X4 Dosing Pump

User Manual

(V1.0)

Kamoer fluid tech (shanghai) Co.,Ltd.

www.kamoer.com

Warranty

We warrant your product against any defect in material and workmanship, under normal use. In the event a product is found to be defective within the warranty period of **one year**, we will, at our option, repair or replace the defective product. The warranty period starts at the day of purchase. For warranty validation, a proof of purchase must be furnished.

The followings are excluded from the warranty:

1． Improper use of the device causing malfunction;

2． The device is repaired or modified by an unauthorized person;

3． Use of non-produced material by our company i.e. pump tube;

4． Damage by disaster;

5． Improper maintenance causing damage;

6． Use of reagent or sample causing corrosion;

7． Damage by accident or over load;

8． Consumables, such as silicone tube and fuse etc.

To obtain warranty support, you may contact our local technical support. Our technical support will attempt to diagnose and correct the problem. If the problem cannot be rectified, our technical support will ask you to return the product. You will be asked to furnish proof of purchase to confirm that the product is still under warranty.

Kamoer is registered trademark of **Kamoer fluid tech (shanghai) Co.,Ltd.** We reserve the right to improve or alter appearance and technical specifications without notice.

Notice

We have considered user safety in the design process. Please read this manual carefully. Any improper operation may cause damage or danger.

1. Safety

The product belongs to Active Products. To avoid danger, you should observe the following rules.

- If you find any visible damage, please do not switch on;
- Be sure not to add any acid, alkali, or volatile solvents;
- Be sure not to use in humid environment, avoid damage by short circuit;
- Temperature change or mechanical wear may increase the volume error.

2. Defect and anomalous situation

You must stop any operation immediately if the equipment is damaged. The equipment may be damaged when the following situations occur:

1) There is visual damage.

2) The product suddenly does not work.

3) The product is located in an inappropriate position.

1 About

1.1 Product Feature

Functions

WIFI connection	Yes
Temperature detection	Yes
Temperature threshold alarm	Yes
Liquid level detection	Yes
PC control	Yes
Phone control	Yes
LCD backlight	Standby/off
Communication port	RS485/WIFI
Calibration accuracy	Two decimal input

1.2 Appearance

X4 Details

Up key: up switch to select items and increase the number
Down key: down switch to select items, and reduce the digital
Set key: go to the next page and confirm your selection
Esc key: returns to the previous page and deselect selection

LCD screen 2.6inch

Control box

Pump head 4pcs

PharMed®BPT tubing

Straight connectors 4*2pcs

out in

DC IN Temp Liquid level detection Expansion hole Bracket holes
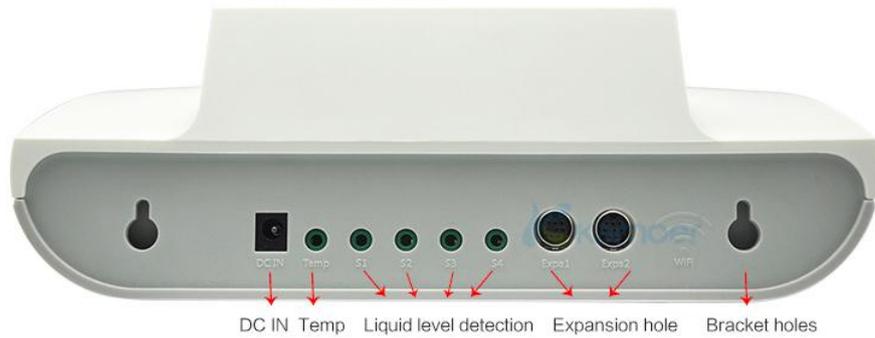
1.3 Key function

- **Up** key: up switch to select items and increase the number
- **Down** key: down switch to select items, and reduce the digital
- **Set** key: go to the next page and confirm your selection
- **Esc** key: returns to the previous page and deselect selection

1.4 Screen Introduction

After power on display Kamoer logo,see figure on right;

After logo display, 1st line shows the model and 2nd line shows the version of product, see figure on right;

After initialization, the pump enters the run page. See figure on right.

The 1st line from left to right: dosing mode (Auto or Custom), current time.

