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# **sf-controller**

***Release 1.0***

**sunfounder**

**Aug 18, 2023**

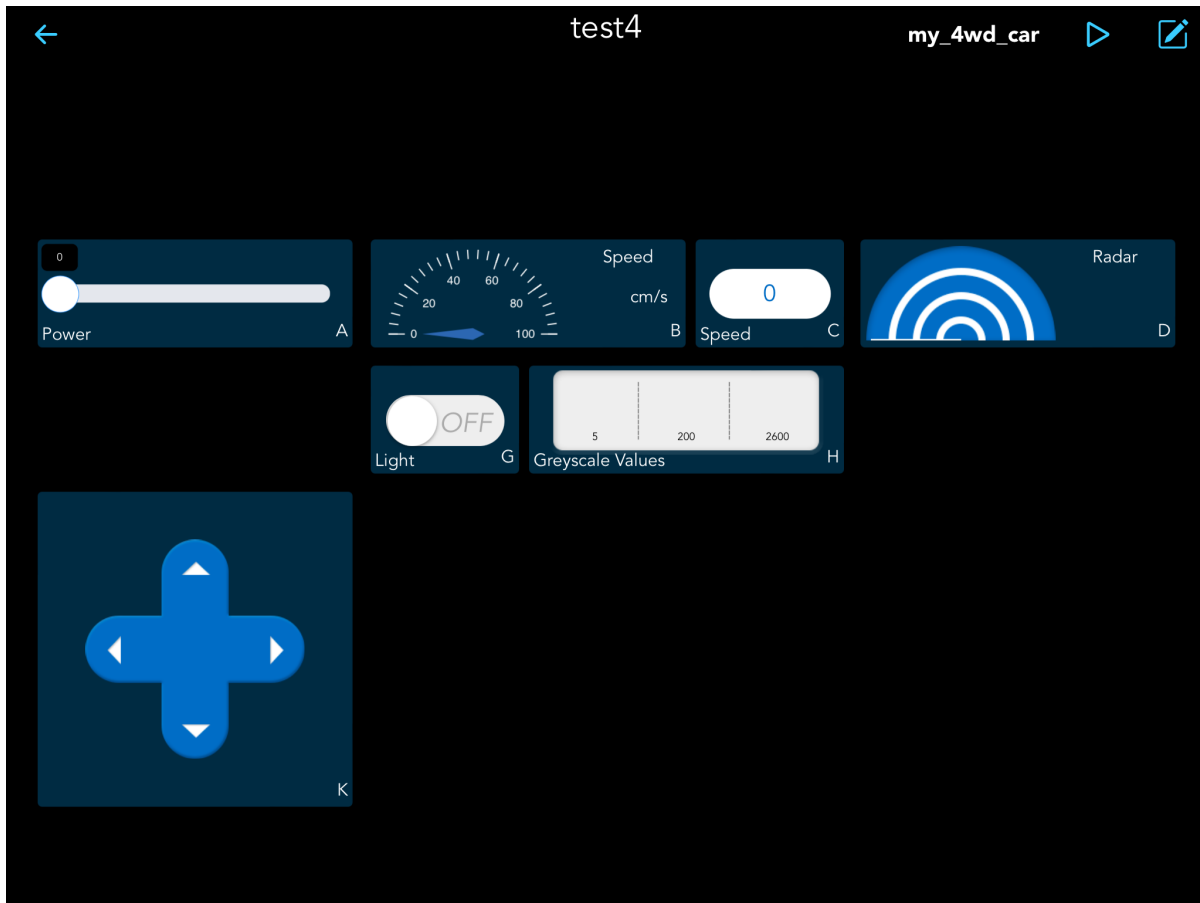


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Introducing the SunFounder Controller app – your gateway to personalized robot control and an IoT platform.

Designed to work seamlessly with Raspberry Pi, Raspberry Pi Pico/Pico W, and Arduino, this versatile application empowers users to tailor their control experience.

Within the app, you'll find a collection of 11 diverse show and control widgets, including Buttons, Joysticks, Gauges, and Radars.

The controller interface offers a canvas of 17 designated areas labeled A to Q. These zones serve as your creative space to strategically position various widgets, crafting a controller layout that aligns with your preferences.

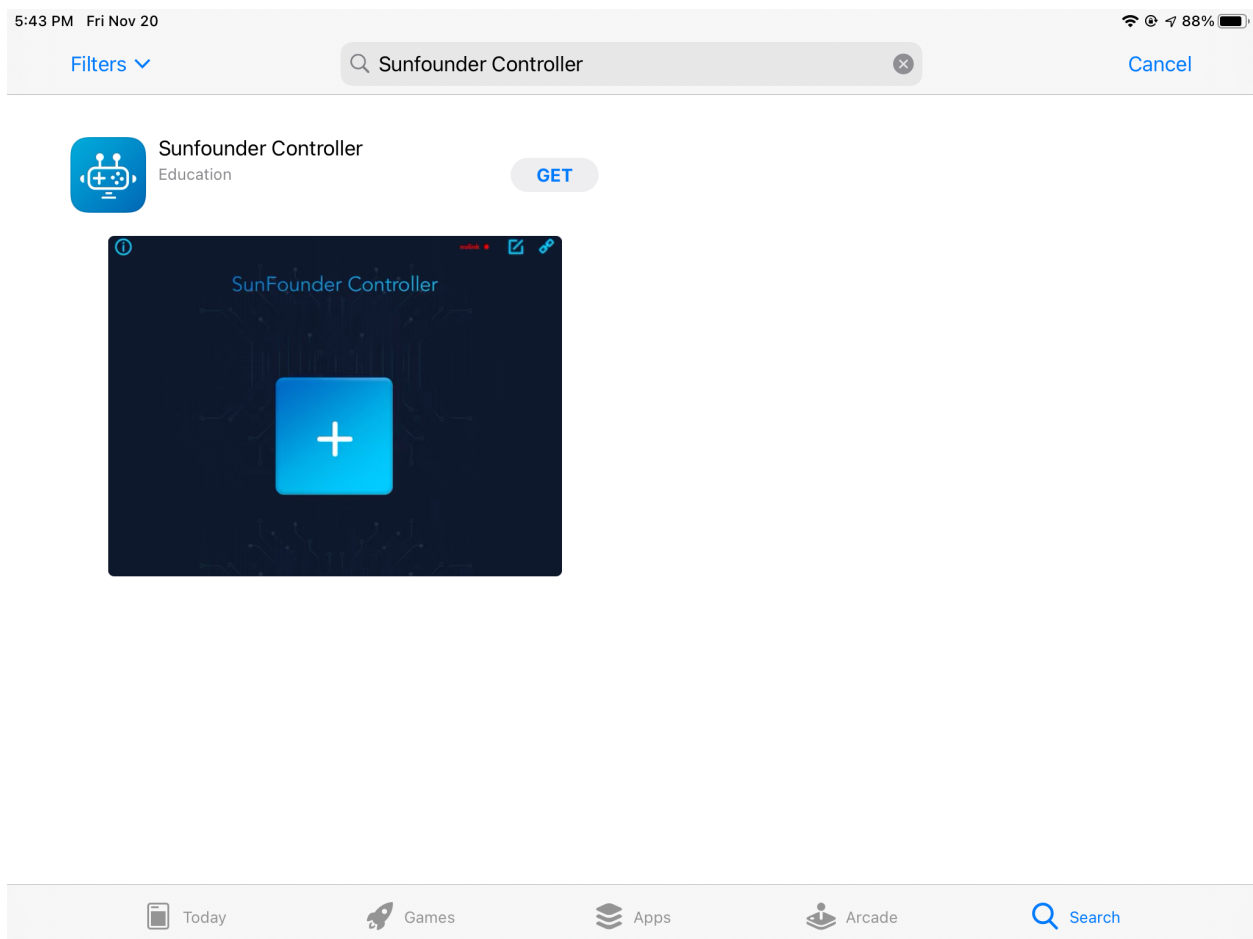
But that's not all. This app goes beyond traditional control, boasting functionalities like real-time video streaming, AI image recognition, and voice command recognition.

Elevate your control experience with the SunFounder Controller app – where customization meets innovation.



## INSTALL SUNFOUNDER CONTROLLER

Install SunFounder Controller APP from APP Store(iOS) or Google Play(Android).



