

F4_DDP4 USER MANUAL

2019-03-18

Using this Manual

Read Before the First Using

We provides the following documents for the F4 DDP4 dosing pump user:

1. F4 DDP4 Dosing Pump User Manual
2. F4 DDP4 Dosing Pump Quick Start Guide

Users are advised to read the F4 DDP4 dosing Pump Quick Start Guide first to understand the process. For detailed product information, please read the F4 DDP4 Dosing Pump User Manual.

Download D-D H2Ocean App

1. Scan QR code to download.



iOS



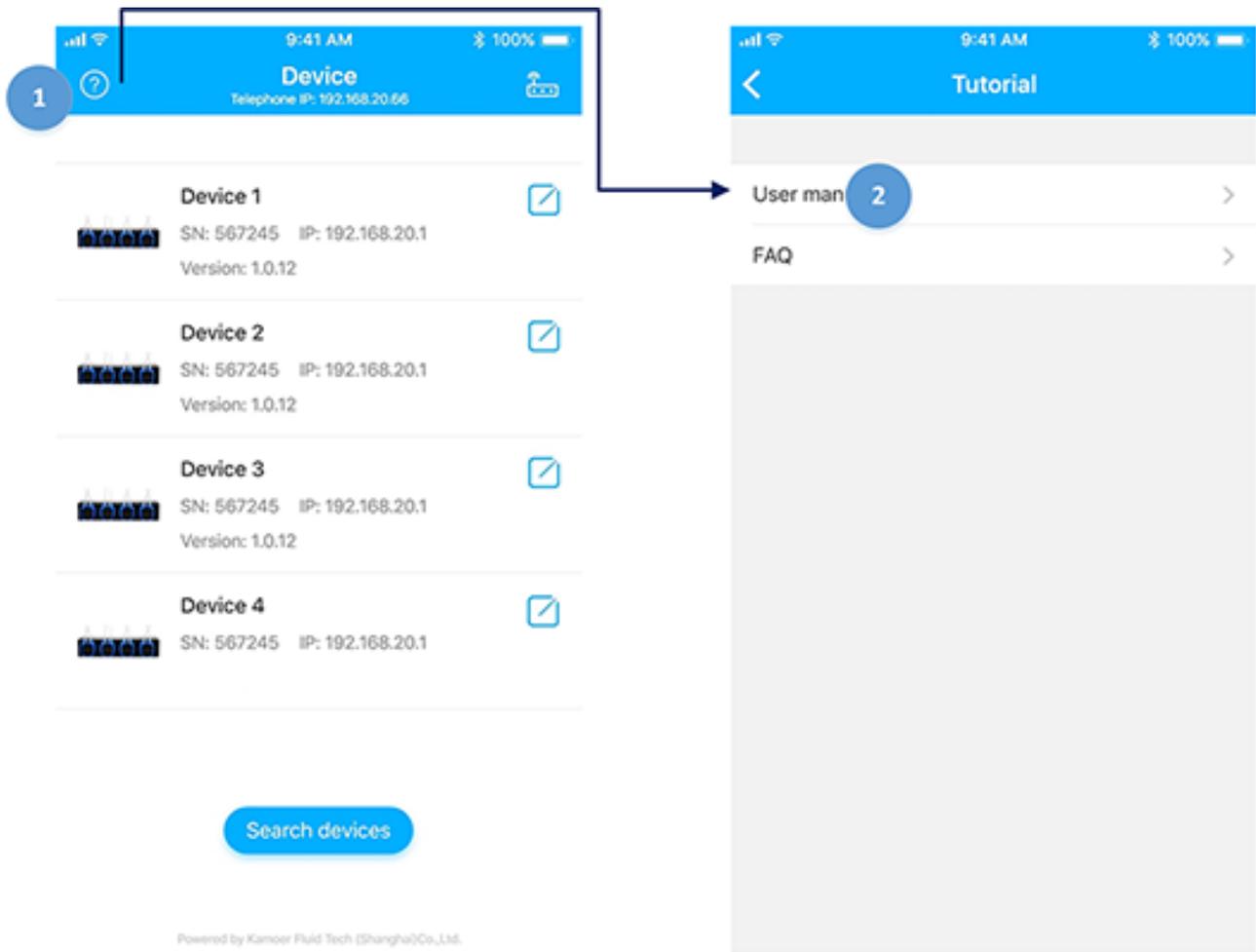
Android

1. Go to App Store or Google Player, search "D-D H2Ocean" to download.

Note: This app supports IOS 9.1 and above Apple devices, Android 4.4 and above Android devices.

View Tutorial

After installing the app, open it and click at the top-left corner to view tutorial. More detailed operations please see the **User Manual**.



Product Profile

Introduction

F4 DDP4 is a 4-channel intelligent dosing pump with WIFI function. It is mainly used to quantitatively add aquarium additives, such as Ca, Mg and KH supplements. It easily maintains water quality and greatly reduces the user workload. F4 DDP4 uses Kamoer patented geared pump head to ensure that the pump head does not slip and rust, and each channel is distinguished by one color housing. Highly reliable threaded joints are used to ensure no leakage problem. Standard long life pump tubing. Support both IOS and Android devices control by app.

Features Highlights

- Small and powerful
- Kamoer's patented gear-driven pump head ensures that the pump head will not slip and rust

- Highly reliable threaded joints ensure no leakage problems
- The dosing channel uses 4 different color pump heads
- Standard Pharmed BPT imported pump tube, long life, heat resistance, acid and alkali resistance, ozone and UV radiation, anti-aging and oxidation
- Up to 24 dosing cycles per day, 1-99 day cycle dosing or specified weekly dosing
- Support flow calibration for each dosing channel
- Contains real-time clock, automatically run according to the setting parameters, the parameters are not lost in the case of power failure
- Support iOS and Android mobile devices to control the dosing pump through WIFI. Support upgrade firmware via app

Application

- Aquarium feeding
 - Include hard coral (SPS), soft coral (LPS), and polyculture coral (SPS/LPS)
- Plant feeding
 - Used to supplement the different elements consumed during plant growth
- Other application
 - Timely, quantitatively and non-continuously added applications

Unpacking

- Before unpacking, please check for damage by delivery.
- Upon opening the package, please check that you have received all parts before using. Please check whether the product has visible damage.

If any defects are found when unpacking, please contact us immediately.

Part name



1.KXF pump head(Counterclockwise rotation) 2.Inlet 3.Outlet



4. WIFI status indicator (Red)
 5. Power indicator (Green)
 6. Reset button (Reset)
 7. CAN communication interface
 8. Power jack (DC12V)

Status Indicator

WIFI status Indicator (Red)

Status	Description
On	The dosing pump is connected to the router, and the app controls the dosing pump via router.

Off	The dosing pump is in direct connect mode, the app controls the dosing pump by directly connects dosing pump WIFI.
Fast flashing (on 100ms, off 100ms)	The dosing pump is in auto connect state, at this time the app can configure the dosing pump to access the router.
Slow flashing(on 500ms, off 500ms)	The dosing pump attempted to connect to the router, but failed.

Power Indicator(Green)

On	Off
On	The dosing pump is powered on.
Off	The dosing pump is not powered on or power failure.

Installation

This chapter mainly introduces how to install the F4 DDP4 dosing pump and precautions during installation.

Prompt

- The dosing pump is a self-priming pump. When there is big difference between the inlet and the outlet, siphoning or reflow may occur. In order to avoid siphoning and reflow, the dosing pump should be placed in a reasonable position to ensure that the height difference between the inlet and the outlet is within 0.5 m.

- The inlet pipe should be as short as possible, and the outlet pipe should be suspended above the tank.
- Please check carefully that the inlet and outlet connections are in the correct direction.