The 2nd line on left: 5s/time display each channel,start time and dosing time of the next pump. The 2nd line on right display the current temperature probe(If already installed)

1.5 Packing list

Item	Specification	Qty	Pics
AC/DC adapter	Input : See adapter tag Output : DC12V 1000mA	1 pcs	
PVC tube	3*5mm	4 m	
Plastic graduated cylinders	10ml	1 pcs	
User manual		1 pcs	
Certificate		1 pcs	

2 Use

Menu Structure

2.1 Manual Dose

- Press **Set** key to enter **Settings** menu;

- Press **Set** key to enter **Manual Dose**;

- Press **Up** or **Down** key to choose pump;

- Hold **Set** key to run, release **Set** key to stop.
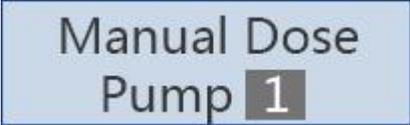
```
Manual Dose
Pump  1
```

2.2 Adjustment Dose

- Press **Set** key to enter Settings menu;
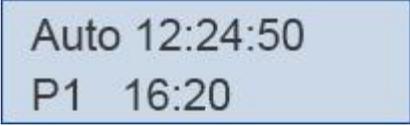
```
Auto 12:24:50
P1   16:20
```

- Press **Up** or **Down** key to choose pump, press **Set** key to enter *Adjustment Dose*;

```
2 Adjustment Dose
3 Program
```

- Press **Up** or **Down** key to choose pump, press **Set** key to enter;

```
Adjustment Dose
Pump  1
```

- Press **Up** or **Down** key to modify adjustment volume;
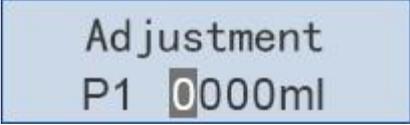
```
Adjustment
P1  0000ml
```

- Dosing...
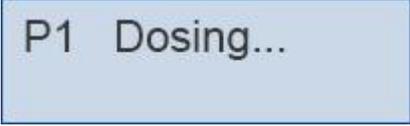
```
P1   Dosing...
```

Wait for adjustment ends(only run for one time) or press **Esc** to stop adjustment.

2.3 Program

Two dosing modes: Auto Dose and Custom Dose

Auto Dose: Runs automatically according to the parameters set

Custom Dose: User can freely set the volume and start time of each dosing period individually.

User can dose in daily, every two days, three days or at specific Days of week in this two dosing modes.

- Press **Set** key to enter **Settings** menu;
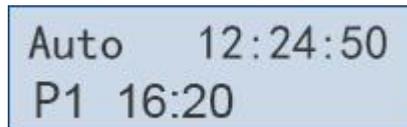
- Press **Up** or **Down** key to choose **Program**, press **Set** key to enter;

- Display the current dose mode, if you need to modify the settings or parameters, press **Set** key to enter.
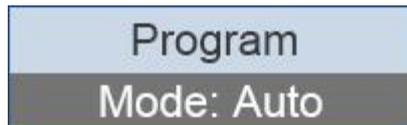
2.3.1 Auto Dose Set

- Press **Set** key to enter **Mode**, press **Up** or **Down** key to choose **Auto Dose;**
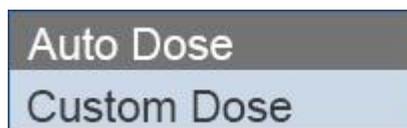
- Press **Up** or **Down** key to choose pump, press **Set** key to enter;
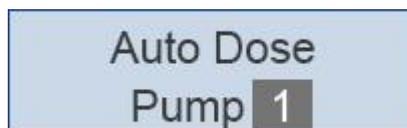
2.3.1.1 Auto Dose Time span set

- Default settings 00:00-23:59 (full-day dose),if needs to modify, press **Set** key to enter the **TimeSpan** setting interface;

- Press **Up** or **Down** key to modify start hour and end hour, press **Set** key to enter.
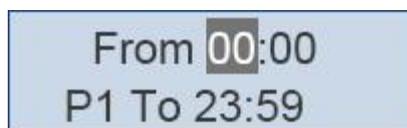
2.3.1.2 Auto Dose Amount set

- Amount is the total volume in one day, if needs to modify, press **Set** key to enter;

- Enter the amount, press **Set** key to enter.

2.3.1.3 Auto Dose Times set

- Times is the dose time in one day, if needs to modify, press **set** key to enter;
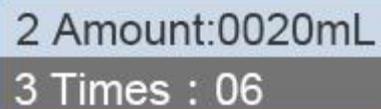
The daily total volume and dose times (max 24), the pump will dose equal volume for each time in the specified time span. The design of anti-chemical interference allows user to set a delay time which prevents any two channels dosing at the same time.

- Press **Set** key to enter **Times**, press **Set** key to confirm, press **Esc** key to cancel.

2.3.1.4 Auto Dose Delay Set

The design feature of **Delay** between adjacent pumps is mainly to prevent chemical interference. 0-30 minutes can be set.

    If dose 24times every day, each pump dose one time per one hour

    Dose at 8:00;

    Dose time of the 1st pump = 8:00 + 1st pump pump delay time.