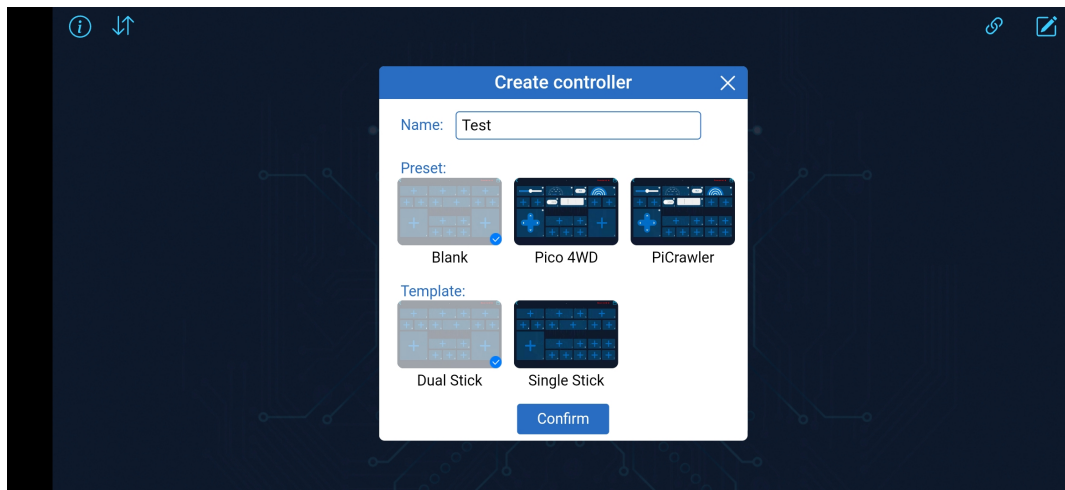


## HOW TO CREATE A CONTROLLER?

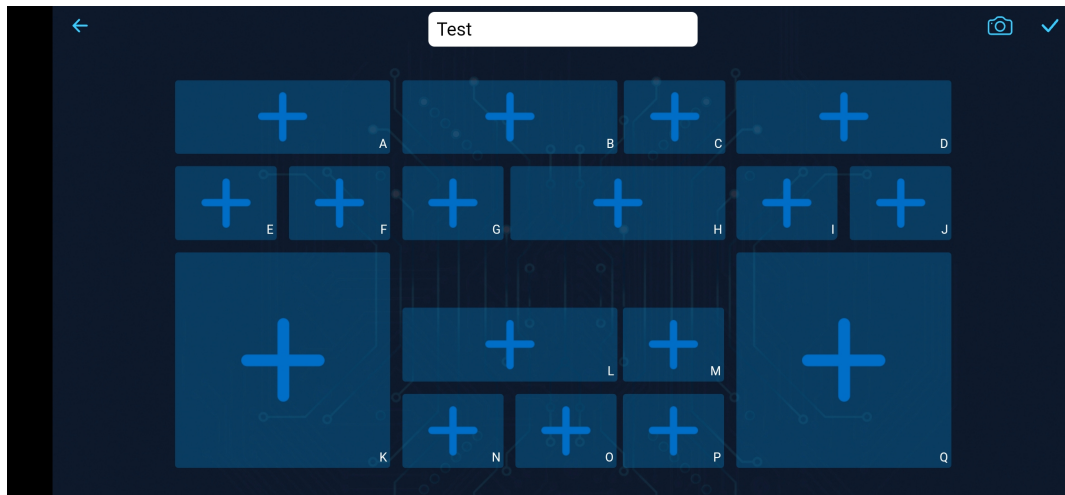
1. Open the APP and tap the + button on the home page to create a controller.



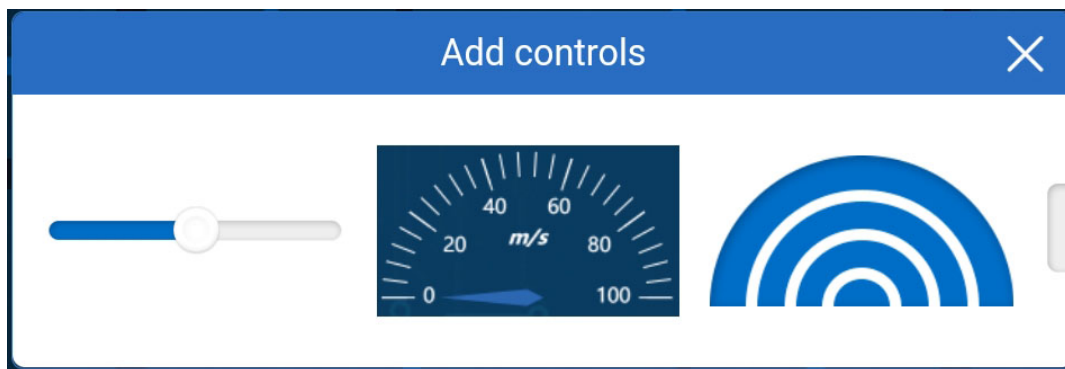
2. There are preset controllers available for some of our robot kits, so you can choose as you need. Here we choose **Blank** and **Dual Stick**.




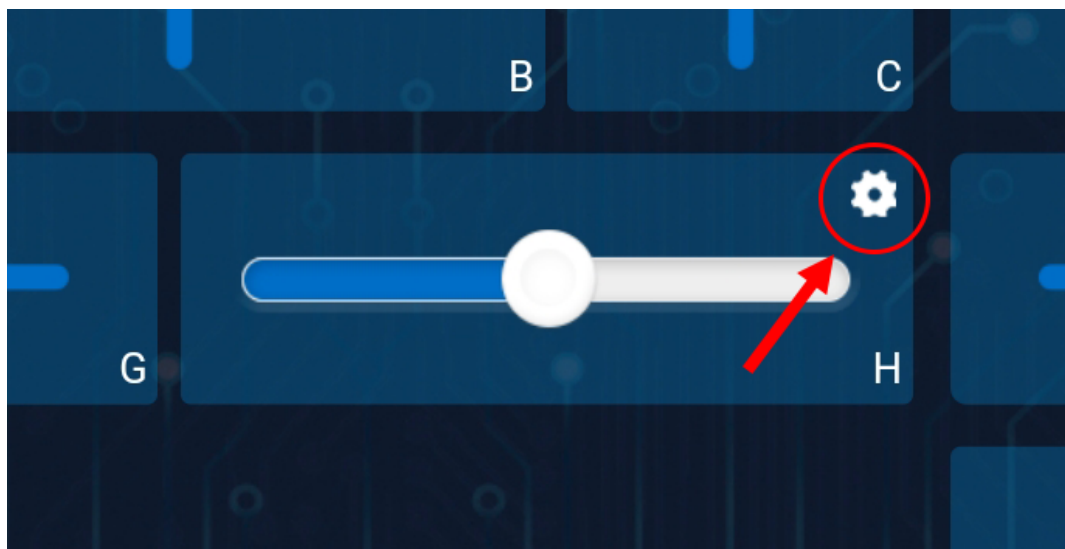
3. Now we get an empty controller.



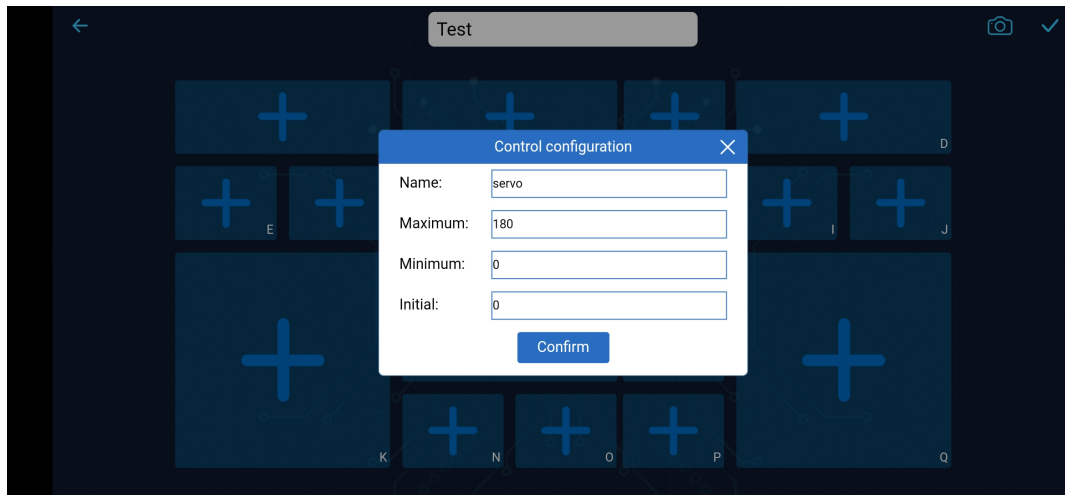
4. A controller has three different shapes of squares for adding widgets. Choose the widget from the pop-up widget list according to your needs by tapping the + sign.




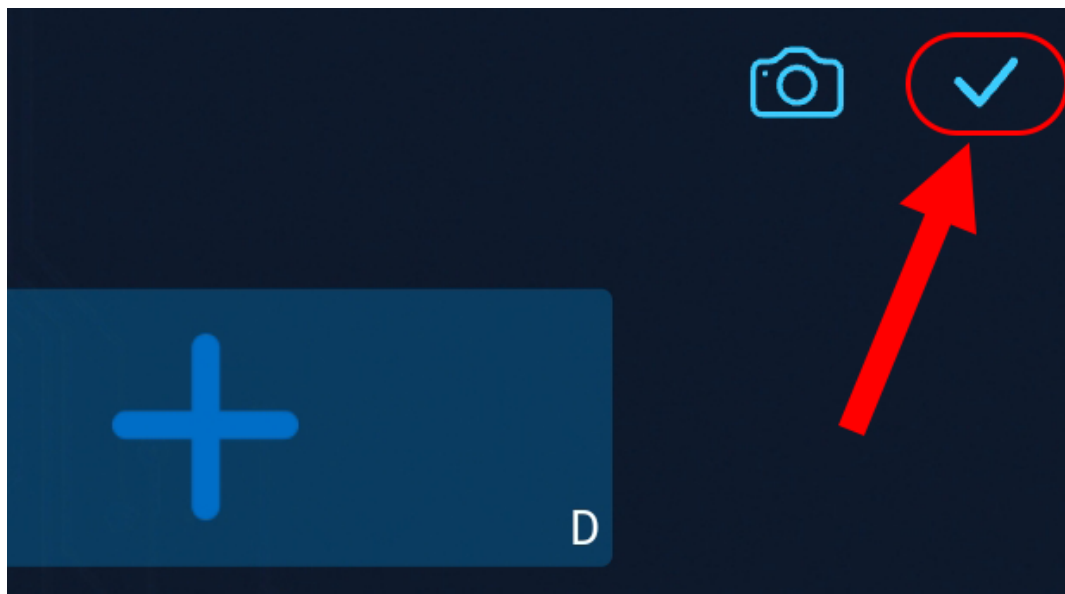
5. In order to easily know its functions and working range, you need to set it up by tapping on the  button.



