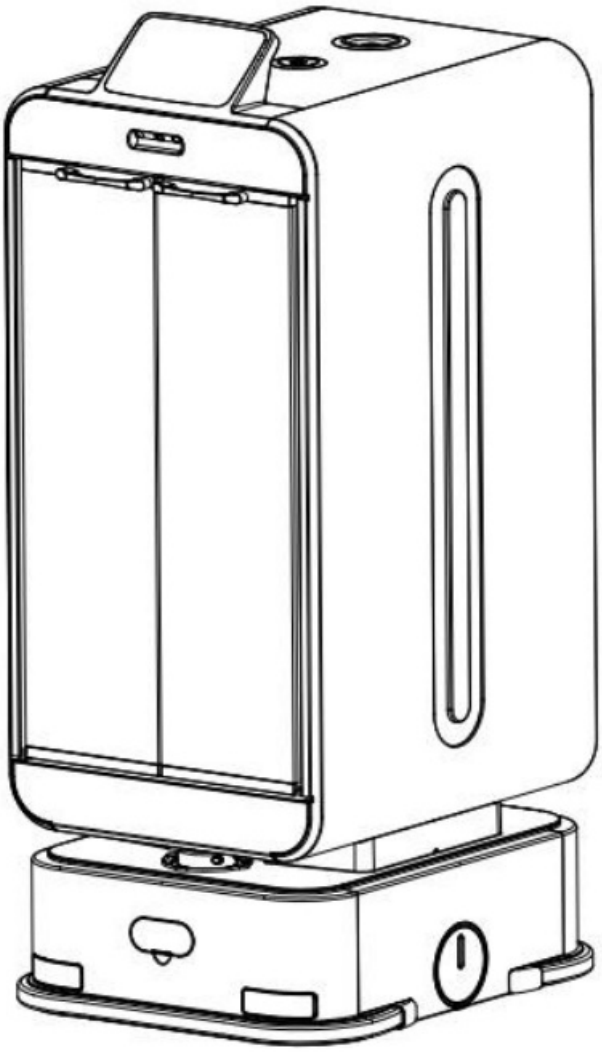
KEENON T2 Intelligent Transportation Robot Instruction Manual

T2 PEANUT Intelligent Transportation Robot Product Manual



Contents

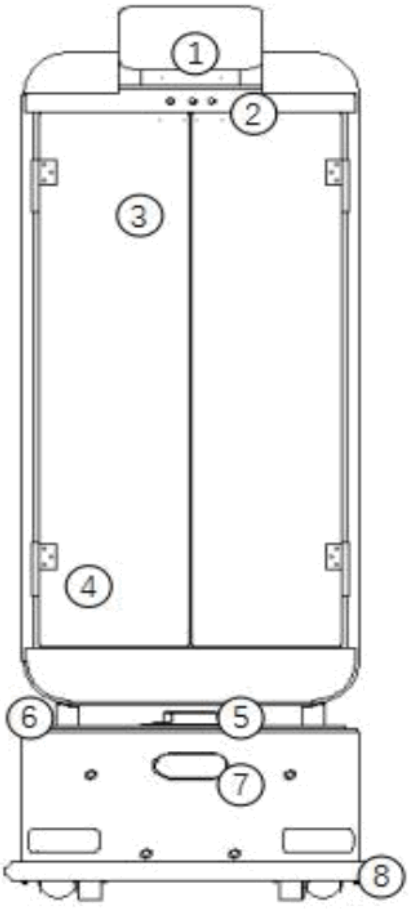
Statement

Introduction to this Manual

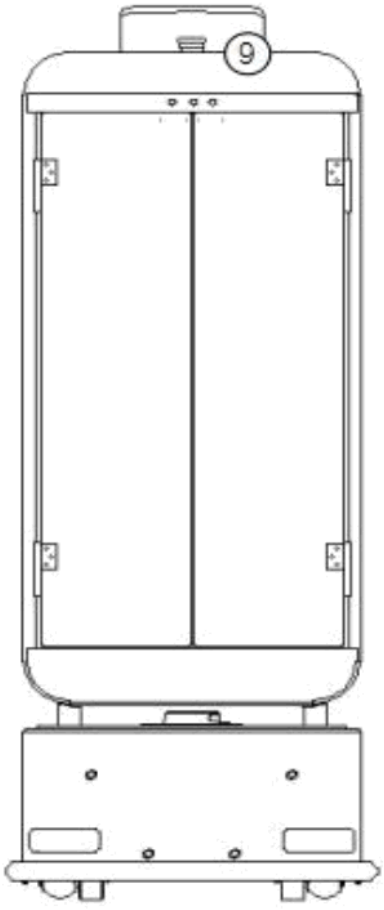
This Manual principally presents the functional properties, methods of installation and use, and precautions during the use of the PEANUT Intelligent Transportation Robot. This Manual covers the following contents:

1. Introduction to the robot: It briefs the basic functional properties of the robot and elaborates the structural information of the robot.
2. Operating steps: It presents the preparatory work and precautions in installing and using the robot.
3. Appendix: It presents the common faults, detailed technical parameters, and safety precautions in connection with the robot.

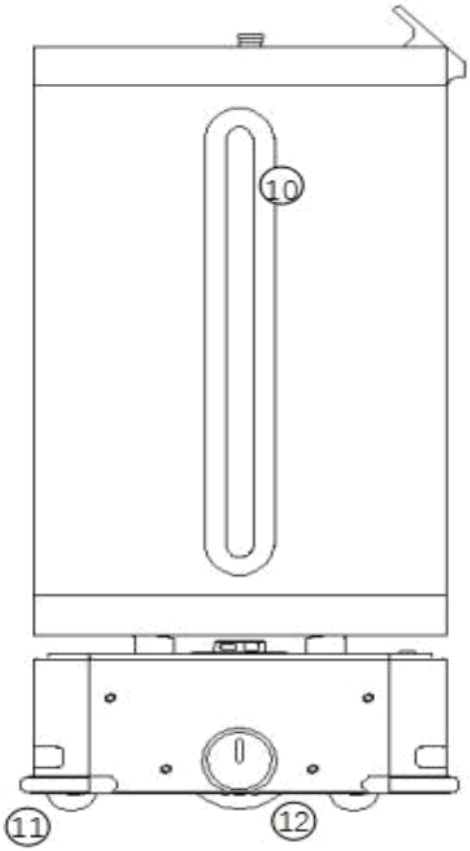
“Three Guarantees” Certificate (for repair, replacement, or compensation of faulty products).



Front View



Rear View



Side View

1. Hand-touch area
2. Stereo vision
3. Doors
4. Doors shaft
5. Laser
6. Laser layer space
7. Manual charging port
8. Safe touch edge
9. Emergency stop switch
10. Decorative strip
11. Universal wheel
12. Driving wheel

Figure 1 Structure of PEANUT Intelligent Transportation Robot Note: The above figure is for reference only, and it shall be subject to the actual object for the appearance and color of the specific product.

Introduction to the Robot (to Know the Robot)

- **PEANUT** Intelligent Transportation Robot is suitable for public indoor environments such as restaurants, hotels, shopping malls and supermarkets, cinemas, KTV, business offices, etc.
- **PEANUT** Intelligent Transportation Robot realizes such core functions as full-automatic positioning and navigation, intelligent obstacle avoiding, etc. on the strength of machine vision and laser radar. It can move in a full-automatic manner in indoor environments. rendering varieties of services such as delivering restaurant

food, transferring office documents, express distribution, etc.

- The product mentioned in this Manual is of the T2 model of the food-delivery robot.

Body Structure of the Robot

Figure 1 displays the body structure of the PEANUT Intelligent Transportation Robot. The robot chassis is of a two-main-wheel and four-engaged-wheel structure. It achieves automatic positioning on the strength of machine vision and laser radar and integrates touch switches and other sensors to implement the function of intelligent obstacle avoidance. Besides, its touch screen is set for users to operate the robot system.

Operating Steps (to Use the Robot)

When starting to use the robot, the user should operate in the following steps carefully.

Installation

1. Robot Mapping Before the robot moves automatically, it needs to get familiar with the environment around, it and store and identify the operating environment by way of a map. This step is called mapping. (It is completed by professional technicians in advance and users do not need to operate it by themselves.) When there exist significant changes in the indoor environment of the robot (such as redecoration is launched, the robot is moved to a new place of operation or indoor items are rearranged, etc.), the user should contact customer service personnel at 400-9651-808 to rebuild the map.

