicle stops, the closing time of the electromagnetic brake is delayed. If the value is set too small, the vehicle will stop with a jerk due to its inertia. Please set the parameters properly. This parameter is only applicable to electromagnetic brake motor.
29	Slope starting force	1-100	The minimum starting voltage of the motor can be set when starting. Prevent sliding when start.
	Slope stopping buffer	1-100	The minimum output voltage of the motor can be set. When stopping. Prevent sliding after parking.
30	BlueTooth	Off	The Bluetooth function can be turned on or off by modifying the parameters. If the controller itself has no Bluetooth function, this item is ignored.
31	Mix key	On	The combination button function can be turned on or off by modifying the parameters.
32	Show speed compensation coefficient	/	This item is mainly for LCD models.
33	Gear	0-5	This parameter can set the gear when the controller is turned on, and when it is set to 0, it is the gear memory mode
34	Off time	/	This parameter can set the time of automatic shutdown of the controller.
35	Serial number	/	This is factory default parameter and do not change it!
36	Software version	/	This is factory default parameter and do not change it!

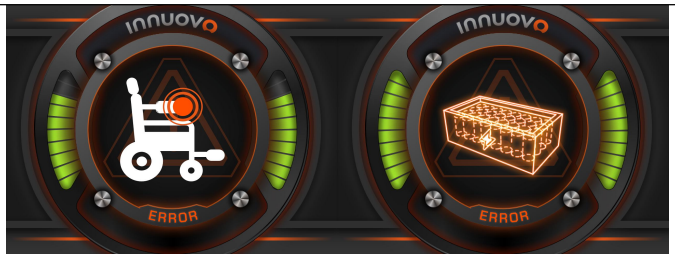
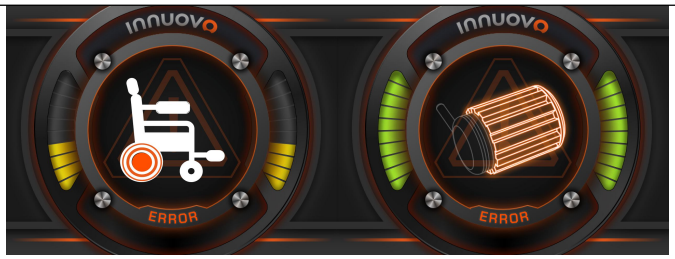
4. Common Faults

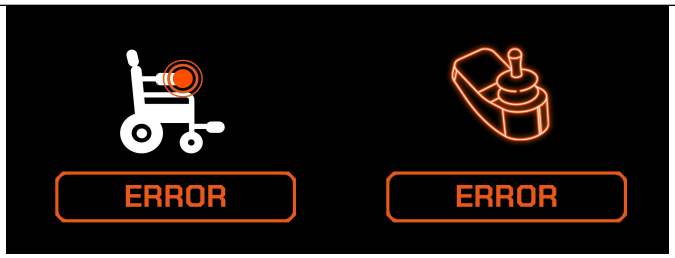
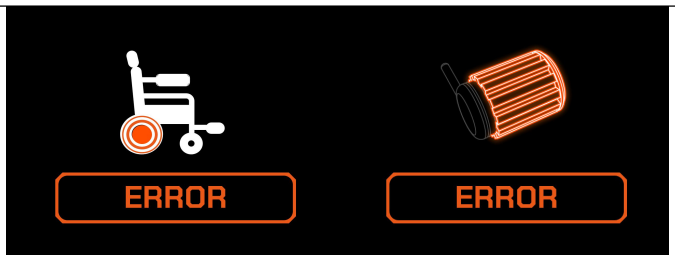
4.1 Fault display description and solution