6. Set the Maximum and Minimum, then tap to **Confirm**.




7. After finishing the widget settings, tap the  button.

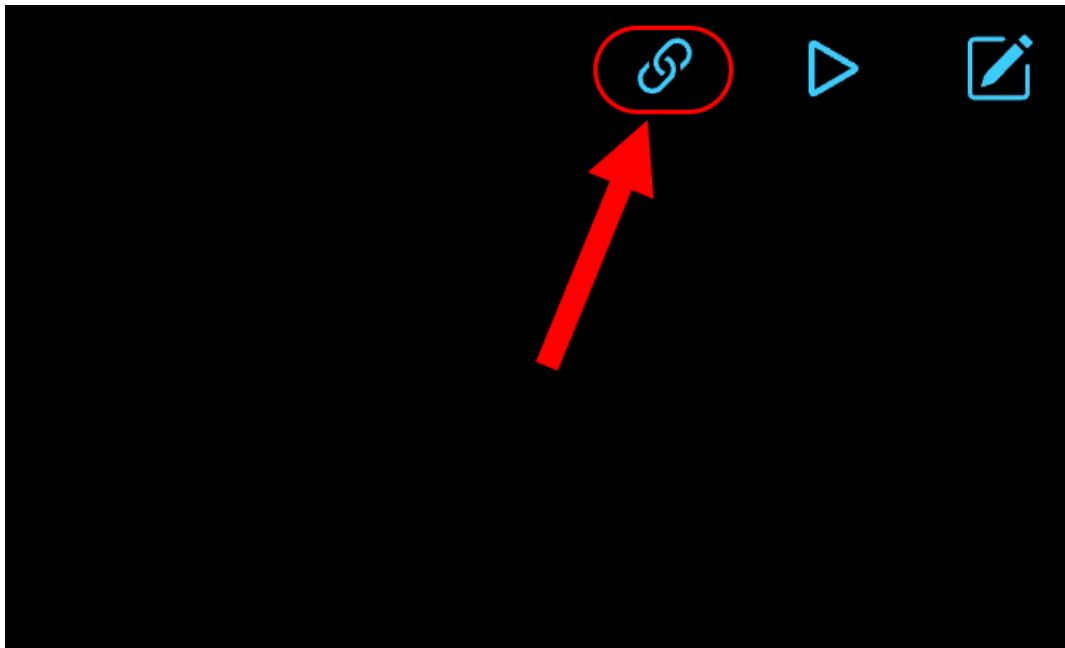





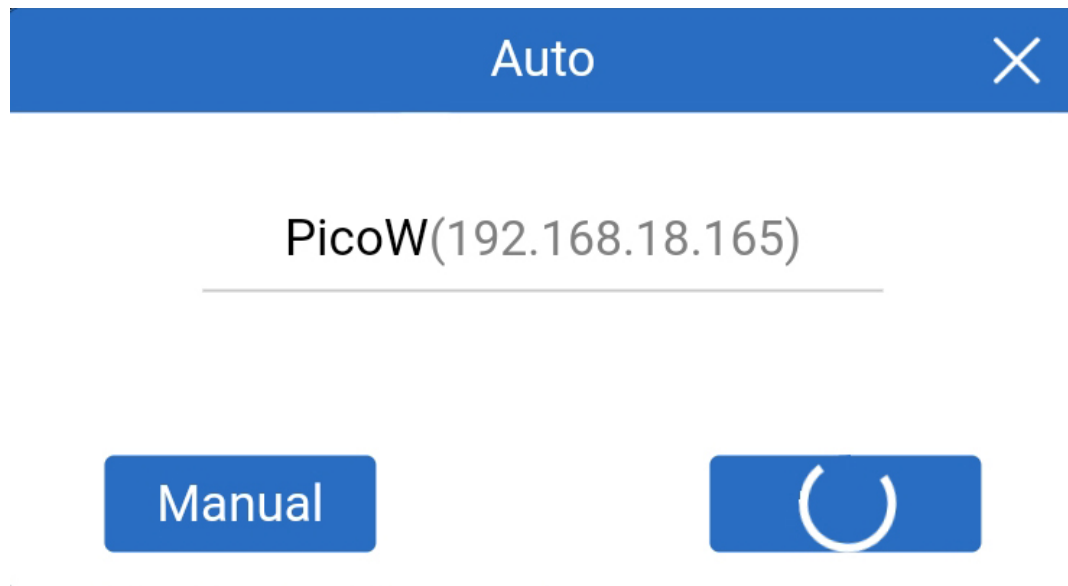


## HOW TO CONNECT SUNFOUNDER CONTROLLER AND PRODUCTS

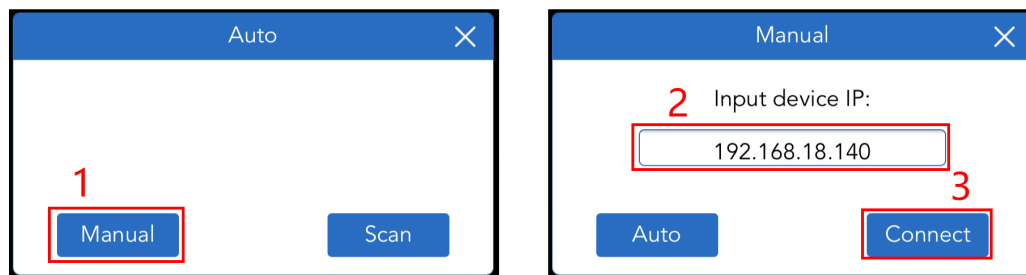
1. Connect your mobile device to the network.
  - When your product is in AP mode, the mobile device must be connected to the LAN issued by your product.
  - Connect the mobile device to the same WLAN as your product after you run the code in STA mode.
  - Please refer to the online documentation for each product for more details.
2. Open the SunFounder Controller APP, tap the  button.




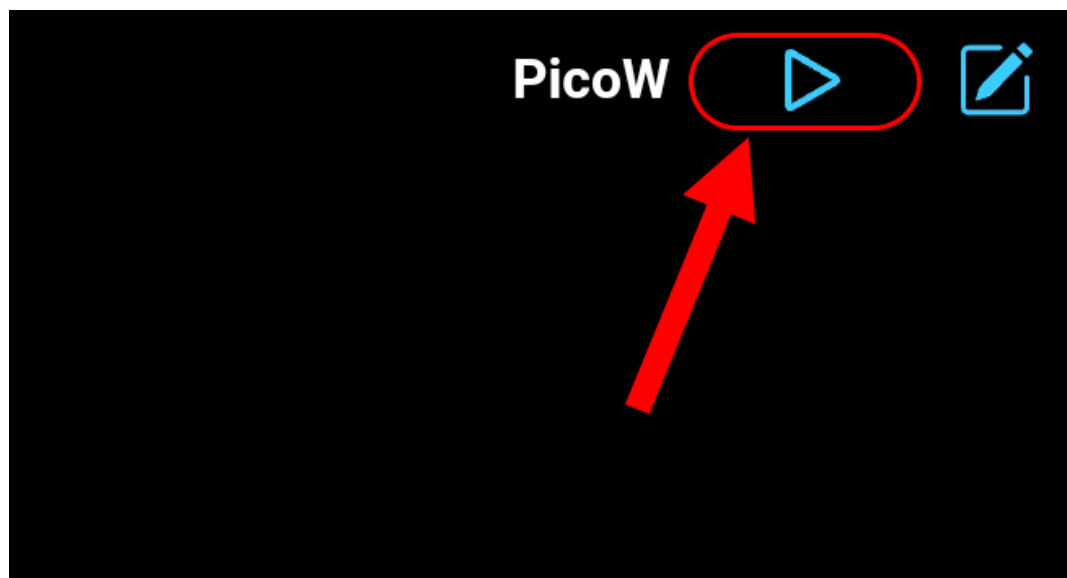
3. When you tap on the  icon, if your product has run the code, the product name + IP will appear and you need to tap this to connect.



**Note:** If it doesn't search automatically, you can also manually enter the IP to connect.

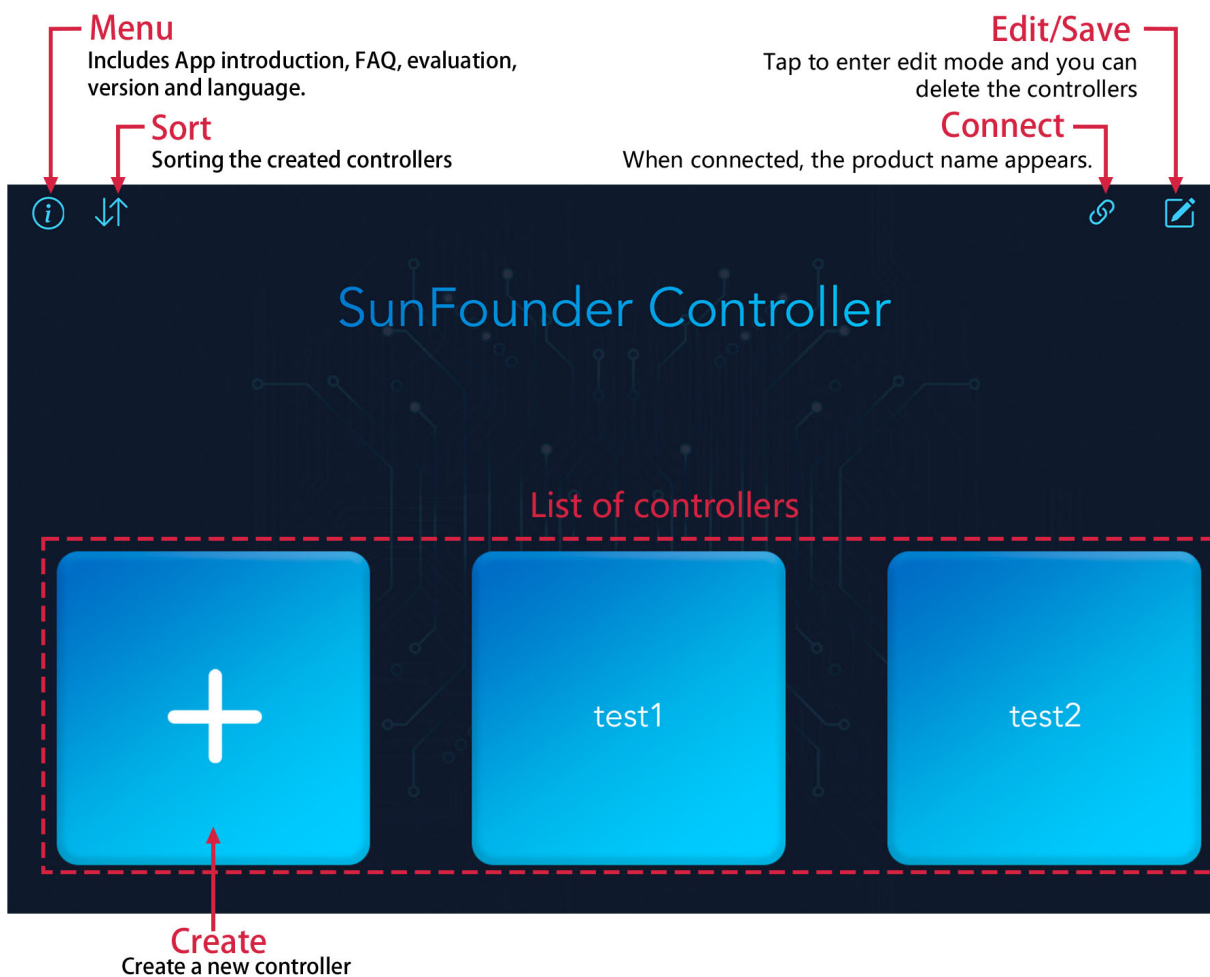


4. If you have successfully connected your product, tap the  button to turn on the controller, then you can use it to control your product.