Startup

1. **Switch on/off**

   The power switch is set on the chassis behind the robot. When the silicone cover under the chassis is opened, the user can see the button on the right, which is the power switch. Find the position of the power switch in the position exhibited in Figure 2, and press the power switch by hand to start the robot. The system cannot be put into normal operation until it starts for about 40 seconds. When the power of the robot requires to be turned off, the user should turn off the power switch in the same manner. After the power switch is turned off, the machine will be powered off at once.

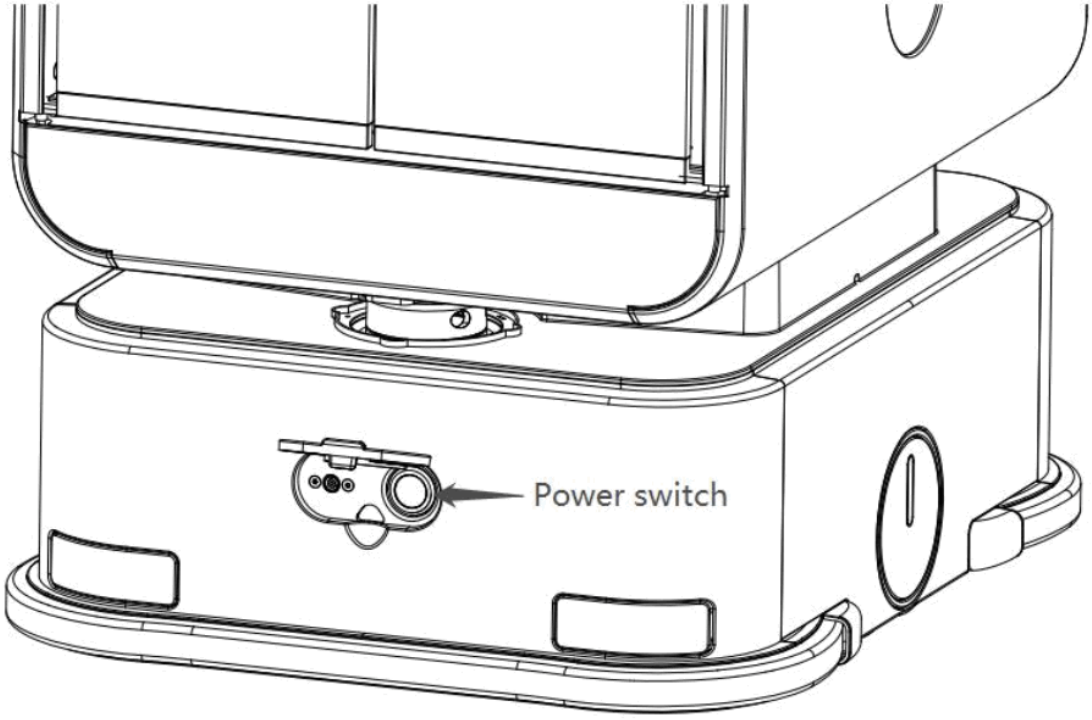


Figure 2 Schematic Diagram of the Position of the Power Switch

2. **Startup of PEANUT APP**

   1. After the power switch is started, the system desktop will display the LOGO of a startup, animation of PEANUT and Android desktop in sequence and the system will start for approximately 40 seconds.

   2. The PEANUT APP will be automatically opened after the system is started by default. If the PEANUT APP is not systematically opened, the user should find the PEANUT icon on the system desktop, as demonstrated in Figure 4, and the APP can be started by clicking this icon.

