



KSP-F01A Dosing Pump

User Manual

Version: A/3



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.

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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.

3. Caution



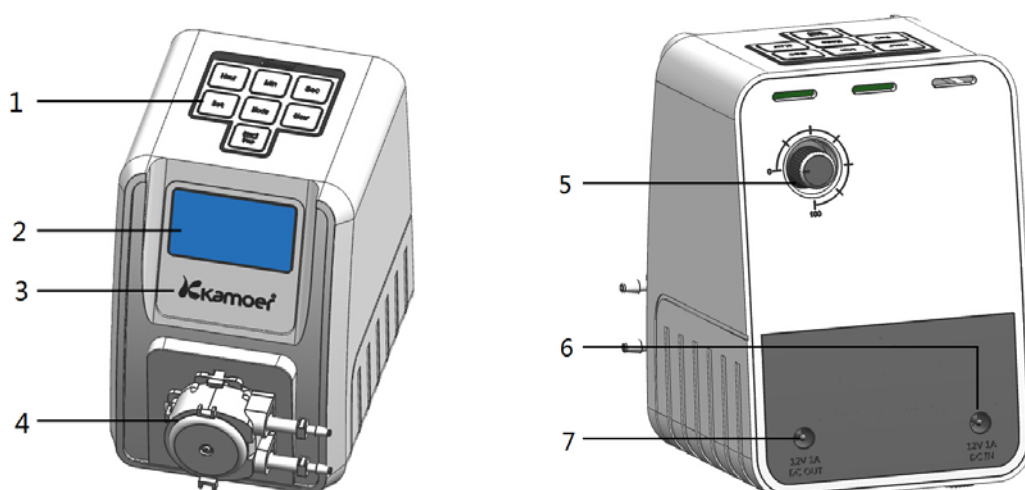
- Avoid the main-body falling into the water, don't risk the electronic components causing a short circuit.
- Avoid power adapter being scraped and concaved, especially the pinpoint on the end of wire.
- Don't tie power adapter on other articles.
- Avoid pump pipe being bent as a concave, otherwise it will block up the flowing liquid.

1 Product introduction

1.1 Features

- Powerful function with a compact appearance.
- Friend man-machine interface with lcd backlight display and key operation.
- Support controlling speed with a speed control knob.
- Real time clock, support timing start and stop.
- Interval between each run can be set, support cycle run, support time-span run.
- Support flow rate calibration.
- Support multiple machine use in a series with expansion cable.

1.2 Parts Name





1. Button 2. LCD display 3. LCD protective screen 4. Pump head component
5. Speed control knob 6. DC IN 7. DC OUT

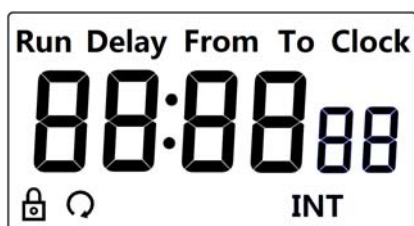
1.3 Button introduction



- **Manual** key: Click to run or stop pump manually
- **Calibrate** key: Click to start flow calibration
- **Set** key: Click to switch the parameters to be set
- **OK** key: Click to confirm the set parameters
- **Auto** key: Click to start or stop automatic mode

-  key: Click to minus one or press to minus ten when setting parameters, or switch to preview parameters when not in setting mode
-  key: Click to plus one or press to plus ten when setting parameters, or switch to preview parameters when not in setting mode

1.4 Display introduction



Run: the field of run page

Delay: the field of delay page

From: the field of start time of period page

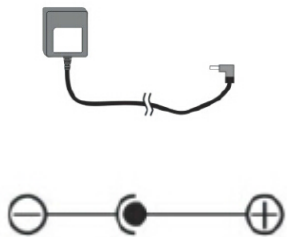

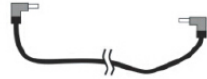
To: the field of end time of period page

Clock: the field of clock page

Note:

- 1. The lower left corner of the lock icon shows that the pump is running, at this time it cannot be operated other functions.**
- 2. After a period of time without any operation, the pump will enter standby mode, backlight off.**