D-D H2Ocean App

This chapter mainly introduces how to use app to control the F4 DDP4 dosing pump.

Connection Mode

There are two modes to connect the dosing pump via app: direct mode and router mode. We recommend using router mode.

Mode	Description	Advantages	Disadvantages
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<p>Direct mode (AP)</p>	<p>Factory default mode, you can see the dosing pump WIFI in the mobile device WIFI list (the name starts with dd_, followed by the 5-digit serial number, the connection password is a12345678), the user can directly connect the dosing pump WIFI to control.</p>	<p>the connection is simple</p>	<p>Can't use WIFI to access internet at the same time.</p>
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Router mode (STA)	Unable to see the dosing pump WIFI in the WIFI list, the user controls the dosing pump by connecting to the wireless router	After the configuration is successful, the dosing pump can be controlled by connecting the router.	Support the 2.4G router. The 5G router is not supported.
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Reset Dosing Pump WIFI

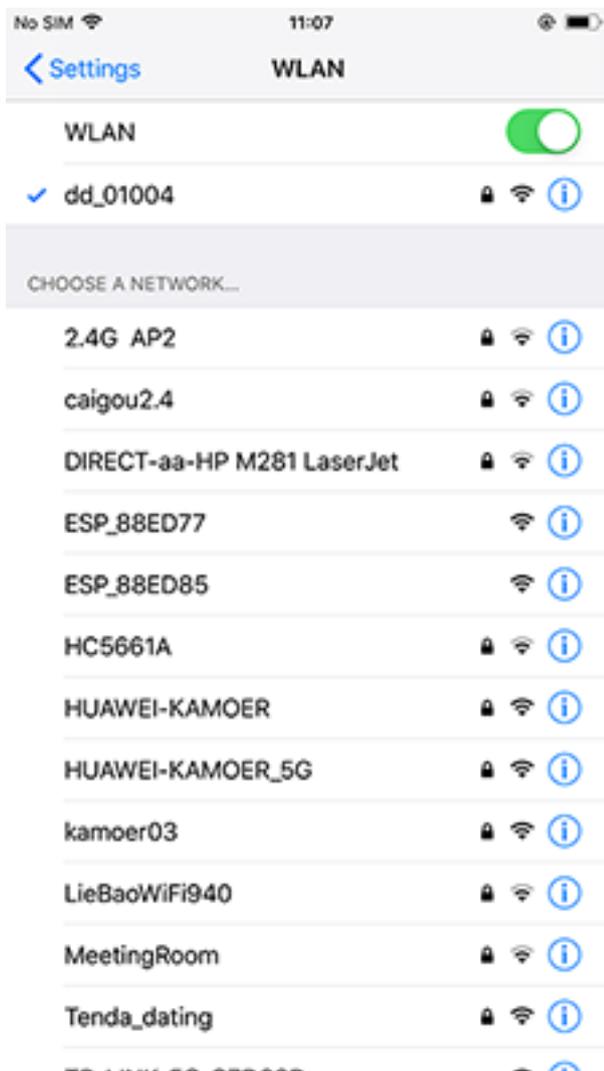
Reset the dosing pump WIFI, which is to restore the dosing pump WIFI to the factory default mode, which is the direct connect mode. You can see the WIFI of the dosing pump in the WIFI list of the mobile phone (the name starts with dd_ followed by the 5-digit serial number).

Operation steps: Press and hold the Reset button on the right panel, wait until the red light flashes 2 times, and the buzzer sounds 2 times and then release the Reset button.



Connect Dosing Pump via Direct Mode

Power on the dosing pump, wait until the green power indicator light is on, the red WIFI status indicator is off. Then find the dosing pump WIFI in your mobile phone WIFI list (the name starts with dd_, followed by the 5-digit serial number), connect it and enter the connection password. The connection password is **a12345678**



Connect Dosing Pump via Router Mode

Step 1: Power on the dosing pump, wait until the green power indicator is on;

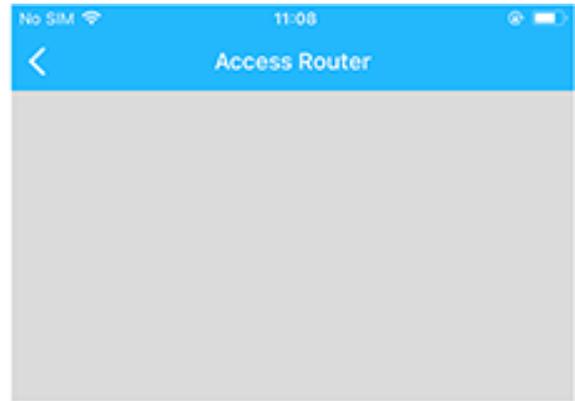
Step 2: Use mobile phone to connect the WIFI of wireless router. Open the App, click the router icon in the upper right corner of the device list page, enter the router mode boot page and click the “Next” button to enter the router mode connection page;



Device not found

Search devices

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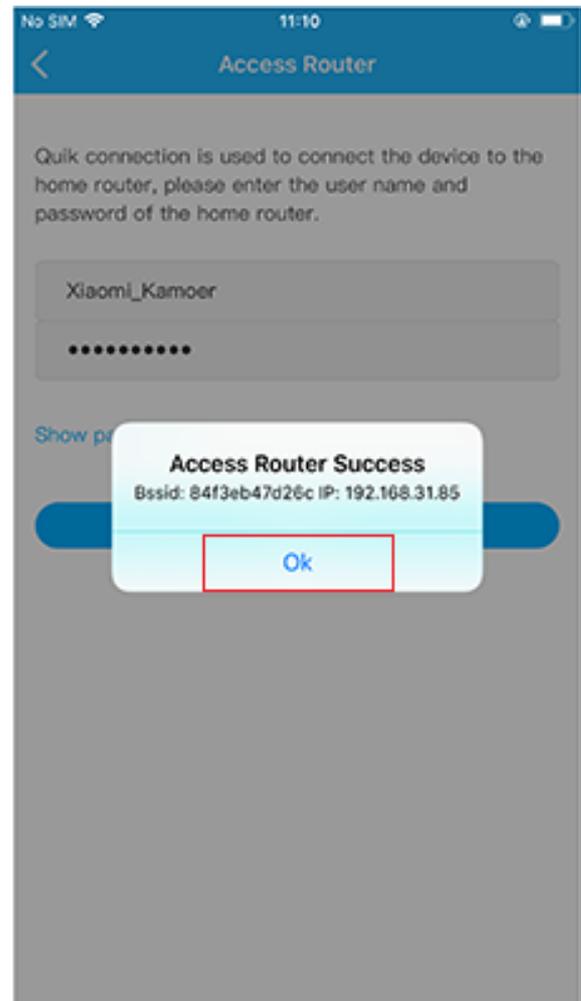
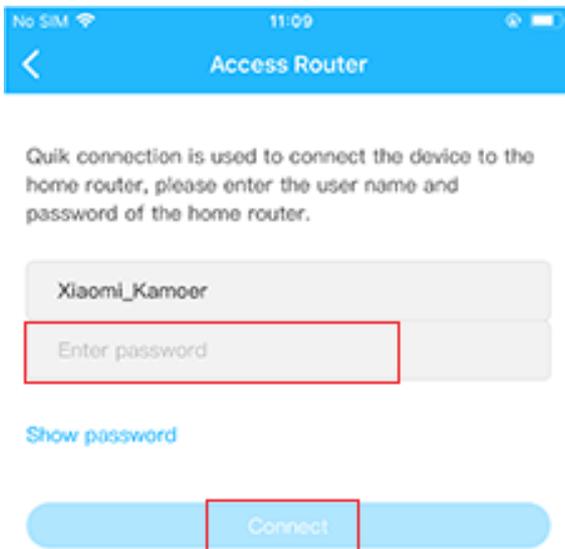


Press the button on the side of the panel, the indicator light flashes, and the dosing pump enters the one-button connection waiting state;

Next

Step 3: Enter the password for connecting to the wireless router (do not change the router name);

Step 4: Short press the Reset button on the right side panel of the dosing pump once, the red light will flash quickly, and then click the “Connect” button in the router mode connection page to start. If the dosing pump is successfully connected to the router, the red light is on and the connection success dialog box pops up. Click the OK button in the dialog box to return to the device list page.