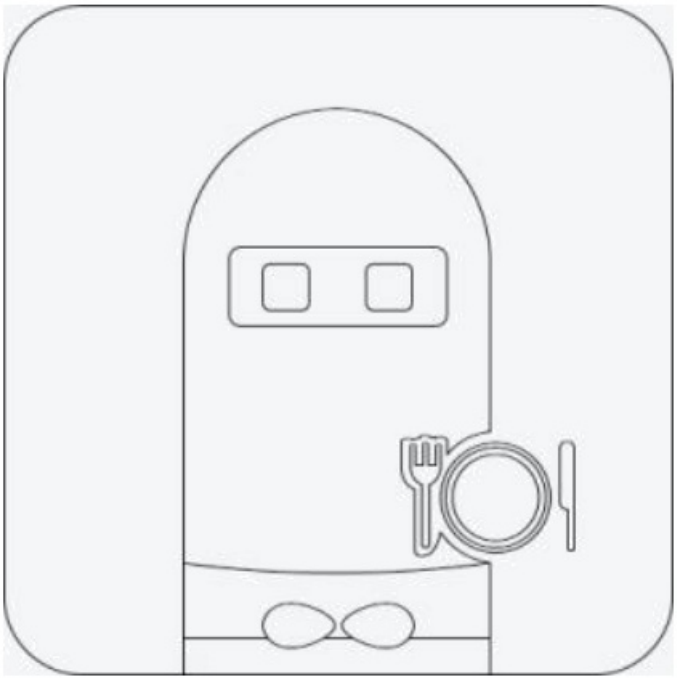


Figure 3 Icon of PEANUT APP

After PEANUT APP starts, the user can use the PEANUT robot normally.

Setup

The user can set the robot via the PEANUT APP, and the steps to enter the setup page of the robot are specifically as below:

1. Click the “III” icon in the upper left corner of the home page to enter the menu page of the software function theme.
2. Click the icon of the [Robot Settings] of the PEANUT APP to enter the setup page.

1. Connect WI-FI

When using it for the first time, the user should access the robot to the network via WI-FI, and the setup steps are specified as below:

1. Turn on the WLAN (WI-FI) function of the system and search for available WI-FI.
2. Select the available WI-FI and enter the password.
3. Click the [Connect] button until the WIFI connection is successful.

2. Adjust the Volume Level

If the system menu bar is displayed at the bottom of the screen, directly click the volume button to adjust the volume. If not, follow the following steps:

1. Click the [Robot Settings] icon of the PEANUT APP to enter the page of settings management.
2. Select the [System Setup] menu, cancel [Hide Menu Bar], and find the volume control button at the bottom of the screen.
3. Click the volume adjustment button on the right to increase the volume.
4. Click the volume adjustment button on the left to reduce the volume.

3. Hide the Status Bar

1. Click the [Robot Settings] menu on the selection page of the software menu to enter the setup page of the APP.
2. Click the [System Setup] menu.
3. When clicking [Hide Status Bar], a blue check icon will be displayed, and the status bar on the desktop will be hidden; when clicking [Hide Status Bar] again, the blue check icon will disappear and the status bar will be displayed.

4. Setting of Guardian Mode

When the [Guardian Mode] of the robot is turned on, the robot will automatically detect whether to run the PEANUT APP and to automatically turn on the PEANUT APP. The operating steps are specified as below:

1. Enter the page of robot settings, click [System Setup] to slide the button on the right of [Guardian Mode] to the right. When the button turns green with the word “On”, the Guardian Mode will be on, and the PEANUT APP will restart automatically after it is accidentally closed.
2. Click the button on the right of [Guardian Mode], and the button will slide to the left. When the button is white with the word “Off”, the function of guardian mode will be turned off. PEANUT APP will not open automatically after it is turned off. It cannot be operated until the APP icon is manually clicked.

5. The operating steps for the boot-up and self-starting settings are specified as below:

By default, the system will automatically start the PEANUT APP. When the PEANUT APP does not start automatically, the user should set the PEANUT APP to start automatically in the following steps:

1. Enter the setup page of the robot, click [System Setup] and then slide the button on the right side of [Boot-up and Self-Start] to the right. When the button turns green with the word “On”, the boot-up and self-starting function will be turned on; after successful setup, the robot will automatically start the PEANUT APP every time it starts up.
2. Click the button on the right side of [Boot-up and Self-start] and slide the button to the left. When the button turns white with the word “Off”, the boot-up and self-start will be turned off.

6. The operating steps for setting the robot name are specified as below:

1. Enter the setup page of the robot, and click [Robot Name] in [System Setup] to enter the setup page of name (nickname).
2. Set the name, click the [Save] button in the upper right corner of the page to return to the system setup page, and then the name can be displayed.