1.5 Accessory

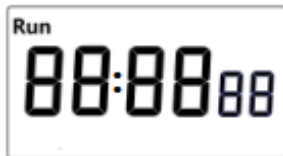
| Name | Model | Quantity | Description |
|---------------------|---|----------|---|
| Power Adapter | See the adapter tag | 1pcs |  |
| PVC Connecting tube | | 3meters |  |
| Extension cable | L-Form DC Socket connector Size: 5.5*2.1mm Length :75mm | 1pcs |  |
| Plastic cylinder | 10ml/25ml | 1pcs | |
| User manual | | 1pcs | |
| Certification | | 1pcs | |

2 Interface introduction

2.1 Run interface



Run by volume, numbers represent volumes in milliliters, where large numbers represent integer volume, small numbers represent decimal volume, and volume settings range from 0.01 to 9999.99 milliliters.



Run by time, numbers in turn represent hours, minutes and seconds, the time setting range is 1 second -99 hours 59 minutes 59 seconds.

Note: In the idle state, long press "Calibration" for 5 seconds, switch volume running mode and time running mode.

2.2 Delay interface



The waiting time between each running, the range of delay time is from 0 second to 99 hours 59 minutes and 59 seconds.

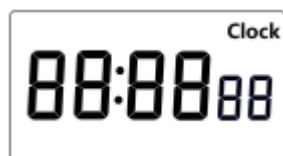
Note: delay 0 seconds, the machine run only once.

2.3 Start time and end time interface in time period



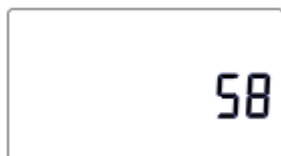
From stands for the start time in time period, **To** stands for the end time in time period, pump runs in the time period and stops outside of the time period.

2.4 Clock interface



Set and see current time.

2.5 Calibration interface



The countdown page.



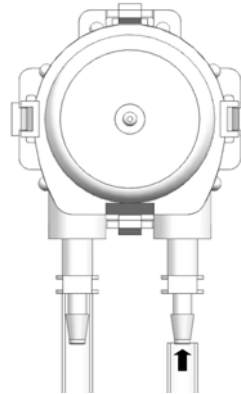
The high digital stands for the integer part of calibration volume, the short digit stands for the decimal part of calibration volume, the unit is milliliter.

3 Installation

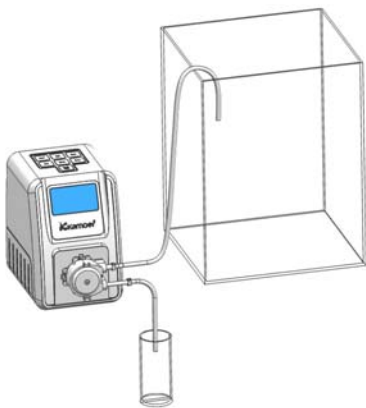
1. Lay on the desktop, plug in the pump shown as the picture.



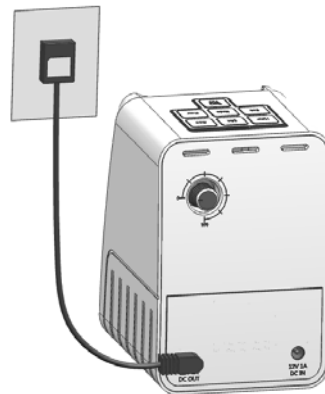
2. Put PVC tube into the joint for plastic tube.



3. Immerse the PVC tube inlet into the fluid container, while put the outlet into the fish tank (head is around 2 meters).



4. Power adapter plugged into AC power socket, output terminal plugged into DC IN socket of the dosing pump.








By using the attached extension cable, one adapter can support up to 3 sets of machine running at the same time, in the same way, two adapters for 6 sets of machine.