Step 5: Click the “search devices” button on the device list page, you can see the dosing pump that successfully connected the router on the device list. You can also see the serial number of the dosing pump and the IP address of the dosing pump on the router. Click on the dosing pump and enter the control interface to view status or set parameters.



Search devices

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a. The router mode only needs to be configured once. After the configuration is successful, as long as the mobile phone and the dosing pump are connected to the same router, the dosing pump can be found in the device list page.

b. If the configuration fails, start again from the first step.

Control Interface Overview

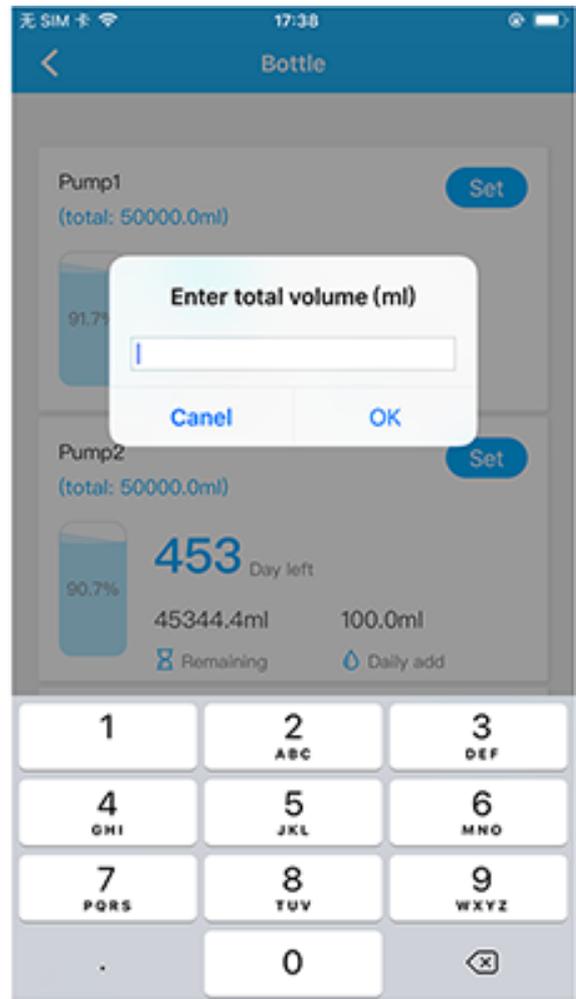
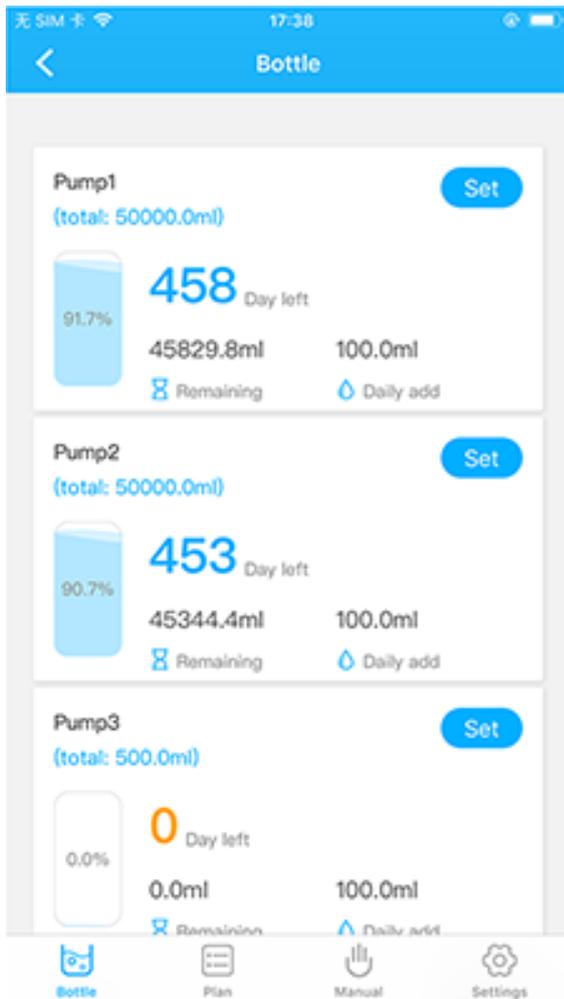
Open the App and click the dosing pump in the device list to enter the control interface. The interface includes four modules:

- **Bottle:** Check the total amount of the solution bottle, the remaining amount, let the user know the status of the solution bottle. When the reagent bottle reagent is insufficient, there will be a yellow color prompt to tell the user to add the reagent in the solution bottle in time.

- **Plan:** Set up the dosing plan in this module. The dosing pump is titrated according to the schedule set by the user, which solves the cumbersome and inaccurate manual operation.
- **Manual:** Manually add a certain amount of solution to facilitate the user to operate at any time.
- **Settings:** Contains 3 functions.
 - a.Channel name setting, after setting the channel name, it is easy to identify four pump heads;
 - b.Flow rate calibration, after the flow rate calibration, the pump head will dose accurately;
 - c.Anti-chemical interference, allowing the pump head to be staggered to add time to prevent chemical interference caused by adding reagents at the same time. This function works on the automatic mode of the planning module and does not affect the custom mode.

Bottle Status Page

On this page, you can check the total amount of the solution bottle, the remaining amount, and know the status of the solution bottle. When the reagent bottle reagent is insufficient, there will be a yellow color prompt to tell the user to add the reagent in the solution bottle in time.



You can set the total volume according to the amount of liquid in the bottle. The remaining volume bottle is automatically reduced according to the planned dosing and manual dosing.

Note: The daily addition amount displayed on the interface shows the planned addition amount of the dosing day, and does not include the manual dosing. In fact, the amount of bottle reduction is also counted if using manual addition.

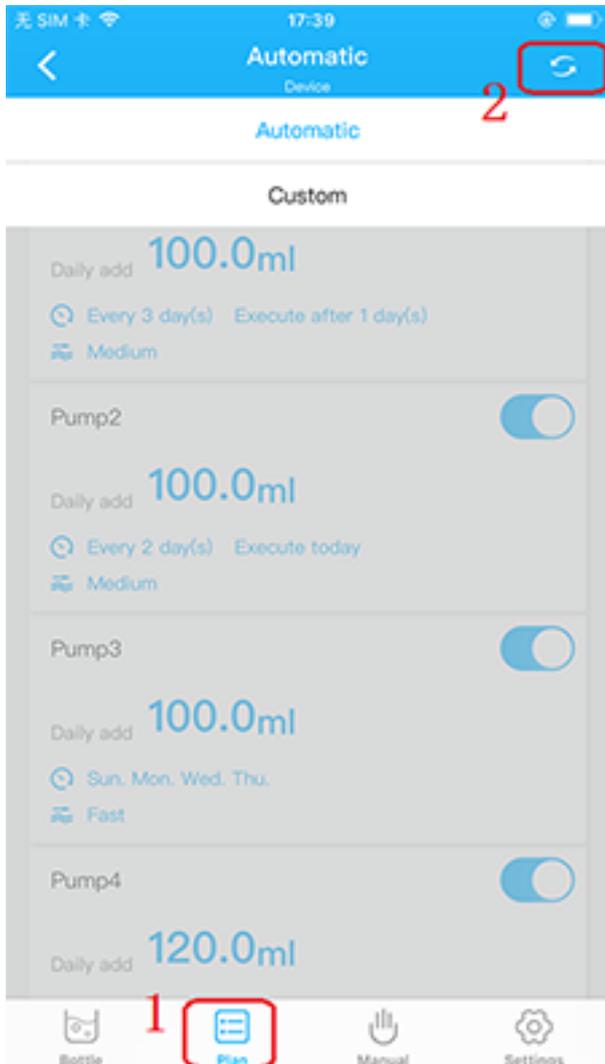
Plan Dosing Page

Plan dosing is used to allow the pump to quantify the dosing according to the schedule set by the user. Plan dosing includes two modes:

Mode	Description	Features
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Automatic	Just set the adding time period, adding the total amount, adding the number of times, the dosing pump will evenly distribute the adding amount and adding the starting time according to the number of times, up to 24 times a day.	The setting is simple, and the pump head can be staggered and added in combination with chemical interference. Add start time and add amount average allocation during the added time period
Custom	You can add plans as needed. The start time and the added amount of each plan can be set independently. Up to 24 plans have a higher degree of freedom per day.	Each plan can be set independently, not evenly distributed. Suitable for situations with special requirements

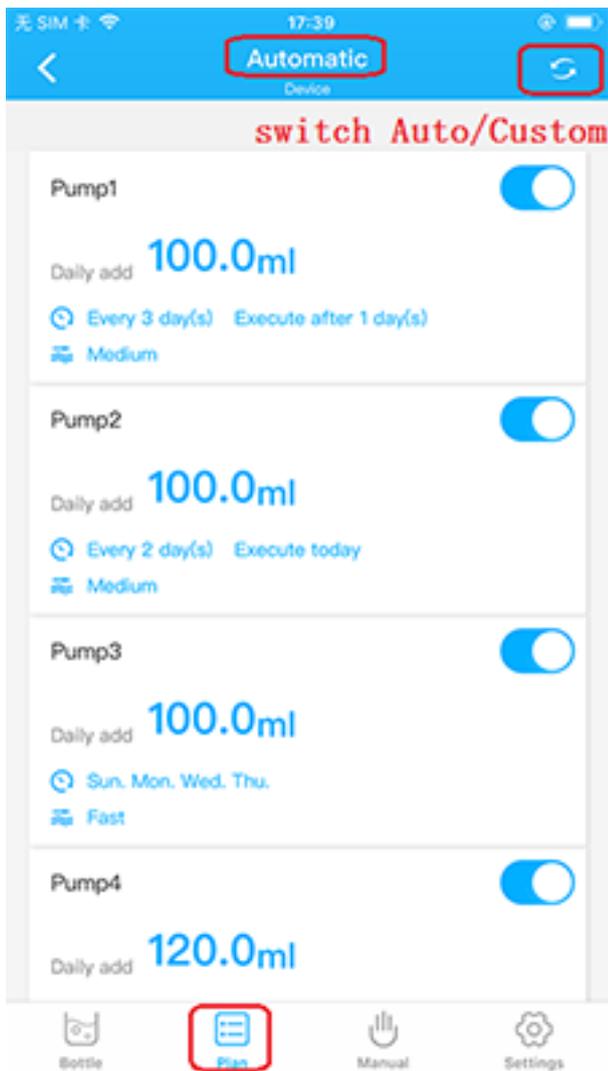
You can click the switch mode icon  in the upper right corner of the plan dosing page to switch mode between automatic and custom modes.



Plan Dosing - Automatic Mode

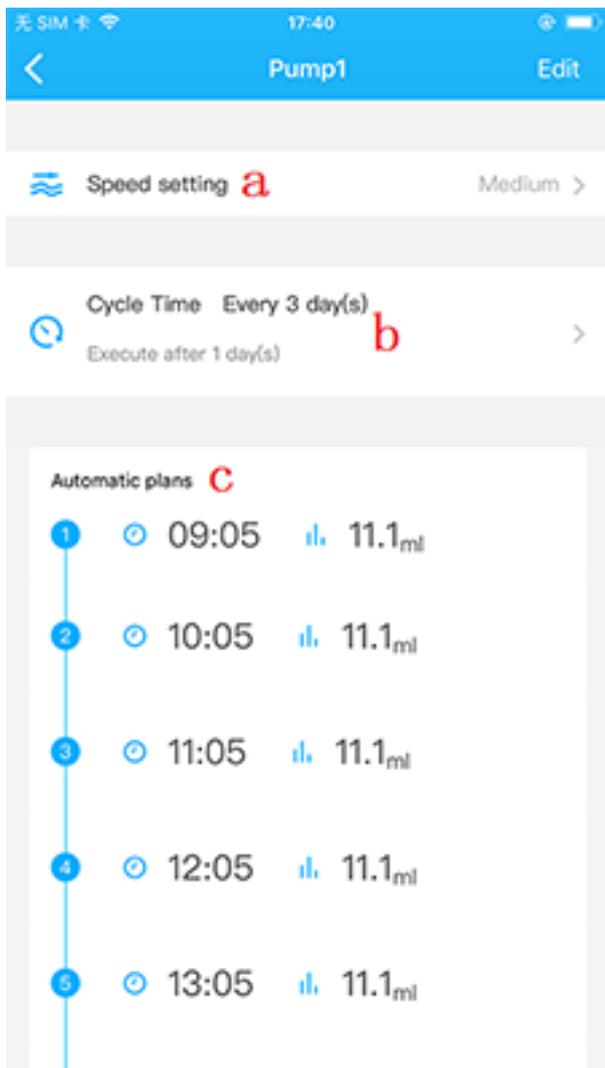
1.Channel list page The channel list page lists the basic information that each pump head performs, includes:

- **a.Pump 1-4:** The name of the pump head can be set in the Settings page
- **b.Daily addition amount:** The total amount of all planned additions on the day of the pump head addition
- **c.Cycle period:** Cycle by days or cycle by weekly.
- **d.Speed:** View the speed level of the pump
- **e.Plan switch:** The pump executes the plan when it is turned on, and the pump does not execute the plan when it is turned off.



2. automatic plan details page Click on the corresponding channel in the channel list to enter automatic plan details page, this page includes:

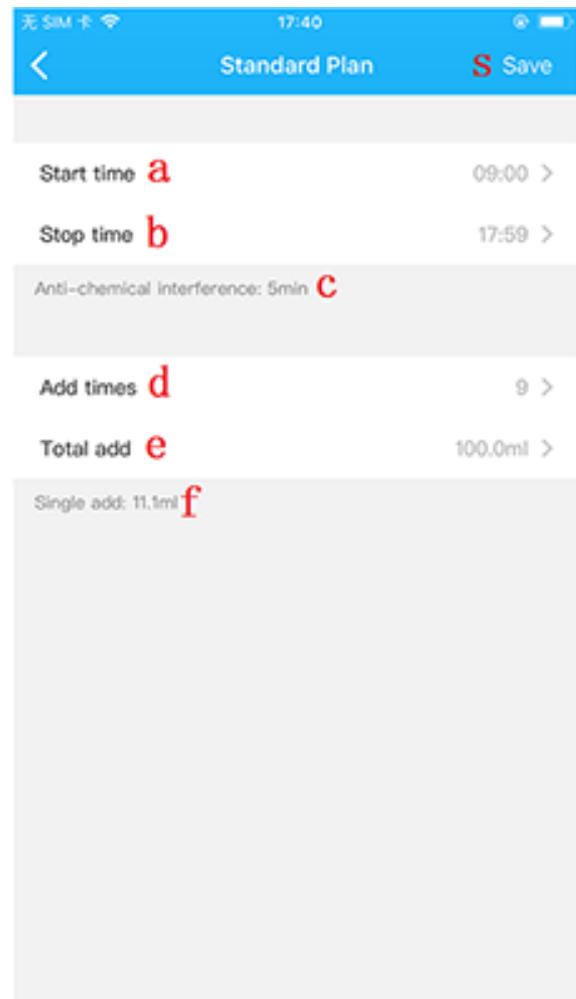
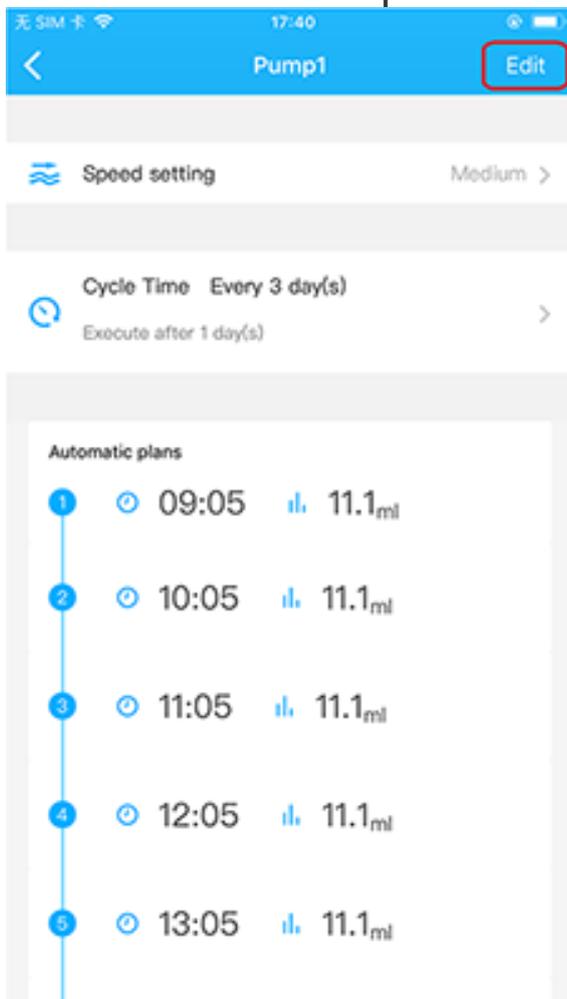
- **a.Speed setting:** Set the speed level of the pump head.
- **b.Cycle period:** The period of planned execution, which can be titrated every few days, and can be set according to weekly;
- **c.Plan list:** Show the time and amount of additions for each plan, up to 24.



3. automatic plan setting page On the automatic plan details page click “Edit” button in the top right corner to enter automatic plan setting page. On this page you can set follow parameters:

- **a.Start time:** The start time of all plans, can only be the hour, such as 00:00, 01:00
- **b.Stop time:** All plans are executed during the start and end time periods. The format of the end time is similar to 23:59
- **c.Anti-chemical interference time:** Time offset from the top of the hour. This time is used to prevent multiple pumps from adding elements at the same time. You can set this time on setting page.
- **d.Add times:** The times of dosing during the time period between start time and end time, can be set up to 24 times, and the amount of each dosing is equal.

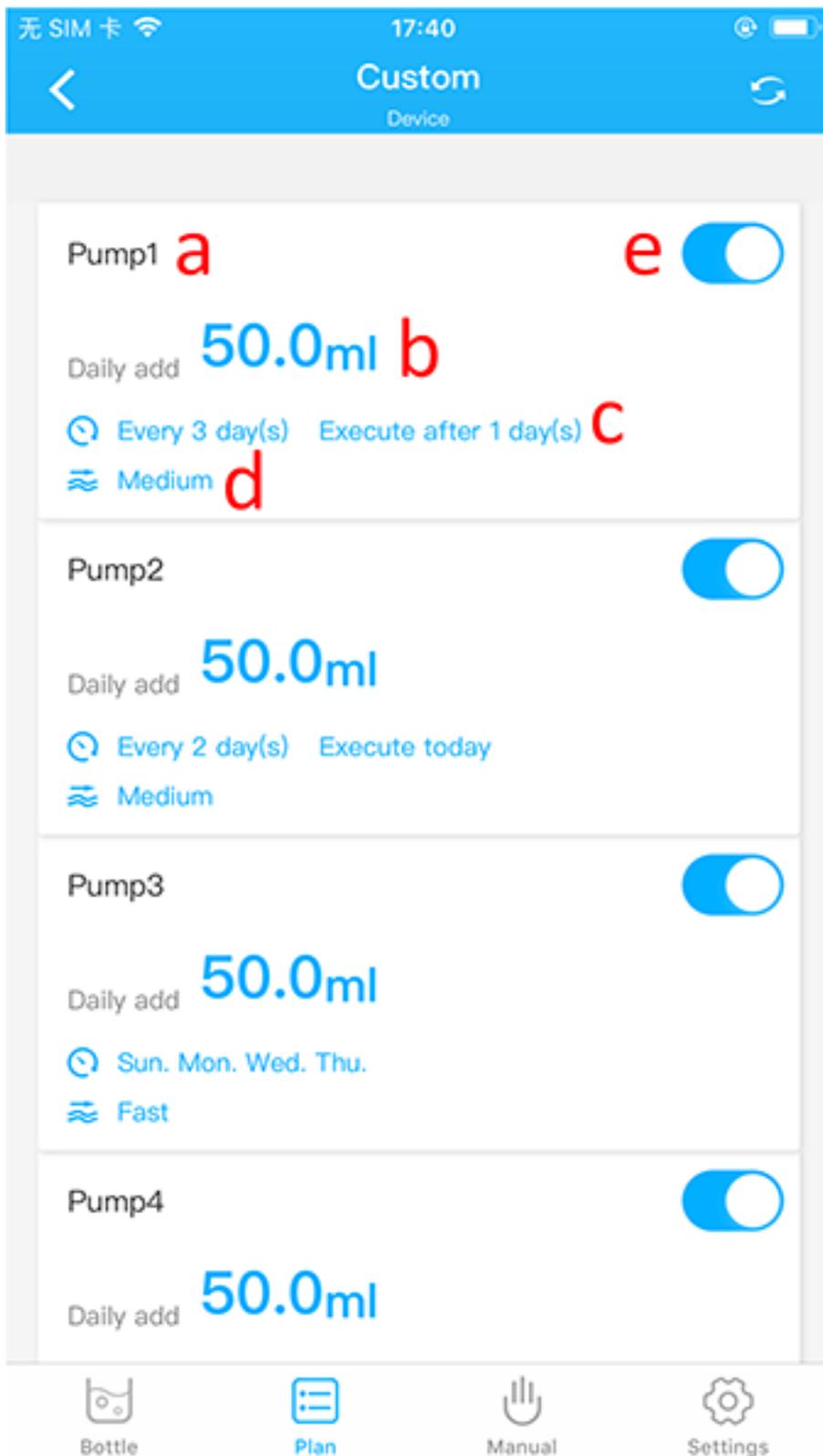
- **e.Total add:** The total dosing amount during the time period between start time and end time.
- **f.Single add:** The dosing amount of a plan.
- **s.Save:** save parameters.