Distribution

After the staff has created the map, the robot can work for you. The operating steps are specifically as below:

1. Place the articles to be delivered on the robot tray.
2. Start PEANUT APP automatically after the system is turned on. The upper left part of the home page displays the label page of the type of restaurant room; select [Hall] or [Box] respectively to enter the corresponding page.
3. Select the table number on the [Hall] page and the room number on the [Box] page. After selection, the corresponding label will be highlighted in blue and the robot icon on the right will display the destination in real-time.
4. Click the [Start Now] button on the lower right.
5. When the page jump to the interface [On the Way], the robot will start to move to the target carrying articles, and there will be a voice reminder as well.
6. When the robot arrives at the destination, it will be prompted by voice. Click [Return] after taking the goods, or touch the hand-type touch area above the eyes with the hand, and the robot will return to the starting point and the page will automatically return to the home page.

Charging

1. Adapter Charging (it is forbidden to operate the robot during the adapter charging process) The user can charge the robot through the adapter in the following steps:

1. Turn off the power switch of the machine.
2. Open the silicone cover outside the back of the robot [Manual Charging Interface], and connect the robot with the charging plug of the adapter.
3. After successful connection, the adapter indicator will turn red and the screen interface will jump to the charging page, suggesting that charging is in progress.
4. When the indicator light of the adapter turns green, it suggests that the charging is complete. Please

disconnect the adapter and plug the silicone cover outside the charging interface of the robot.

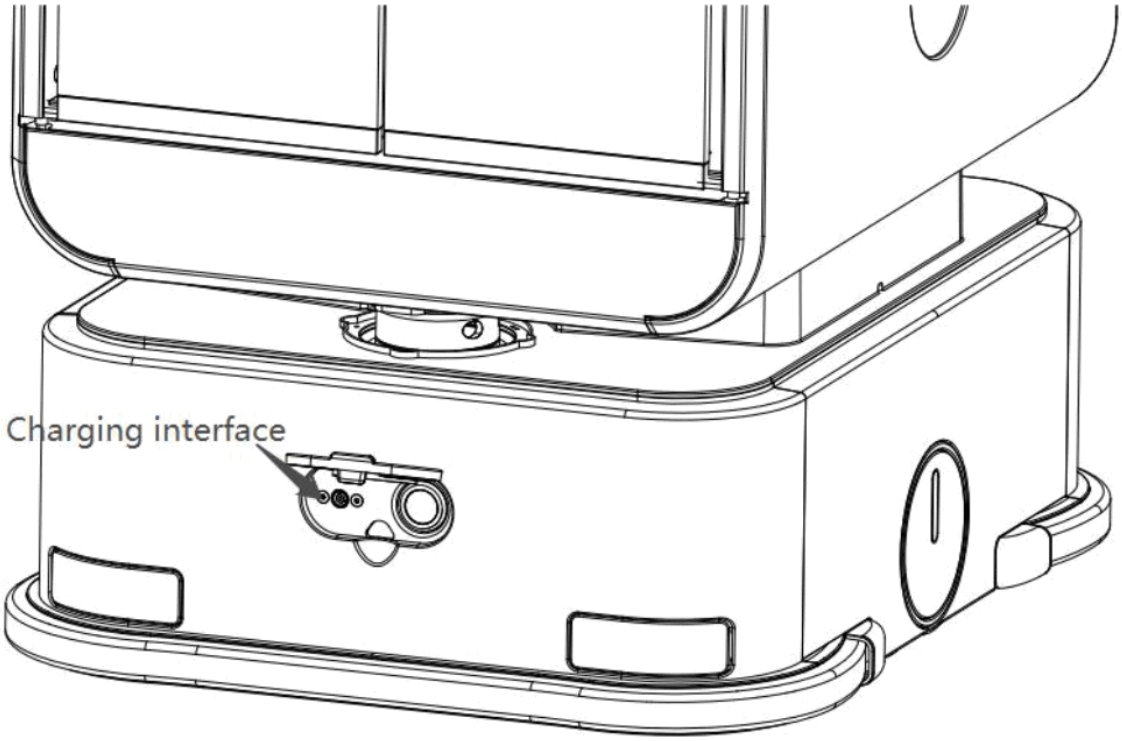


Figure 4 Schematic Diagram of the Position of the Charging interface

Emergency Treatment

When the robot is moving, the user is required to push and move the robot by hand, or when the robot is in an abnormal running state, which may result in damage to the surrounding environment, etc., the user can stop the robot by pressing the emergency stop switch on the back of the robot. The position and operating steps of the emergency stop switch are demonstrated in Figure 5.