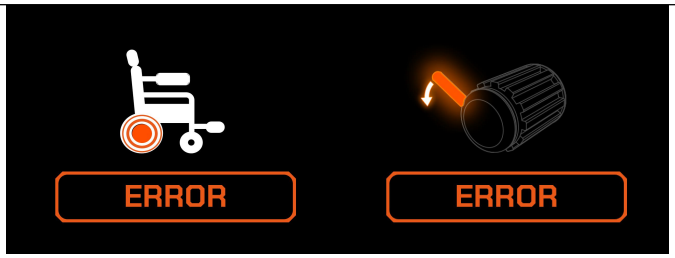
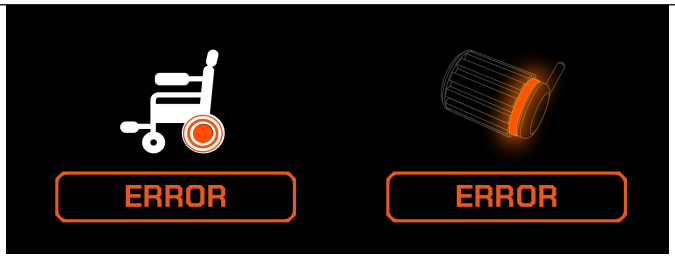
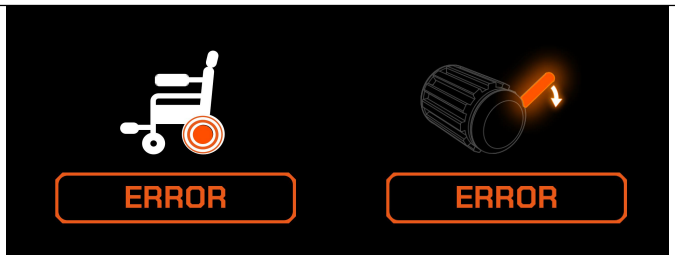
When there is an abnormal condition, the fault information can be determined by the buzzer sound and LCD screen display without using other service tools. The common faults and solutions are shown in the following table.

The fault interface for topic A	
Controller failure	
Joystick failure	
Battery failure	
Right motor failure	
Right Hall Failure	

Right brake failure	
Left motor failure	
Left Hall Failure	
Left brake failure	
The fault interface for topic B	
Controller failure	
Joystick failure	

Battery failure	
Right motor failure	
Right Hall Failure	
Right brake failure	
Left motor failure	
Left Hall Failure	

Left brake failure	
The fault interface for topic C	
Controller failure	
Joystick failure	
Battery failure	
Right motor failure	
Right Hall Failure	

Right brake failure	
Left motor failure	
Left Hall Failure	
Left brake failure	

Cause of Fault	Solution
Controller internal fault	Needs to be returned to the factory for inspection.
Joystick fault	Needs to be returned to the factory for inspection
Right motor fault	Diagnose the cause of the right motor fault: 1. Please check whether the right motor is in poor connection or the wire is disconnected. 2. Please switch the left and right motor wires and power on again. If the controller still makes 4 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 2 alarms, it is the motor fault.

Right motor Hall fault	Diagnose the cause of the right motor Hall fault: 1. Please check whether the right motor is in poor connection or the wire is disconnected. 2. Please switch the left and right motor wires and power on again. If the controller still makes 10 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 9 alarms, it is the motor Hall line fault.
Right motor brake fault	Diagnose the cause of the right motor brake fault: 1. Please check whether the right brake is in poor connection or the brake power off switch is damaged. 2. Please switch the left and right motor wires and power on again. If the controller still makes 5 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 3 alarms, it is the motor brake fault.
Left motor fault	Diagnose the cause of the left motor fault: 1. Please check whether the left motor is in poor connection or the wire is disconnected. 2. Please switch the left and right motor wires and power on again. If the controller still makes 2 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 4 alarms, it is the motor fault.
Left motor Hall fault	Diagnose the cause of the left motor Hall fault: 1. Please check whether the left motor is in poor connection or the wire is disconnected. 2. Please switch the left and right motor wires and power on again. If the controller still makes 9 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 10 alarms, it is the motor Hall line fault.
Left motor brake fault	Diagnose the cause of the left motor brake fault: 1. Please check whether the left brake is in poor connection or the brake power off switch is damaged. 2. Please switch the left and right motor wires and power on again. If the controller still makes 3 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 5 alarms, it is the motor brake fault.

5. Technical Parameters

Adaptive Parameters of Controller			
Battery Type	24V Lead acid battery/Ternary lithium battery/Lithium iron phosphate battery		
Motor Type	24V **Brushless** permanent magnet type		
Electromagnetic Brake Power	24V Total power less than 30W		
Charging Interface	XLR(Canon) connector		
Electrical Performance			
	Minimum	Typical Value	Maximum
Operating Voltage	17.5V	24V	36V
Allowable Reverse Connection Voltage	32V	35V	40V
ShutDown Current(Power-off State)	/	≤1 mA	/
Maximum Driving Current	/	35A	/
Charging Current	/	2A	5A
Brake Output Voltage	15V	24 V	32 V
Brake Output Current	0.7A	1A	1.5A
Working Environment			
Operating Temperature	-25°C to 50° C		
Storage Temperature	-40°C to +95° C		
Operating Humidity	5%~95% No condensation during normal operation		
Protection Grade	IP54		
Heat Dissipation Mode	Natural Cooling		

Note:*When the controller has wireless remote control function (Bluetooth module), the typical value of shutdown current is 3mA.