Plan Dosing-Custom Mode

1.Channel list page The channel list page lists the basic information that each pump head performs, includes:

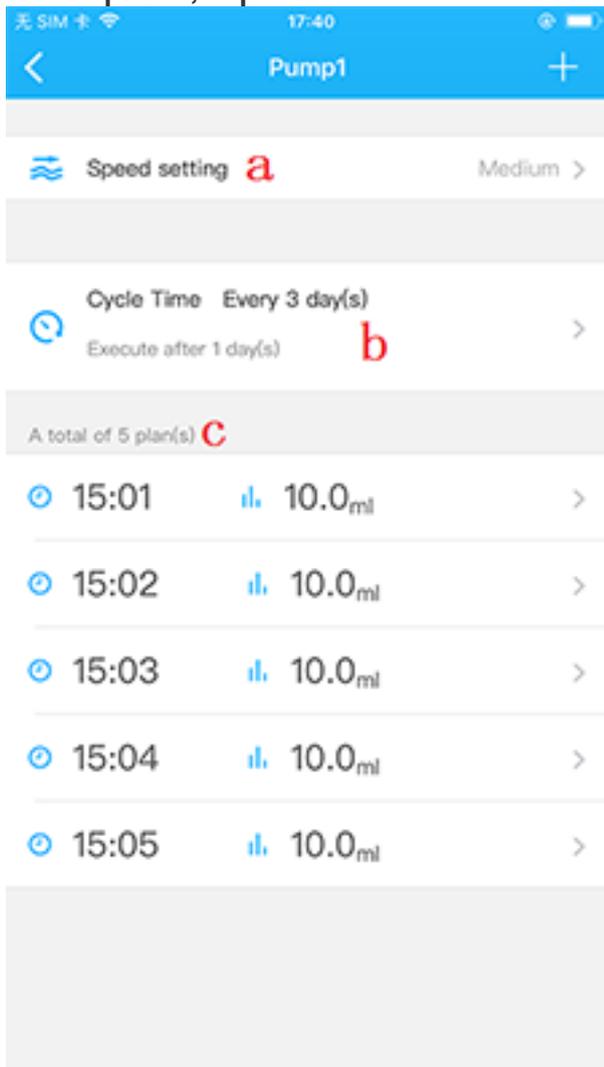
- **a.Pump 1-4:** The name of the pump head can be set in the Settings page
- **b.Daily addition amount:** The total amount of all planned additions on the day of the pump head addition
- **c.Cycle period:** Cycle by days or cycle by weekly.
- **d.Speed:** View the speed level of the pump
- **e.Plan switch:** The pump executes the plan when it is turned on, and the pump does not execute the plan when it is turned off.



2. custom plan details page

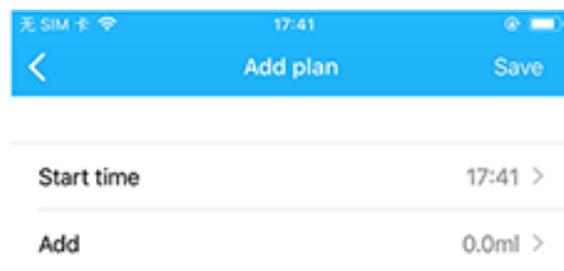
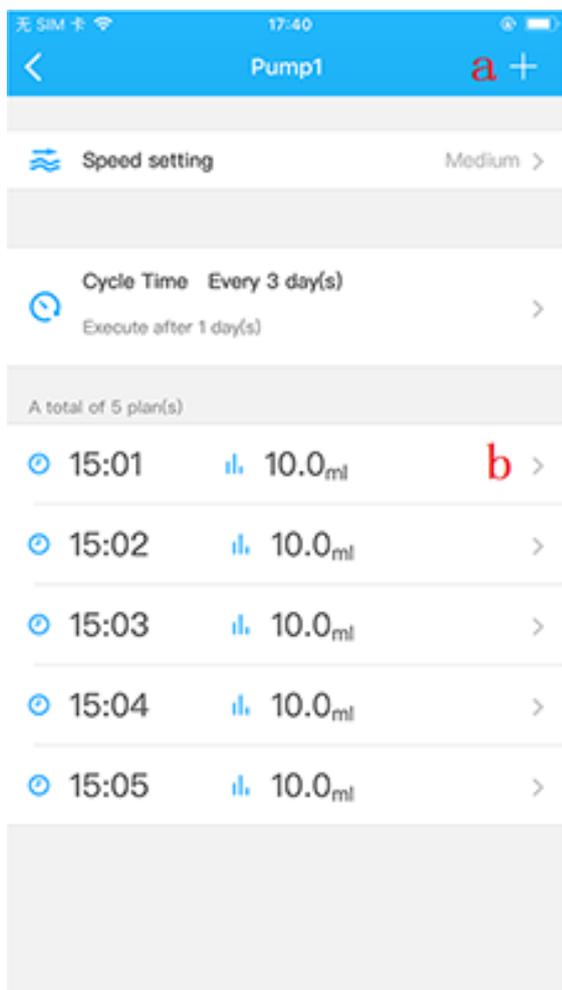
- **a.Speed setting:** Set the speed level of the pump head.
- **b.Cycle period:** The period of planned execution, which can be titrated every few days, and can be set according to weekly;

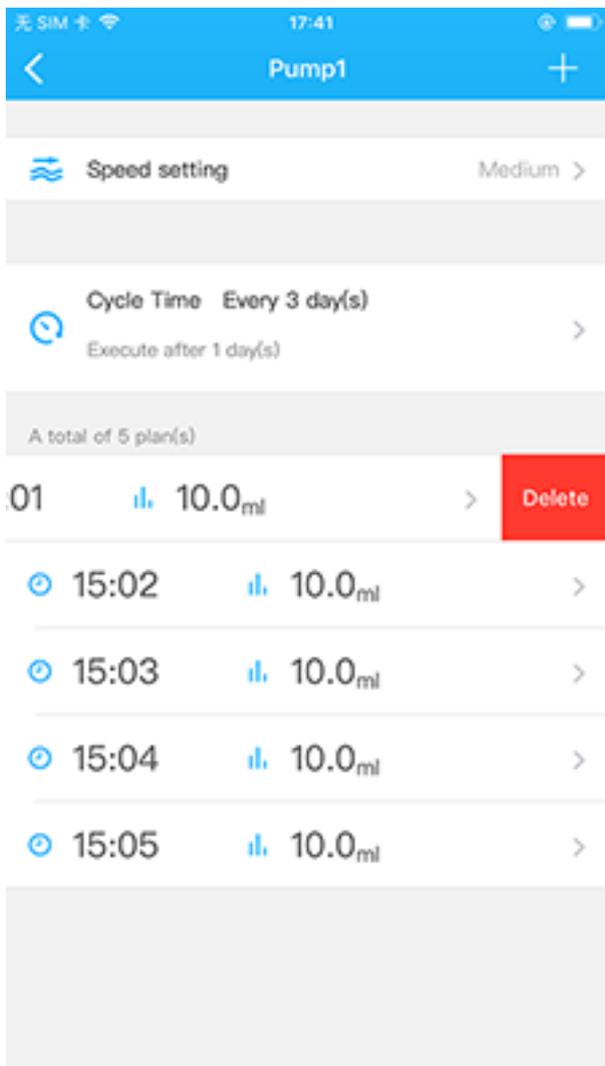
- **c.Plan list:** Show the time and amount of additions for each plan, up to 24.



3.Add, edit or delete custom plan

- **a.Add:** Click  Add Plan, enter the edit plan interface, enter the start time and
- the added amount, click the “Save” button to complete the plan addition;
- **b.Edit:** Click one of the plans in the plan list to enter the edit plan interface; modify the start time or add amount, click the “Save” button to complete the plan edit;
- **c.Delete:** Swipe the plan to be deleted in the plan list to the left, the “Delete” button appears, click “Delete” to delete, and complete the plan deletion.