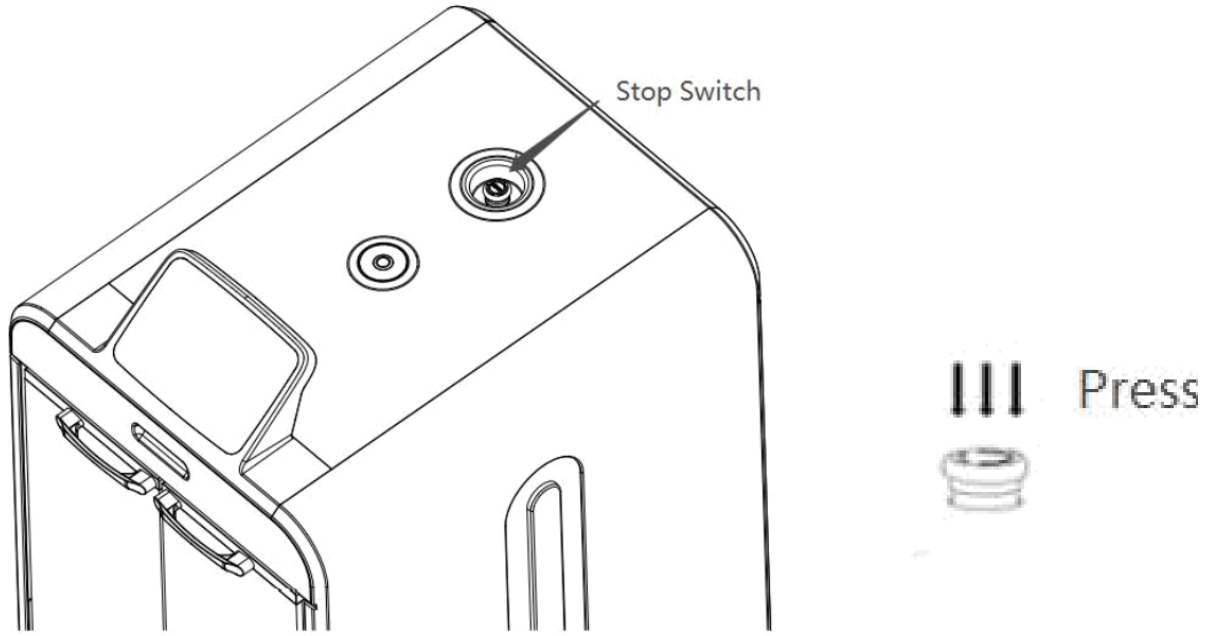


Figure 5 Local Enlarged Drawing after Opening the Outer Cover of the Emergency Stop Switch
The emergency stop switch of the robot is at the top of the robot, i.e. the position indicated by numeral 19 in the figure. Press the red emergency stop switch to stop the robot under emergent circumstances.

Appendix

List of Exceptions and Clearing of Faults

Fault Phenomenon	Possible Causes and Solutions
The robot cannot start normally	1. There is not enough electricity, and the user should connect the robot for charging via the adapter. 2. For other reasons, please contact customer service personnel.
The robot cannot be charged normally	1. Press the yellow light of the adaptor, and the signal light truns into red. 2. For other reasons, please contact customer service personnel.
The robot cannot move or navigate	1. The robot is in the blind area of the map. The user should turn off the robot and push it to the vicinity of the charging pile to start navigation again. 2. The vision module is covered, and the user should ensure that the vision positioning module is not covered. 3. Radar failure of the robot occurs, and the user should check whether the radar rotates normally. 4. The collision switch of the robot is faulty, and the user should check whether the collision switch is squeezed or not. 5. For other reasons, please contact customer service personnel.
The robot cannot play voice	1. The voice of the robot is off or the volume is too low, and the user should reset the voice 2. For other reasons, please contact customer service personnel.
The robot moves abnormally	The user should turn off the power supply of the machine immediately and contact the customer service personnel for handling.
The robot falls	The user should turn off the power supply of the machine immediately and contact the customer service personnel for handling.