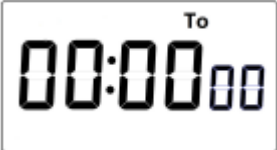






4 Operation mode

The dosing pump can support seven operation modes as below:

| Mode | Description | Setting |
|---|---|--|
| Manual | press the "Manual" key to start running; press the "Manual" key to stop when running Note: Only this mode support speed adjust by knob. | |
| Single quantitative add | After reaching the setting amount, the pump will stop. Note: After setting, press "Auto" to run. | Parameters Delay , From and To are 0  Parameter Run is not 0  |
| Cycle quantitative add | Set amount and time, then the pump will run cyclically. Note: Press "Auto" to start, and press "Auto" again to stop . | Parameters From and To are 0  Parameters Run and Delay are not 0  |
| Single quantitative add during a certain time | In setting time, the pump will run. Note: Press "auto" to start, and press "auto" again to stop. | Parameter Delay is 0  Parameter Run is not 0 |

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| | | |
|---|--|---|
| | |  <p>either From or To is not 0</p>   |
| Cycle quantitative add during a certain time | <p>Set amount and time, then the pump will run cyclically during this time.</p> <p>The pump will not work without the time you set. Note: Press “auto” to start, and press “auto” again to stop.</p> | <p>parameters Run and Delay are not 0</p>   <p>either From or To is not 0</p>   |

5 Flow rate adjustment

Only in **Manual** mode, you can adjust dosing flow rate through turning the backside rotary knob of the dosing pump.

Note: *You can change the flow rate only in manual mode. In other states, the rotary knob does not change the flow rate immediately. The next time you start the manual run, the dosing pump will run according to the adjusted position.*

6 Calibration



6.1 Overview

Calibration is a process to determine accurate flow rate by using a proper measuring tool to measure added volume during a certain time period. (10ml measuring cylinder is delivered for free with the machine, for more accurate flow rate, a larger measuring cylinder can be used). Pump is needed to be calibrated under the following occasions:

- Dosing pump used for the first time;
- After running for a long time, the displayed flow rate is quite different from actual flow rate (pump may be wore);
- Flow rate is adjusted by using rotary knob.

6.2 Operation

1. connected to the pipeline;
2. Empty the liquid in the pipeline;
3. Empty the graduated cylinder;
4. Press the "calibration" key to start calibration;
5. Waiting for the end of the countdown operation;
6. Measure the volume of liquid in the cylinder

7. Input the volume by press  and 



7 Application

For better understanding customers' needs and testing our dosing pump's performance, our company resorts to senior coral experts to take care of our coral tanks by using KSP-F01A dosing pump to add nutrient solution (Ca, Mg, KH etc.)

Tank volume: 360L

Creature: SPS 6; LPS 5; Fish 4; Other 8

Dosing solution: Calcium, Magnesium, KH

Dosing amount: 20ml (take Cal as an example)

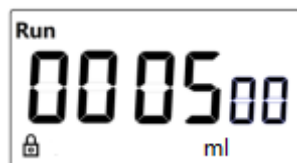
Dosing times: 4 times /day

How to use:

1. Connect the tubing;
2. Empty the tubing (manual operation emptying, while adjusting the knob to the appropriate flow rate);
3. Calibrate flow rate;
4. Need to add 20ml per day, drop 4 times; each drop 5ml, interval 6 hours;



5. Press "Auto" to start.



8 Maintenance

The pump head components and motors are consumables, regularly replace them is necessary.

Model: F01A-DC

Pump head components: replace them after running 1000 hours.

Motor: replace it after running 800 hours.

Model: F01A-STP

Pump head components: replace them after running 1000 hours.

Motor: replace it after running 5000 hours.

If they are used under high-load, high-humidity or environments full of dust, replace them according to the dosing pump's actual status.

9 Specifications

| Model | | F01A-DC | F01A-STP |
|---------------------|-------------|-------------------------------|---------------------------|
| Pump head | | KPP | KAS |
| Pump head life | | 1000 hours | |
| Motor life | | DC motor, 800 hours | Stepper motor, 5000 hours |
| Adapter | Input | AC 100-240V 50-60Hz 1.0A max | |
| | Output | DC 12V 1A | DC24V 1.9A |
| power supply | | 12W | |
| Adding times | | 96 times/day- one time/4 days | |
| Volume range | | 1ml-9999ml | |
| Precision | | <±2% | |
| Working environment | | Temperature 0-70℃ | |
| Storage environment | humidity | 10%-90% (non-condensable) | |
| | temperature | -20℃-85℃ | |
| | humidity | 10%-90% (non-condensable) | |
| dimensions(L*W*H) | | 200*170*110mm | |
| Weight | | 660g | |

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