## PAGE INTRODUCTION

### 4.1 Home Page




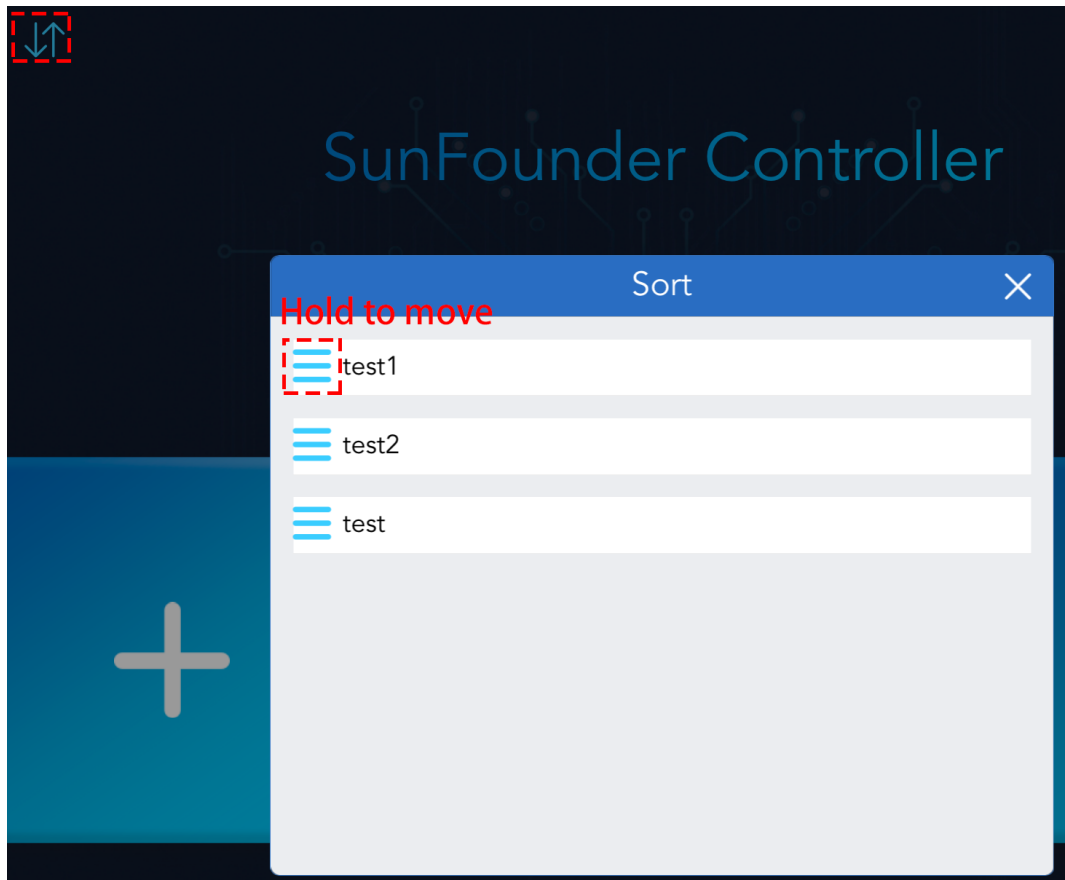
### 4.1.1 Menu




- **About Us:** A description of SunFounder Controller and the company.
- **FAQ:** It will jump to this document when you tap it.
- **Evaluation:** It will jump to APP Store or Google Play, where you can evaluate it.
- **Version:** shows the current app version.
- **Language:** There are two display languages, Simplified Chinese and English, you can choose according to your needs.


### 4.1.2 Sort

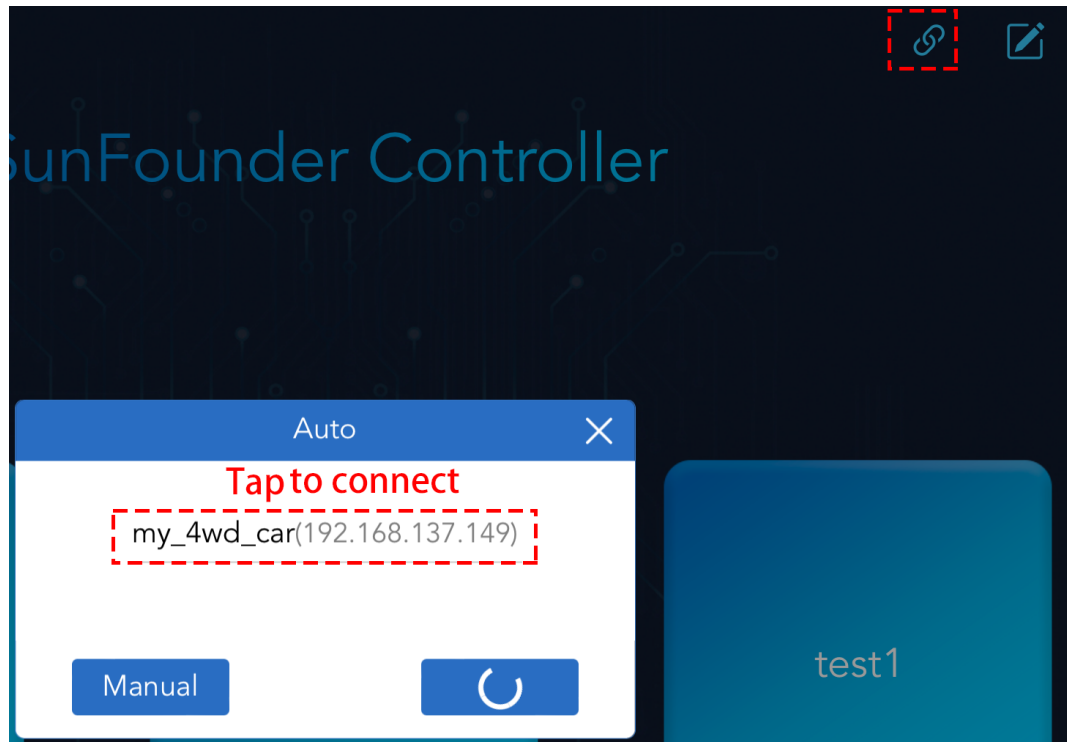
1. Tap the  button in the upper left corner of the home page.
2. Drag the icon to adjust the order of the controllers in the pop-up window.



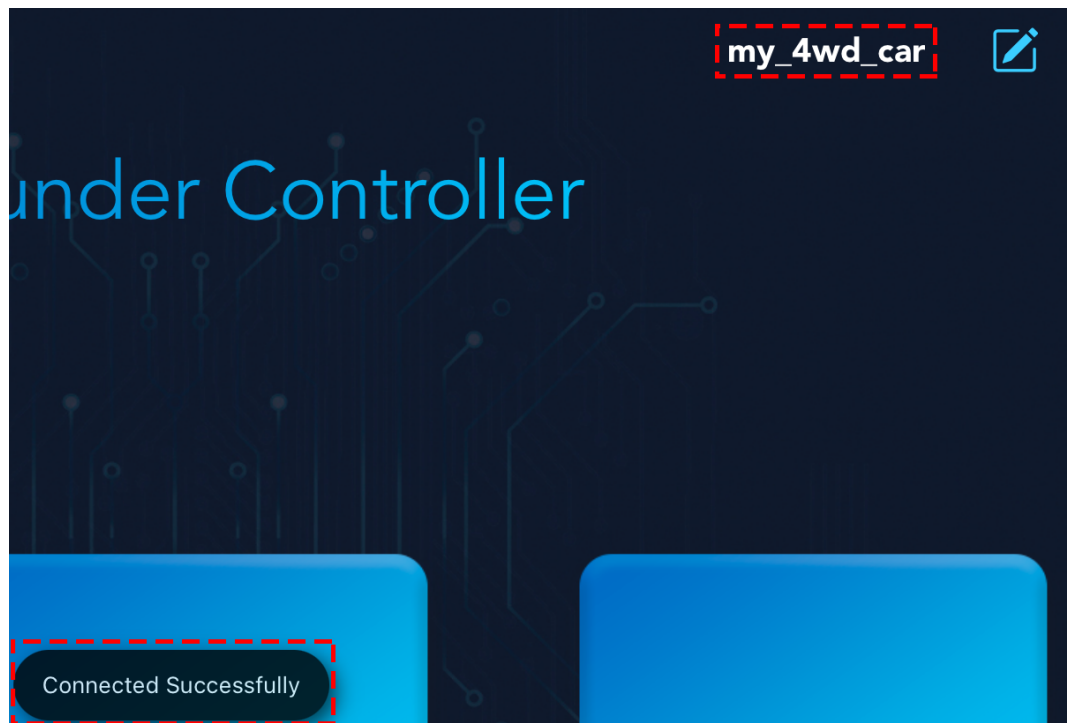
### 4.1.3 Connect

**Note:** This  button is available on both the home page and the controller page, and its function and usage are the same.

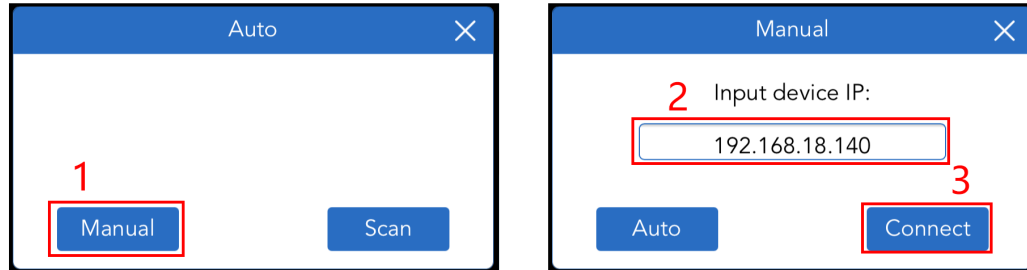
1. When you tap on the  icon, if your product has run the code, the product name + IP will appear and you need to tap this to connect.