Performance Parameters of the Robot

Model	T2
Product size	590.470..1315 mm
Tray size	570*420*253 (Three Tray)
Net weight of the product	75Kg
Maximum walking speed	I m/s
Maximum load	The below layer reaches to 20kg, other layers reach 10 kg
Maximum climbing angle	Slope < =5 degrees
Network type	WIFI/4G/Bluetooth
Battery capacity	DC 48V 12Ah
Rated power	50W
Standby current	Standby current < 0.5A
Battery life	Continuous work > 12-14 hours
Standby time	Standby time > 48 hours
Service life	20000h
Working temperature	0 – 45°C,R1-1:5%-85%, no dust.
Working environment	Indoor environment, flat and smooth ground
Charging mode	Manual charging, input rated voltage 220V/50Hz

Safety Instructions

Restrictions:

This product is a wheeled robot, which is only used in an indoor flat environment (the ground should be smooth, with the slope being less than 5 degrees and the protrusion not more than 1cm). Do not use it in an outdoor environment (such as an open balcony), on the rugged ground (such as stairs), etc.

Please do not use it in the suspended environment (e.g. duplex floor, open balcony, top of house, stairs) or environment without a fence.

Please do not use it in an environment above 50 or below 0 or in an environment with any liquid or viscous substance on the ground.

Before use, the user should put away all sorts of wires on the ground in the environment to avoid dragging them when the main machine is running.

Before use, the user should remove sharp objects on the ground (such as decoration waste, glass, nails, etc.) to avoid damage to the chassis of the machine.

Please do not place any non-transportable objects (including children and pets) on stationary or running machines.

Please do not push or carry the robot while the machine is moving.

The user should not move the machine at will but should carry it in strict accordance with the User's Manual.

Please clean and maintain the main machine and charging pile when it is in a shutdown or power-off state.

Please do not use hard or sharp objects to collide with the robot. Please do not spill any liquid into this product.

Please do not push down the main machine or place it upside down. The robot is an electronic product, and the

user should keep it away from fire.
If the user needs to transport the product, he/she should ensure that the main machine is turned off and it is recommended to use the original packaging box for packaging. The user should use this product based on the instructions in the User's Manual or the Introduction Guide.
If any loss or injury is caused due to improper use, the user shall be responsible for it.

Battery and Charging:

Please do not arbitrarily use any third-party battery, power adapter or charging post.
Please do not arbitrarily disassemble, repair, or refit batteries or charging piles without permission.
Please do not arbitrarily throw away the discarded batteries at will. It is suggested that they be disposed of by a professional organization.
If the user does not use the product for a long time, the user should switch off the main machine after a full charge and put it in a cool and dry place.
Charge it at least once a month to avoid battery damage.

"Three Guarantees" Certificate

The after-sales service of this product renders after-sales "three guarantees" services strictly in compliance with the "Consumer Rights Law of the People's Republic of China" and "Product Quality Law of the People's Republic of China". The service contents are specified as below:

Warranty Period:

1. If there is a non-human performance failure within 7 days from the date of purchase, the buyer can choose to return, exchange or repair the goods.
2. If there is a non-human performance failure within 15 days from the date of purchase, the buyer can choose to replace or repair the goods.
3. If there is a non-human performance failure since the date of purchase and within the warranty period, our company promises to guarantee it free of charge.

Warranty Coverage:

Name……..Warranty period
Main machine…….. 1 year

Non-warranty Clauses:

The warranty service is only valid under normal use. Damage due to human factors and the following clauses are not covered by the warranty.

1. Product damage due to negligence, fault, misuse, or disaster damage of the user (e.g. food liquid stains, product water ingress, external force cracking, scratches and damage of peripheral components, etc.).
2. The user dismantles the machine by him/her and repairs and refits it arbitrarily without the approval of the manufacturer.
3. Product damage due to connection to improper accessories, transportation, and other accidents.
4. There is no "Three Guarantees" Certificate (except those that can prove that the product is within the three-guarantee period), or the product has exceeded the three-guarantee period.
5. The contents of the "Three Guarantees" Certificate are inconsistent with the physical identification of the goods or have been altered.
6. Damage due to force majeure.

Product Warranty Card:

Product information	Product model:	SN code:
User information	Name:	Date of purchase:
	Telephone:	Email:
	Address:	Purchase address:
Sales unit information	Dealer:	Dealer stamp

Documents / Resources

	KEENON T2 Intelligent Transportation Robot [pdf] Instruction Manual T2, Intelligent Transportation Robot, T2 Intelligent Transportation Robot