    Dose time of the 2nd pump = 8:00 + 1st pump delay time + 2nd pump delay time.

    Dose time of the 3rd pump = 8:00 + 1st pump delay time + 2nd pump delay time + 3rd pump delay time.

    Dose time of the 4th pump = 8:00 + 1st pump delay time + 2nd pump delay time + 3rd pump delay time + 4th pump delay time

- If you need to modify, press **Set** key to enter;

- Enter delay time, press **Set** key to enter and then exit.
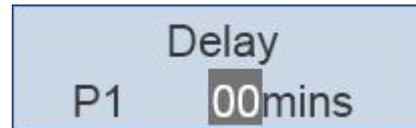
```
        Delay
P1      00mins
```

2.3.1.5 Auto Dose Cycle set

- Auto Dose cycle is divided into interval of days and days of week. If you need to set, press **Set** key to enter;
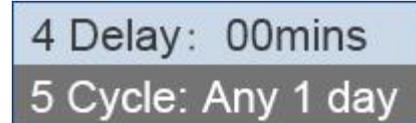
```
4 Delay:  00mins
5 Cycle: Any 1 day
```

2.3.1.5.1 Auto Dose Cycle set specific days

- Press **Up** or **Down** key to choose cycle mode, press **Set** key to confirm, press **Esc** key to cancel;

```
Interval of days
Days of week
```

- If choose **Interval of days**, press **Up** or **Down** key to modify days, press **Set** key to confirm, press **Esc** key to cancel.
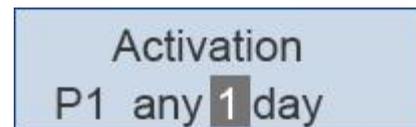
```
       Activation
P1  any 1 day
```

2.3.1.5.2 Auto Dose Cycle set days of week

- If choose **Days of week**, press **Up** or **Down** key to enable or disable, press **Set** key to confirm, press **Esc** key to cancel;

```
Interval of days
Days of week
```

- Press **Up** or **Down** key to enable or disable to dose, press **Set** key to confirm, press **Esc** key to cancel.
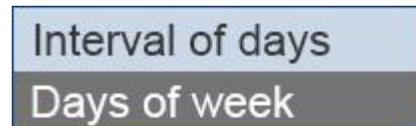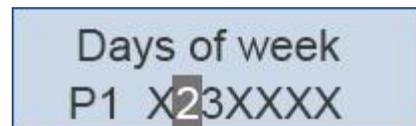
```
Days of week
P1  X23XXXX
```

2.3.2 Custom dose

- Press **Set** key to enter **Mode**, press **Up** or **Down** key to choose **Custom Dose;**

```
Auto Dose
Custom Dose
```

- Press **Up** or **Down** key to choose pump, press **Set** key to enter.

```
Custom Dose
Pump 1
```
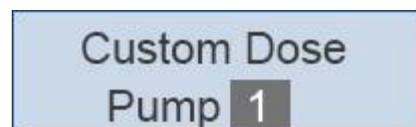
2.3.2.1 Custom dose Times set

● Press **Set** key to enter *Times* , 0-24 times, 0 times means no dose.

2.3.2.2 Custom dose Cycle set

● Custom Dose cycle is divided into interval of days and days of week, if needs dose, press **Set** key to enter.

2.3.2.2.1 Custom dose cycle Interval of days set

● Press **Up** or **Down** key to choose *interval of days*, press **Set** key to enter;

● Press **Set** key to enter *Times* , press **Up** or **Down** key to modify, press **Set** key to confirm, press **Esc** key to cancel.

2.3.2.2.2 Custom dose cycle days of week

● Press **Set** key to enter *Days of week* , press **Up** or **Down** key to modify, press **Set** key to confirm, press **Esc** key to cancel;

● Press **Set** key to enter, press **Up** or **Down** key to modify, press **Set** key to confirm, press **Esc** key to cancel.

2.3.2.3 Custom Dose Time &Amount Set

● Press **Set** key to choose *Time x Set*;

● Press **Set** key to enter, press **Set** key to enter *Times &Vol.(ml);*

● Press **Set** key to enter, press **Up** or **Down** key to modify, press **Set** key to confirm, press **Esc** key to cancel.