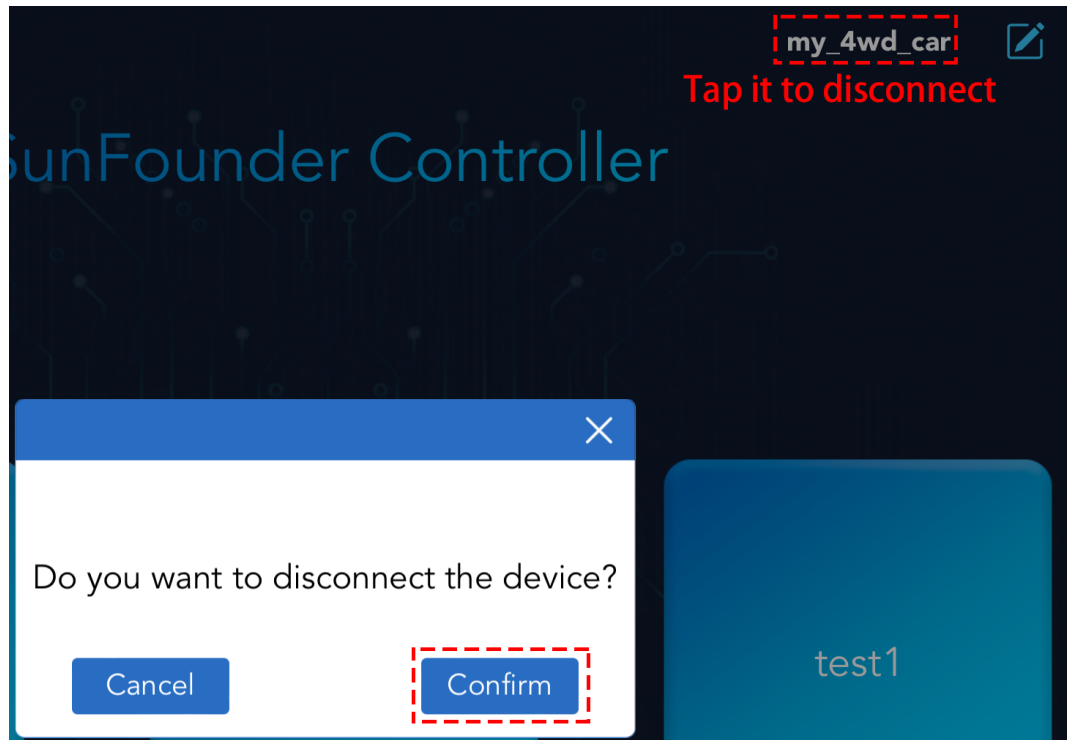
2. If the “Connected successfully” prompt appears, the product name will appear in the upper right corner.




3. If it doesn't search automatically, you can also manually enter the IP to connect.





4. You can disconnect from this product by tapping on the product name and choosing **Confirm** in the pop-up window.

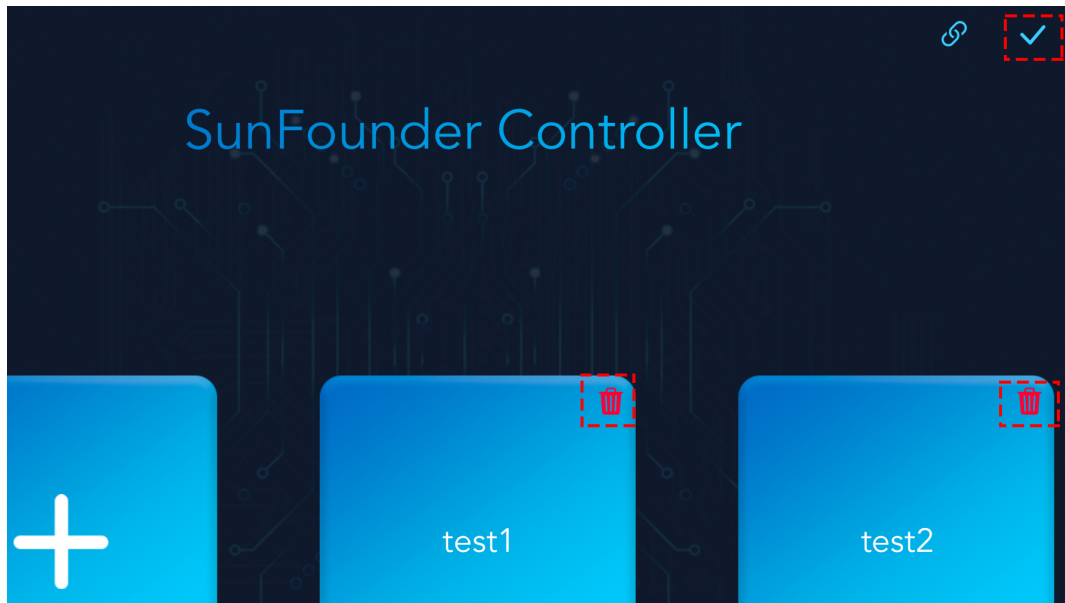


#### 4.1.4 Edit/Save

**Note:** This  button is available on both the home page and the controller page, but the functions are not the same.

- On the home page, after tapping it, you can delete the existing controller.
- In the controller page, you can edit each widget after tapping it.

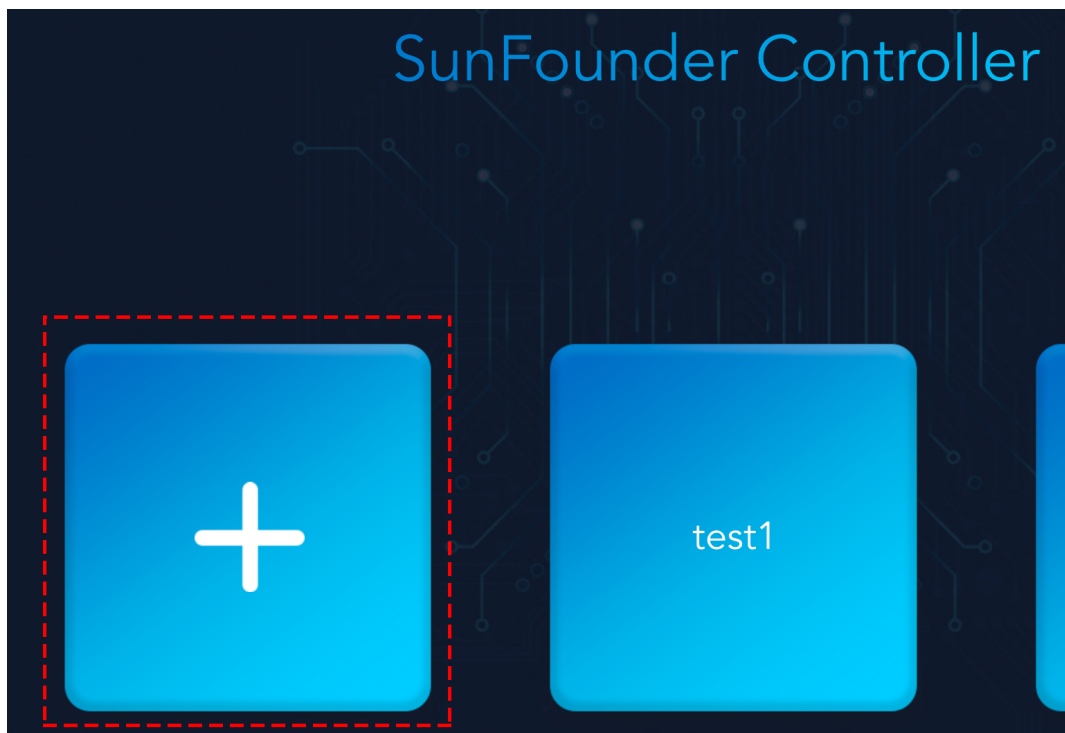
1. Tap the  icon to go to edit mode.
2. At this point, a  icon will appear in the upper right corner of each controller.