Maximum temperature used by the controller: the original set value of the product has been optimized to prevent overheating, so as to ensure that the system can operate normally within the normal temperature range.However,users are still advised not to use it for a long time in an environment with too high temperature.

6. Warranty

6.1 Maintenance

- All parts of the electric wheelchair controller shall be checked regularly for looseness, damage or incorrect connection of terminals, connectors and cables. All cables shall be strictly protected to avoid damage. Damaged parts shall be replaced in time.
- All controller parts shall not be exposed to dust, dirt and liquid. If necessary, it should be wiped with a rag dipped in warm water. Do not use solvent based or abrasive based cleaners.
- All controller parts do not need to be maintained by the user. Do not attempt to open the enclosure or repair by yourself, otherwise the product warranty will be invalid.
  If you have any questions, please contact the manufacturer.

User is responsible for maintaining all components in a serviceable condition at any time. Long term exposure to direct sunlight or household chemical solvents will cause the plastic parts to become loose, making the controller less effective or even unable to work normally.

6.2 Quality Warranty

We promise to provide free maintenance service for all products within 24 months from the date of delivery. After the free warranty period, our company will continue to provide maintenance services for customers' faulty products, but will charge a certain maintenance fee.

The product warranty is subject to the following terms:

- The product shall be correctly installed and the set parameter values shall be within the safe operation range before use.
- This product can only be operated according to the instructions of this manual.
- The product is correctly connected to the power supply according to the instructions in this manual.
- The warranty of this product does not cover the loss caused by misuse, accidental loss, and loss caused by modification or refitting by personnel not authorized by the company.

7. Security and Misuse Warnings

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

The following warnings in this manual are applicable to product installers and users. Both of them must read carefully before using this product. Please do not install, maintain or operate this product until you have read this manual completely and understood the correct instructions in the manual. Failure to do so may result in personal injury or property damage.

- Users are not allowed to repair the product by themselves.
- The user is responsible for ensuring that the wheelchair is kept in good operating condition, and must also ensure that all parts, including cables, are protected to the greatest extent to prevent damage. The manufacturer shall inform the user of the above information.
- The parameters can only be adjusted by the professional engineer of the maintenance factory or the person who knows the functions of the whole system very well. Incorrect setting values or parameter settings in unsafe places may cause physical injuries to operators and bystanders, electric wheelchairs or other financial damage.
- When the wheelchair is not used, the user must ensure that the controller power is off.
- When the controller of the electric wheelchair acts abnormally or has abnormal reactions, such as overheating, smoking, and electric wire sparks, do not use the electric wheelchair. Turn off the power system immediately and contact the manufacturer.
- If the electric wheelchair does not operate according to the operation, please turn off the power.
- Make sure that the battery charger is compatible with the socket of this product. Do not operate the wheelchair while charging.
- Do not touch the foot seat of the connector, because dirt or damage may cause abnormal discharge.
- The controller cannot be operated or stored outside the temperature environment specified in this manual.
- Most electronic equipment will be interfered by electromagnetic wave. If there is mobile wireless communication equipment around the equipment, this warning must be observed. The company has taken various measures to ensure that the equipment is free from electromagnetic interference as much as possible, but the equipment may still be interfered by relatively strong electromagnetic signals. The wheelchair manufacturer is responsible for ensuring that the wheelchair is tested and complies with local EMC regulations.

- In case of abnormal behavior caused by electromagnetic interference, please turn off the power supply of the electric wheelchair controller immediately.
- If the error signal flashes during driving, the user must check whether the system operates normally. If it cannot be checked, be sure to turn off the power system and contact the maintenance manufacturer.
- If the user is forced to stay in a certain place and loses the ability to move due to the inability of the product to operate, the user should seek assistance locally.

Warnings for maintenance and setting adjustment

The following warnings apply only to the installation engineer:

- After the electric wheelchair controller is adjusted, please check whether the electric wheelchair controller operates according to the modified parameter settings. If the electric wheelchair does not operate according to the parameter settings, please reset the parameters. Repeat the previous step until the electric wheelchair controller operates according to the modified parameters. If you fail to operate according to the modified parameters, please contact the manufacturer.
- The product has been completely checked when it is installed. Before use, all parameter settings are adjusted within the safe operation range.
- In order to avoid the left and right motor exchange, the connectors cannot be exchanged with each other. Therefore, we recommend labeling or marking the motor.
- The frame of the electric wheelchair controller cannot be used as the grounding wire. Using the frame of the electric wheelchair as a conductor will cause safety accidents.

8. Contact

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