2.4 Option

- In *Settings* menu, press **Set** key to enter
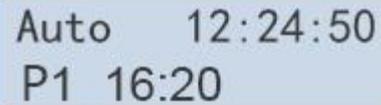
| Auto   12:24:50 |
| P1 16:20 |

- Press **Up** or **Down** key to select *4 Option* to enter *Option* page.
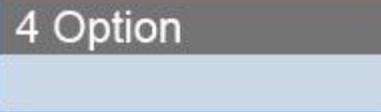
| 4 Option |

2.4.1 Dosing Pump serial number

- Display serial number
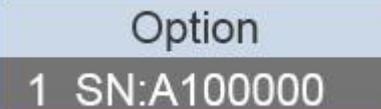
| Option |
| 1 SN:A100000 |

2.4.2 Date and Time

- Press **Set** key to enter;
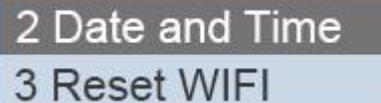
| 2 Date and Time |
| 3 Reset WIFI |

- Press **Set** key to enter current date and time.
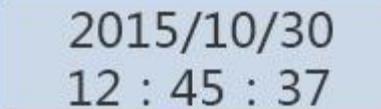
| 2015/10/30 |
| 12 : 45 : 37 |

2.4.3 Reset WIFI

- Press **Set** key to enter confirm page;
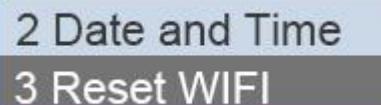
| 2 Date and Time |
| 3 Reset WIFI |

- Press **Yes** and wait for around 3 seconds, interface returned from the identified interface, it means reset WIFI successfully.
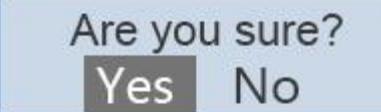
| Are you sure? |
| Yes   No |

2.4.4 Calibration

- Press **Set** key to enter *Settings* menu;
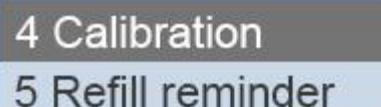
| 4 Calibration |
| 5 Refill reminder |

- Press **Set** key to start calibration;
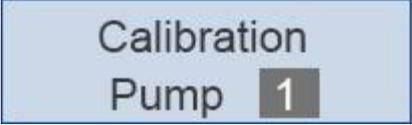
```
Calibration
Pump   1
```

- Wait for calibration ends or press **Esc** key to stop calibration;
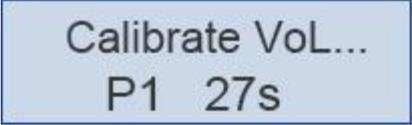
```
Calibrate VoL...
P1   27s
```

- Press **Up** or **Down** key to modify i.e. set to volume obtained in measuring cylinder, press **Set** key to confirm, press **Esc** key to cancel
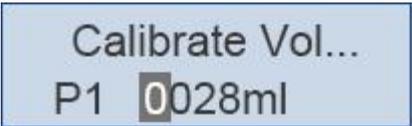
```
Calibrate Vol...
P1   0028ml
```

2.4.5 Refill setting

It is used to alert user to refill container when the residual volume of container reaches the reminder level user set.
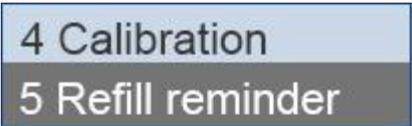
```
4 Calibration
5 Refill reminder
```

- Choose **Set container**
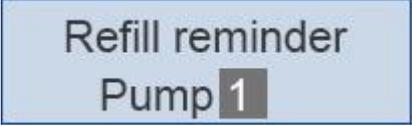
```
Refill reminder
Pump 1
```

2.4.6 Set Language

- Press **Set** key to choose **Language**;

```
6 Language
7 Restore Default
```

- Press **Set** key to enter.
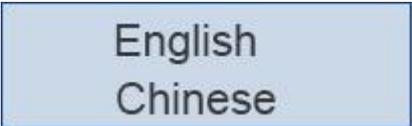
```
English
Chinese
```

2.4.7 Restore Default

Press **Set** key to resets all settings to defaults. (Only restore data settings not restored WIFI settings)

```
6 Language
7 Restore Default
```

3 Maintenance

Pump head assembly and motor are consumables, you need to replace them periodically.

Pump head components need to be replaced after **1000 hours** of operation.

Motor need to be replaced after running **800 hours.**

If use in high load, high humidity, high dust environment, please choose the replacement time depending on the actual situation of dosing pump.

4 Technical specification

Model	X4
Brand	Kamoer
Power supply	AC 100-240V 50/60Hz
Resolution	0.01ml
Dimensions	250*150*75mm
Weight	900g

Technical Support

If a problem persists and you cannot rectify, please contact our Service Department. To expedite service, please have your instrument's model ready and provide the application-specific information (such as liquids) etc.

Kamoer fluid tech (shanghai) Co.,Ltd.
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