3. After deleting, tap the  button to exit to edit mode.

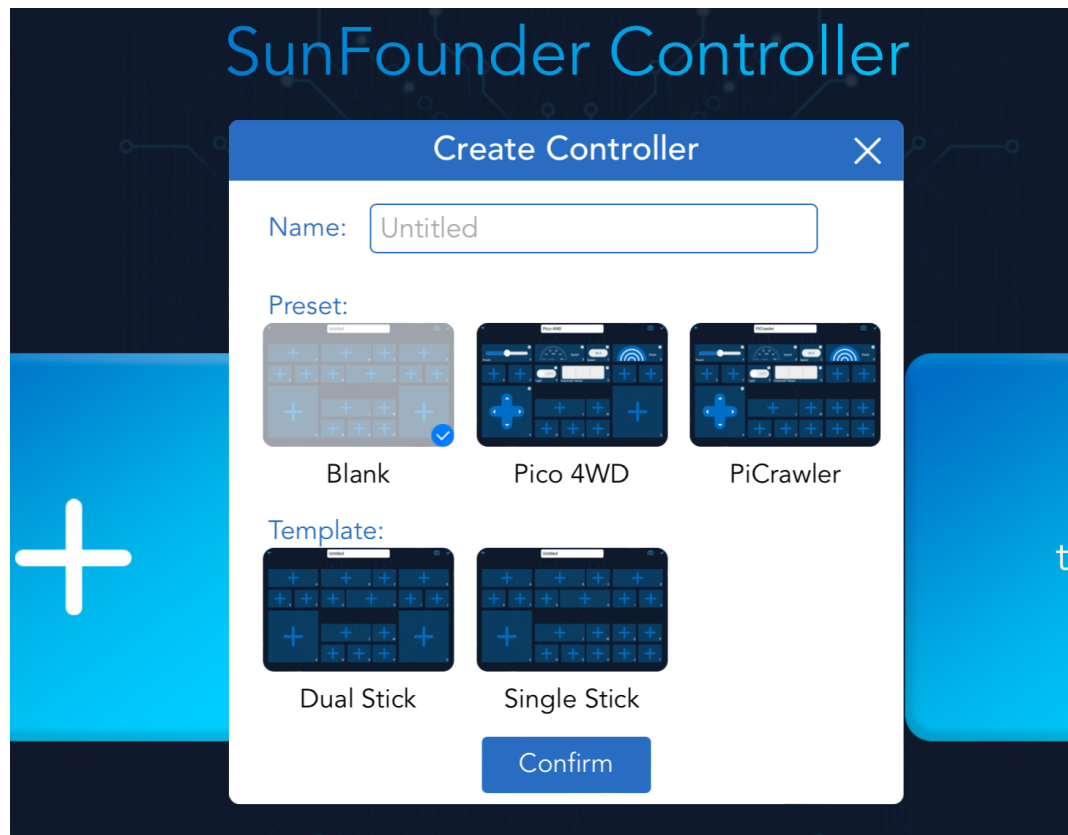
#### 4.1.5 Create

1. Tap the + button on the home page to create a controller.

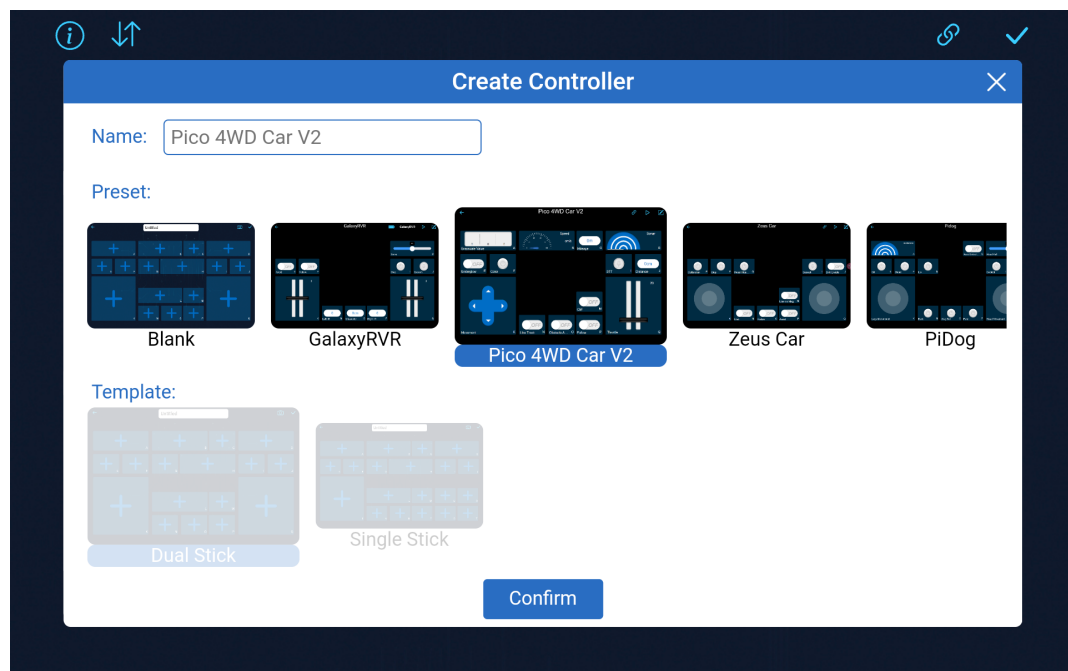


2. Select the template and set the name of the controller, then tap **Confirm** to add.





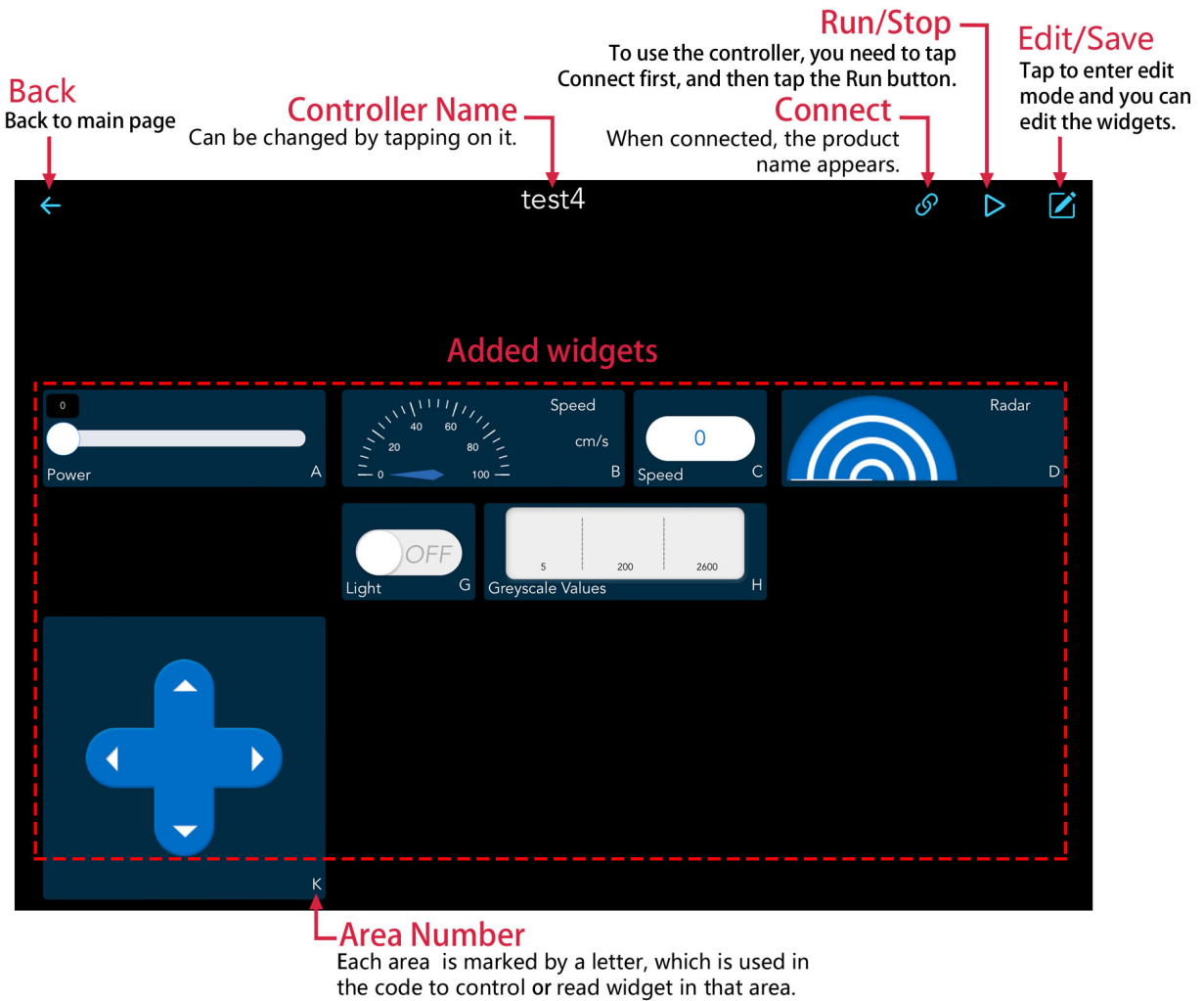
3. In the Preset section, we have some preset controllers for some products, you can choose according to your product. For example, tap Pico-4wd and give a name.




4. After entering, the app will automatically search for your robot and establish a connection. Once connected, tap the “Run” button to start controlling your robot.

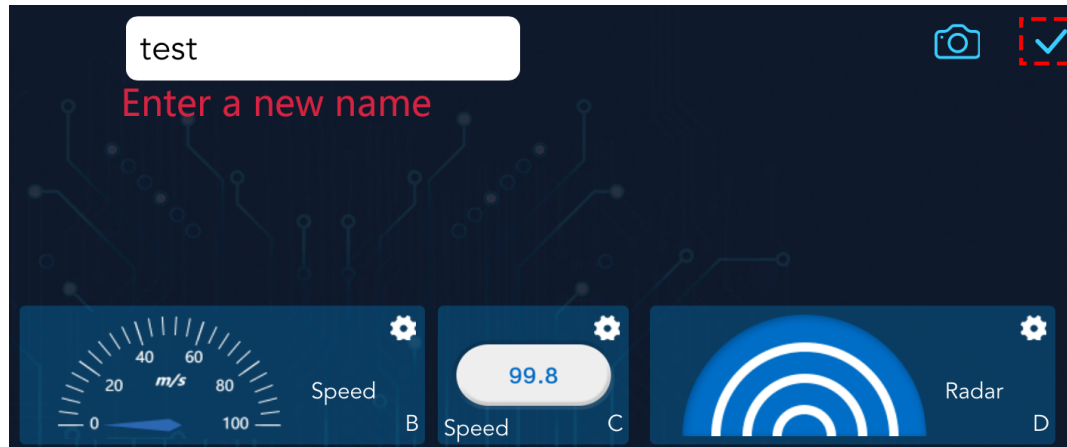



## 4.2 Controller Page




### 4.2.1 Controller Name


1. Tap the  button in the upper right corner of the controller page to enter edit mode.
2. Change the name of the controller at the location shown.