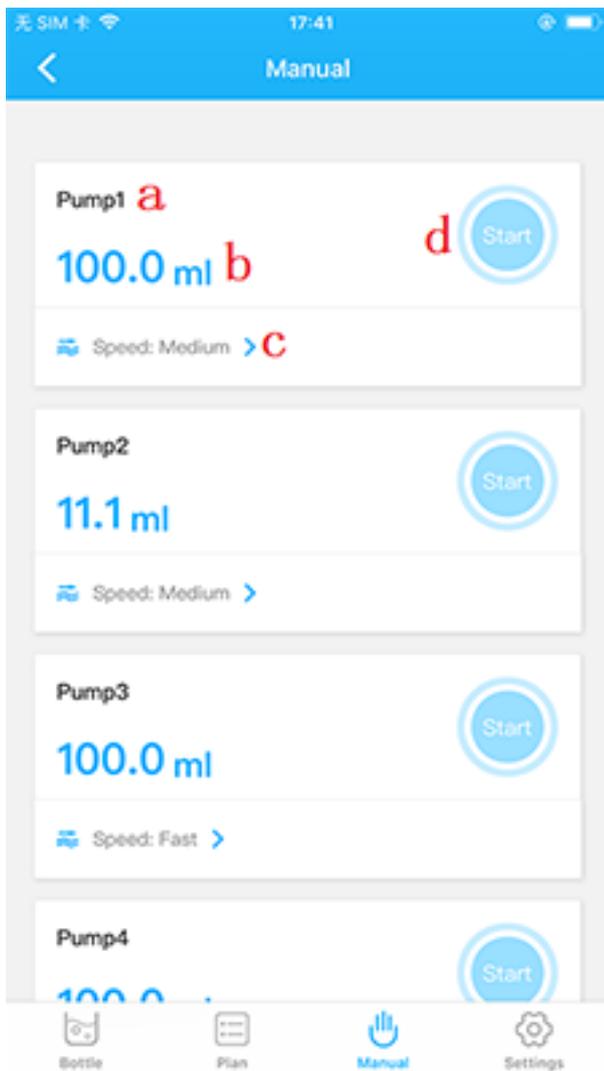




Manual Dosing Page

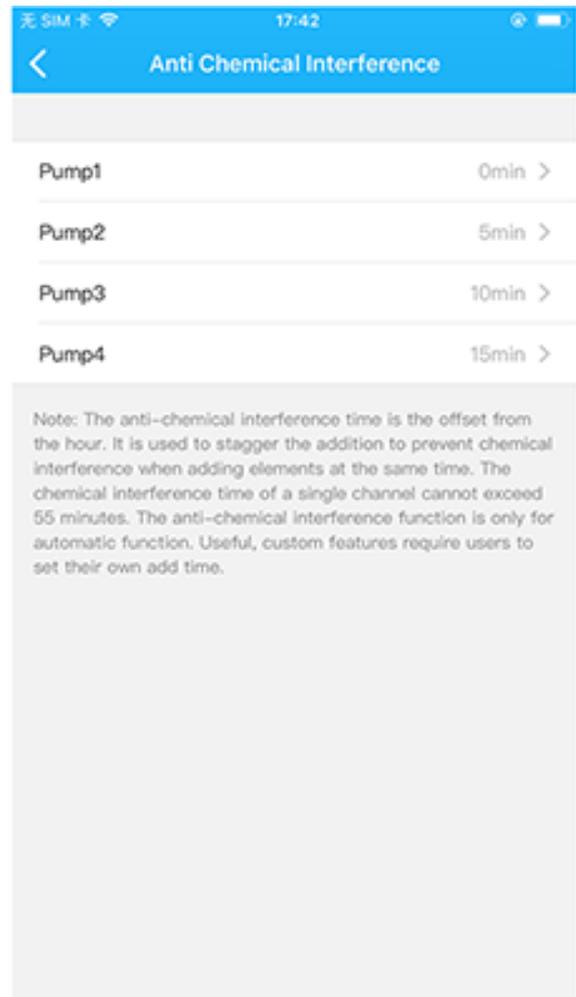
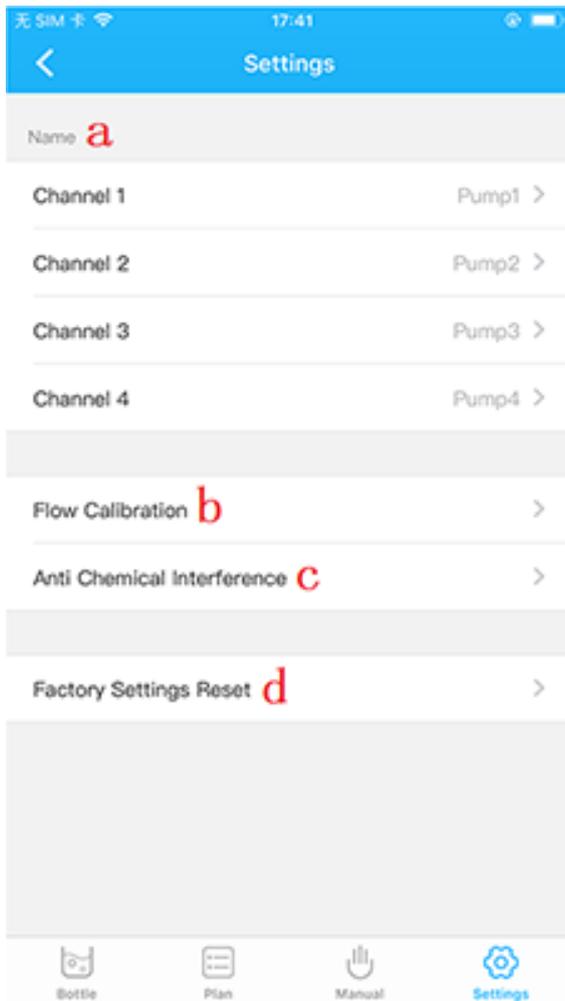
Manual dosing can be done at any time to meet the user's temporary add requirements.

- **a.Pump name:** can be set in the Setting page;
- **b.Dosing amount:** set the amount to be titrated manually, and the pump will stop automatically after dosing;
- **c.Speed:** The flow rate level of pump;
- **d.Start/Stop button:** Run or stop of the pump



Settings Page

- **a.Pump name:** You can modify the name of each pump head, the user can modify the name of each pump head to identify the purpose of the pump head;
- **b.Flow rate calibration:** The flow rate of each pump head is calibrated here. The purpose of flow calibration is to improve the accuracy of the added elements;
- **c.Anti-chemical interference:** Set the anti-chemical interference time of the dosing pump to prevent the chemical interference caused by the simultaneous addition of elements, and prevent chemical interference time. It is only effective for the automatic mode and does not work for the custom mode.
- **d.Factory Settings Reset:** All settings of "Device" will be changed to the factory defaults.