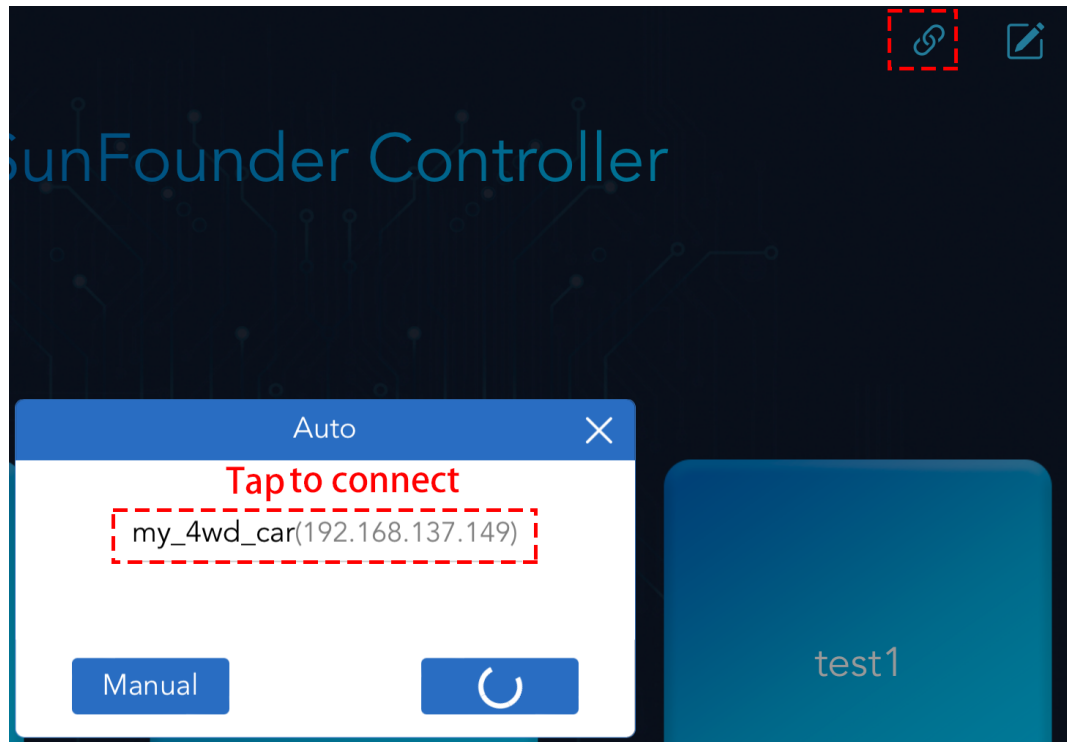


3. Tap the  button to save the changes.

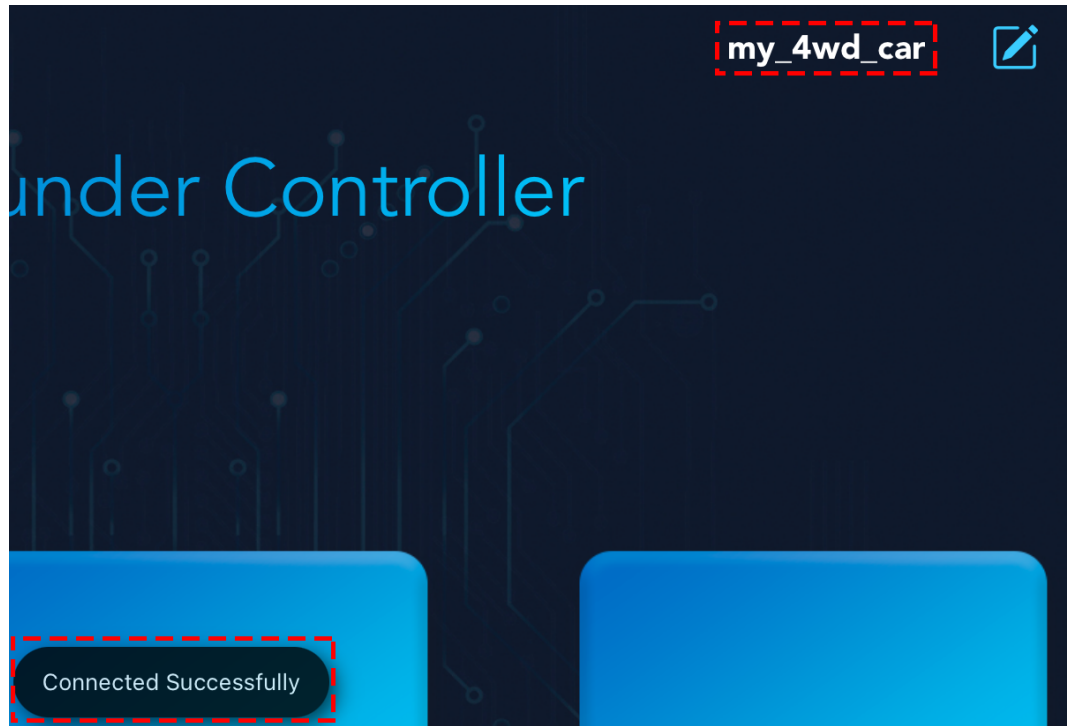
## 4.2.2 Connect

**Note:** This  button is available on both the home page and the controller page, and its function and usage are the same.

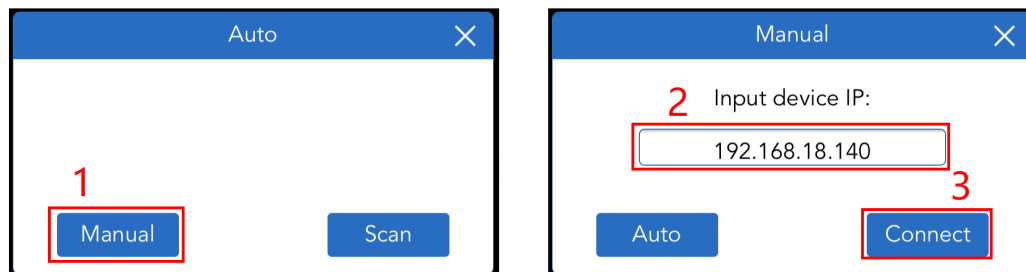
1. When you tap on the  icon, if your product has run the code, the product name + IP will appear and you need to tap this to connect.



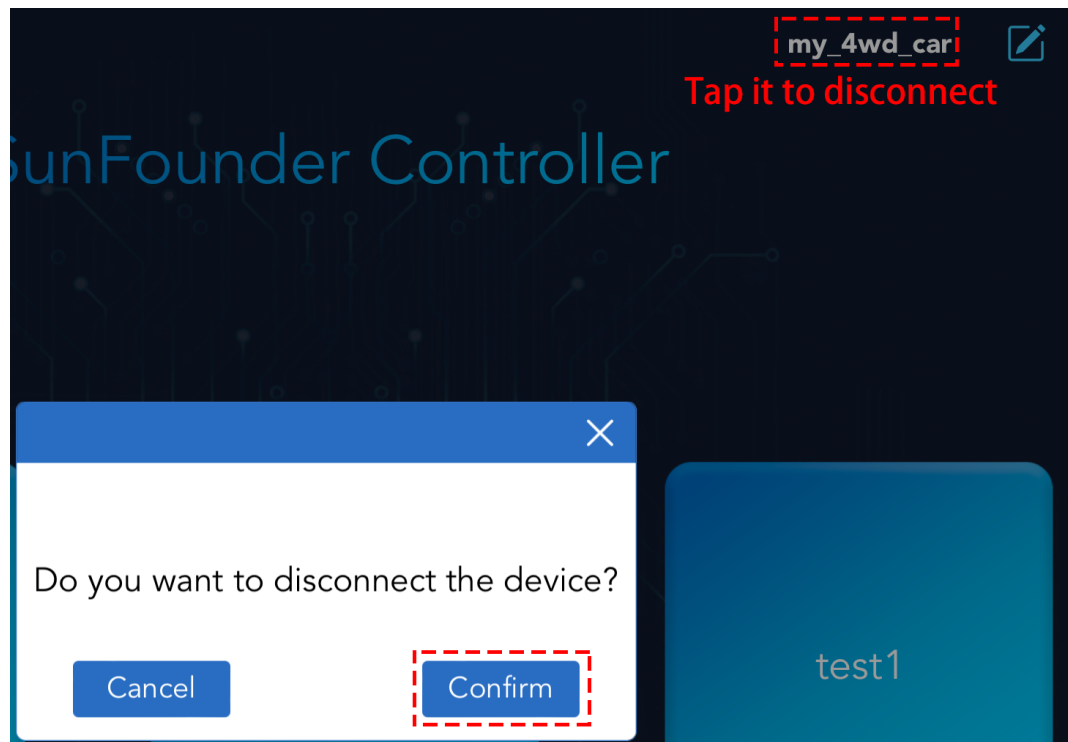
2. If the “Connected successfully” prompt appears, the product name will appear in the upper right corner.



3. If it doesn't search automatically, you can also manually enter the IP to connect.

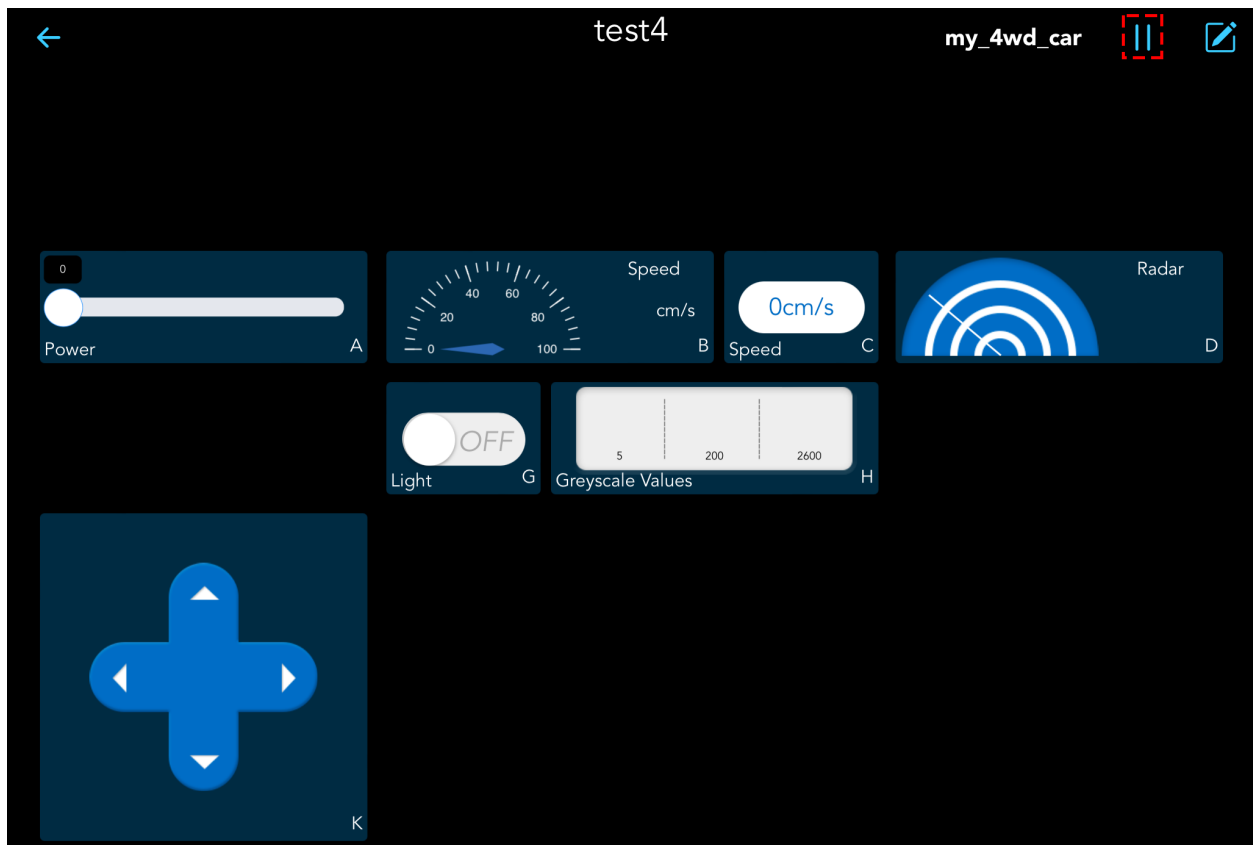


4. You can disconnect from this product by tapping on the product name and choosing **Confirm** in the pop-up window.




### 4.2.3 Run/Stop


If you have successfully connected your product, tap the  button to turn on the controller, then you can use it to control your product.




#### 4.2.4 Edit/Save

**Note:** This  button is available on both the home page and the controller page, but the functions are not the same.

- On the home page, after tapping it, you can delete the existing controller.
- In the controller page, you can edit each widget after tapping it.


1. Tap the  icon to enter the editing mode.



2. At this point you can do the following with the controller, and when you're done tap the  button to save the changes.

- *Add/Replace Widgets*
- *Delete Widgets*
- *Edit Widgets*

### Add/Replace Widgets

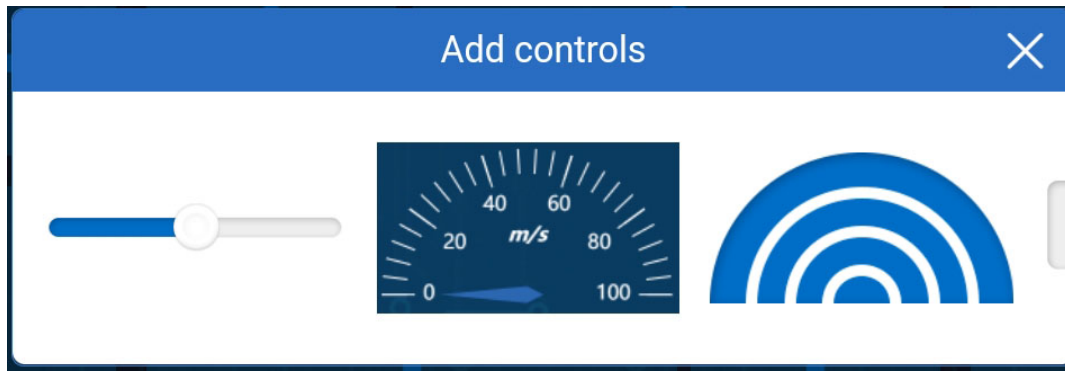
1. Tap the  button in the upper right corner of the controller page to enter edit mode.
2. Tap the plus sign in any area or the widget already added, and select the widget you need in the pop-up widget list.

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#### Note:

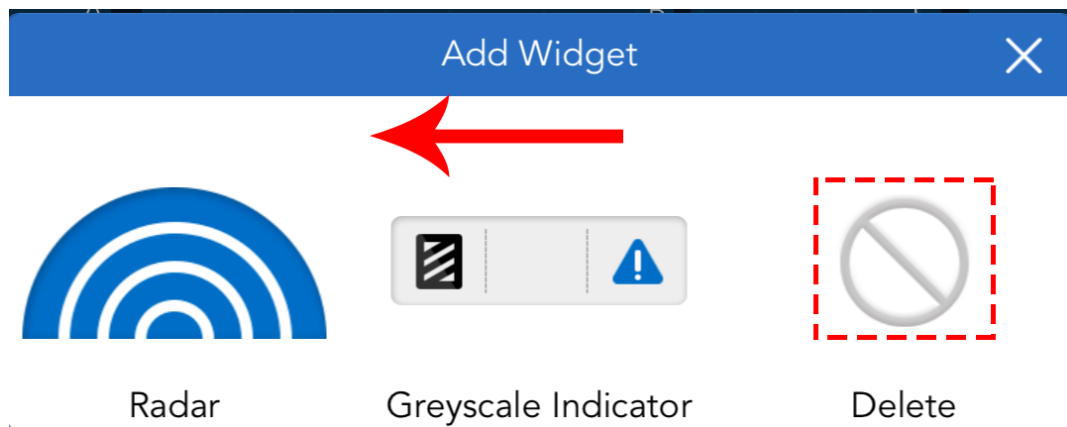
- Each controller has A~Q, 17 areas, there are 3 different shapes of areas and different widgets for each shape, refer to: *Widgets List* for details.
  - Additional widgets can be selected by swiping left and right.
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### Delete Widgets

1. Tap the  button in the upper right corner of the controller page to enter editing mode.
2. Tap the widget you need to delete, swipe left in the pop-up window to the end, and tap the **Delete** button.



### Edit Widgets

1. Tap the  button in the upper right corner of the controller page to enter editing mode.
2. You will see the  icon in the top right corner of each widget, use this icon to set the name, value range, initial value and units for the widget.

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**Note:** Different widgets need different settings, please refer to: [Widgets List](#).

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Widget Configuration

Name

Speed

Minimum

0

Maximum

100

Initial


0




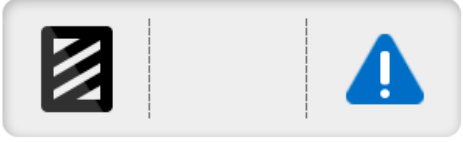
Auto reset


☐




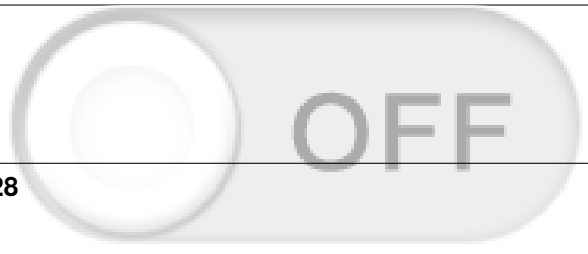
Confirm

### 4.3 Widgets List

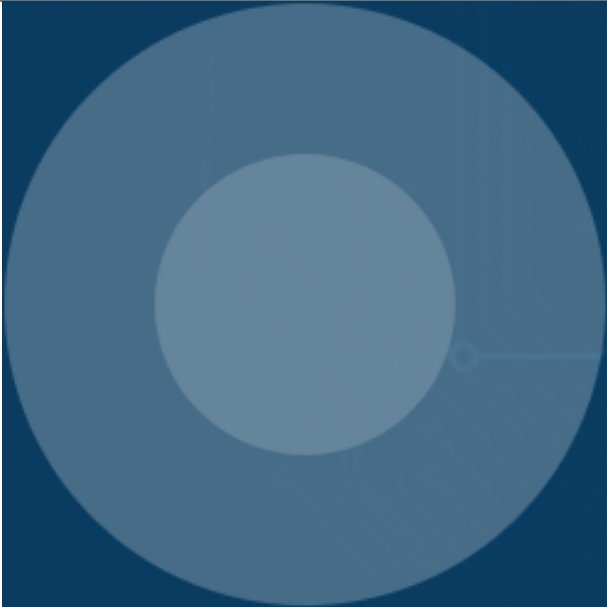
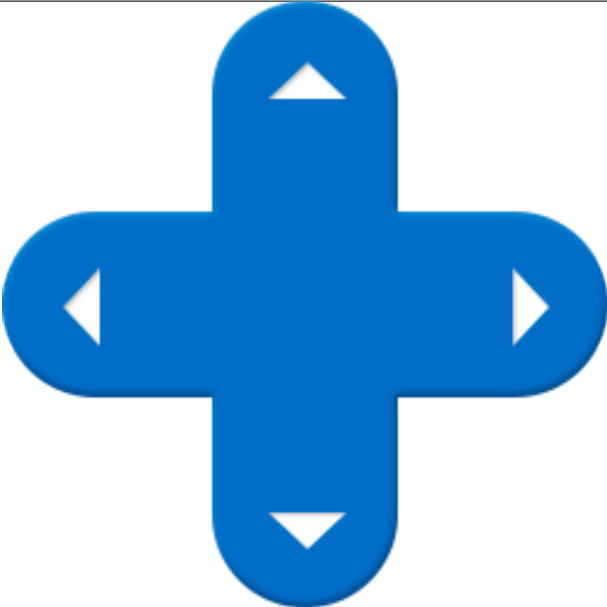
- In the  area (A/B/D/H/L), there are the following kinds of widgets.

Icon	Name	Event	Value
	Slider	Hold the dot to move	Default: 0~100, range and initial value can be changed.
	Guage	Show wid- get	Default: 0~100, range and unit can be changed.
	Radar	Show wid- get	Shows ultrasonic module direction and surrounding obstacles.
	Greyscale Indicator	Show wid- get	Black, white, or cliff are shown based on the set value.

- In the  area (C/E/F/G/I/J/M/N/O/P and Q/R/S/T area in single joystick mode), there are the following widgets.

Icon	Name	Event	Value
	Button	Press or Release	Press(True), Re-lease(False)
	Micro-phone	Hold and speak in English.	Return to what you said
	Number	Show widget	float value
	Switch	Tap to ON or OFF	ON(True), OFF(False)

- In the  area (K and Q area in dual joystick mode), the following widgets are available.

Icon	Name	Event	Value
	Joy-stick	Hold the circle to move	-100 ~ 100 in X-axis and Y-axis
	D-pad	Tap each arrow key	“up”, “down”, “left”, “right”