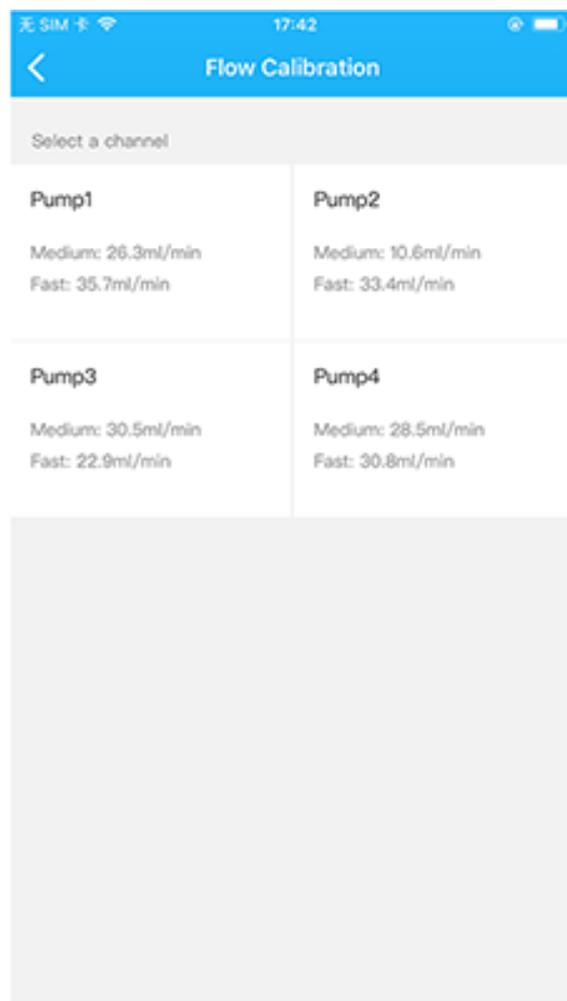
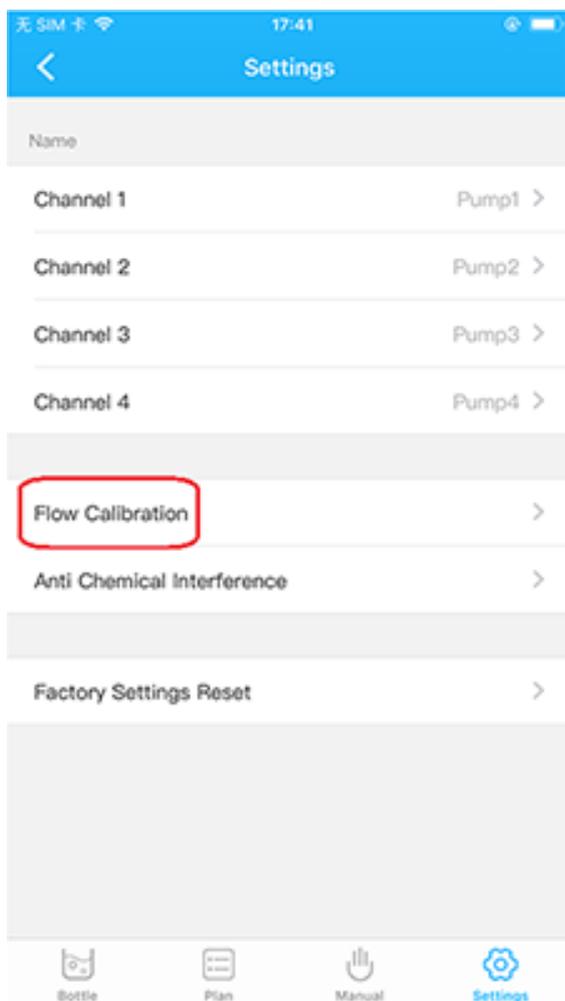


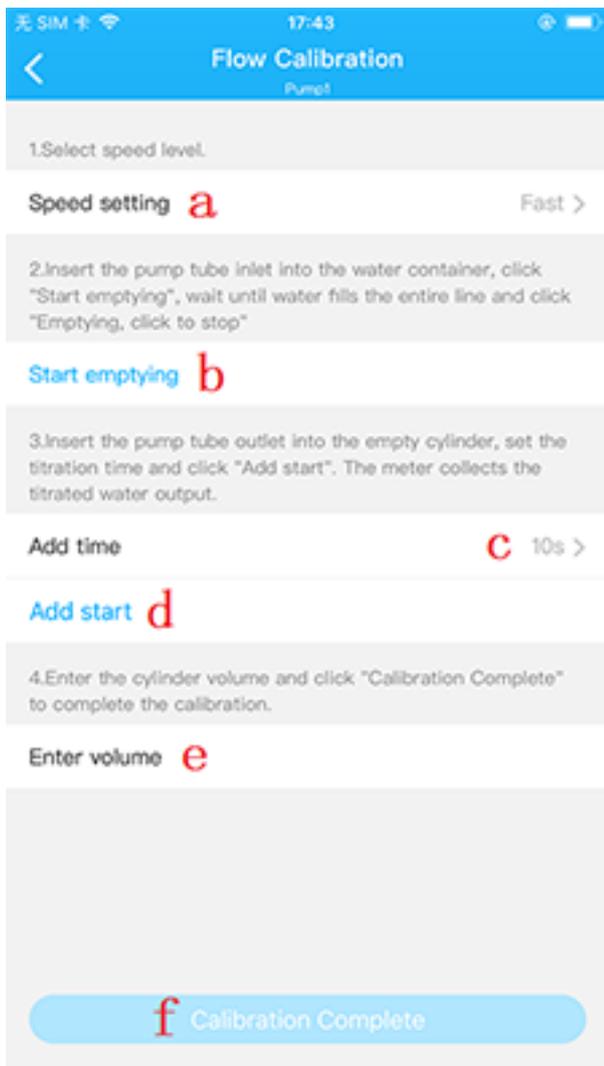
Flow Calibration

The purpose of calibration is to improve the accuracy of dosing; On the setting page, click “Flow Calibration” to enter the calibration pump head selection page, select the pump head to be calibrated, and enter the flow calibration page.

Calibration requires the use of a measuring cylinder. The pump is equipped with a 10ML measuring cylinder at the factory.

Considering the different concentration of the dosing solution of the pump tube, the aging degree of the pump tube is different. It needs to be calibrated for the first time. If the dosing is not accurate, it should be calibrated in time.





- **a.Speed setting:** select the speed level to be calibrated
- **b.Start emptying:** the purpose of emptying is to let the air in the pump tube discharge, so that the accuracy will not be affected after the calibration; after clicking the emptying, it is found that the air in the pump tube can be clicked to stop;
- **c.Set the calibration duration:** set the calibration is the running time of the pump; Before proceeding to the next step, make sure that the pump inlet is immersed in the water and the pump outlet is placed in the cylinder;
- **d.Add start:** Click "Add start" button, the pump will run the time set in the previous step and then stop;
- **e.Enter volume:** input the volume of the liquid in the measuring cylinder and input it in ml;
- **f.Calibration complete:** Click "Calibration Complete" button to complete the flow calibration.

Firmware Upgrade

When the pump firmware is updated, you can upgrade the firmware via the app.

Note: Before upgrading make sure that the app is connected to the dosing pump through the router. If the App does not control the dosing pump through the router, please connect the dosing pump to the router first, and then perform the following upgrade operation.

- **Step 1:** Open the App, search for the device, click  to enter the editing interface;
- **Step 2:** Click “Update Firmware” to enter the upgrade interface. The upgrade interface contains the latest version number and version description.
- **Step 3:** Click the upgrade button to enter the upgrade waiting interface;
- **Step 4:** After the upgrade is complete, return to the device list interface.

Note: Keep power on during the upgrade process and do not perform other operations during the upgrade process.



 **1.0.10**
Device
SN: 1.1.01004.7 IP: 192.168.31.85

Update:

1. add can upgrade program
2. optimize code space
3. turn off manual switch at the end of the add plan
4. add restore factory parameter instruction





Search devices

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Appendix

Technical Parameters

- *Dimensions(LWH)*** 250x59x49 mm
- **Weight** 950g (without power adapter)
- **Power adapter**
 - Input: See the power adapter label for details.
 - Output: DC12V 2A
- **Dosing parameters**
 - Dosing channel: 4 KFS pump heads
 - Number of dosing: 24 times / day - 1 time / 99 days
 - Dosing volume accuracy: $<\pm 5\%$
 - Manual does amount: 1 ml - 9999.9 ml
 - Tube lifetime: >1000 hours
- **Interface**WIFI and CAN communication interface

- **Working environment** Temperature 0-70°C, humidity 10%-90% (non-condensing)
- **Storage environment** Temperature -20°C-85°C, humidity 10%-90% (non-condensing)