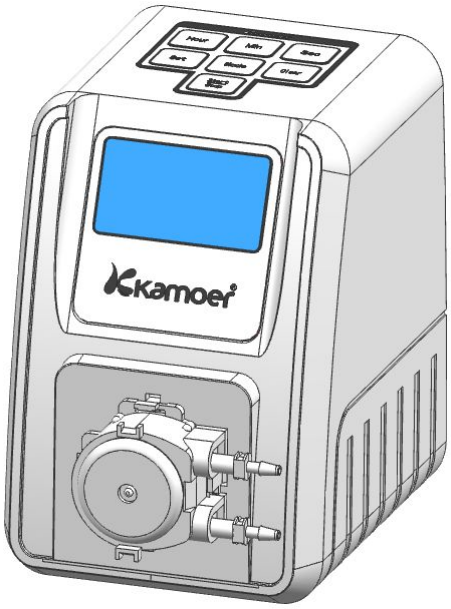
KSP-F01A Dosing Pump

User Manual



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.

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

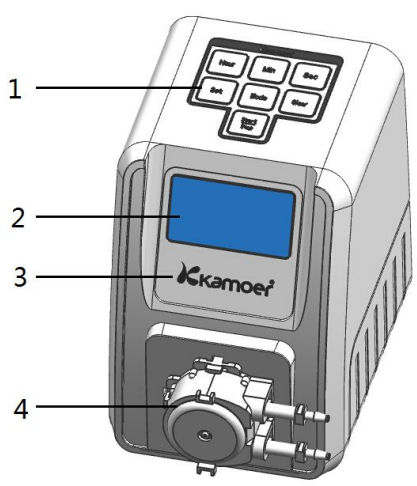
- Avoid the main-body falling into the water, don’t risk the electronic components causing a short circuit.
- Avoid power adapter being scraped and concaved, especially the pinpoint on the end of wire.
- Don’t tie power adapter on other articles.
- Avoid pump pipe being bent as a concave, otherwise it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

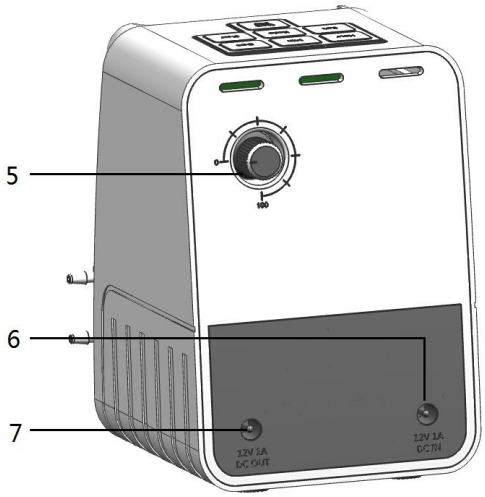
1 Product introduction

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.

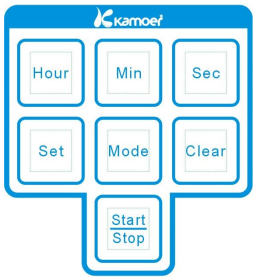
1.2 Parts Name





1. Button 2. LCD display 3. LCD protection screen 4. Pump head component
5. Speed control knob 6. DC 12V IN 7. DC 12V OUT

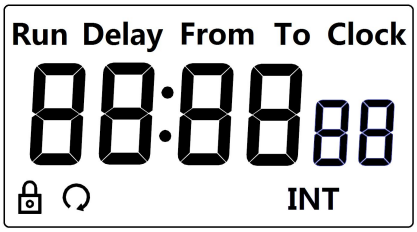
1.3 Button introduction



- **Mode** key: Switch the interface among Run, Delay, From, To, Clock and Calibration.
- **Set** key: Click to see the interface filed flicker or not, you can set parameters when interface filed flicker.
- **Clear** key: Click to clear the parameter of current interface
- **Start/Stop** key: Click to run pump when pump stops, and Click to stop pump when pump runs.

- **Hour** key: Set hundreds place and thousand of volume in run interface, set volume in calibration interface, set hour in other interface. Click to add one, press and hold to add continuously.
- **Min** key: Set the unit and decade of volume in run interface, invalid in calibration interface, set minute in other interface. Click to add one, press and hold to add continuously.
- **Sec** key: Set decimal places of volume in run interface, set second in other interface. Click to add one, press and hold to add continuously.

1.4 Display introduction

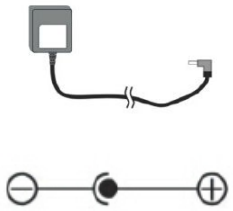
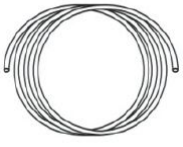


Run: the filed of run interface
Delay: the filed of delay interface
From: the filed of start time of period interface
To: the filed of end time of period interface
Clock: the filed of clock interface

The pump will enter standby mode when no any action in one minute. In standby mode, the screen displays current time and the backlight is off, click any key to light up the backlight only and no any other action will execute.

Note: You can't set parameters when lock icon displays in the left bottom, it stand for that the pump is in running status.

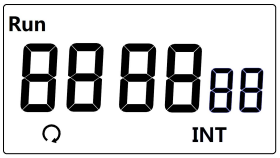
1.5 Accessory

Name	Model	quantity	picture
Power Adapter	Input : see the adapter tag Output : DC 12V 1000mA	1pcs	
PVC horse	Size: 3*5mm	3 meters	
Extension cable	L-Form DC Socket connector Size: 5.5*2.1mm Length :75mm	1pcs	

Plastic measuring cylinder	10ml	1pcs	
User manual		1pcs	
Certification		1pcs	

1 Interface introduction

2.1 Run interface

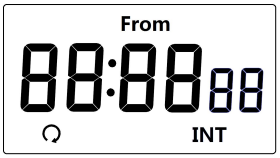


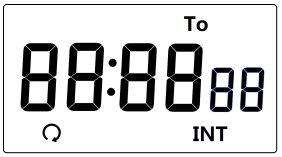
The value stand for volume, the unit is milliliter, the high digital stand for integer, the short digital stand for decimal, the range of volume is between 0.01 to 9999.99 milliliter. **Hour** key sets hundreds place, **Min** key sets the unit and decade, **Sec** key sets decimal place.

2.2 Delay interface

The waiting time between each running, the range of delay time is from 1 second to 99 hours 59 minutes and 59 seconds. **Hour** key sets hour, **Min** key sets minute and **Sec** key sets second.

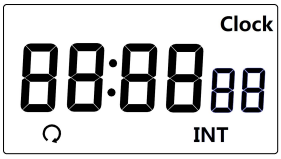
2.3 Start time interface and end time interface in time period





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



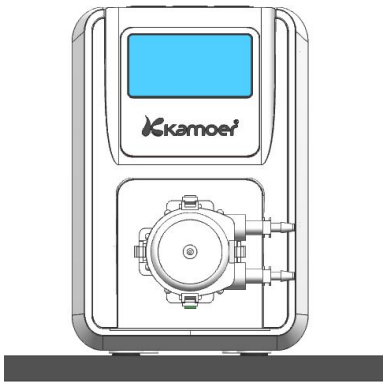
Set and see current time.

2.4 Calibration interface

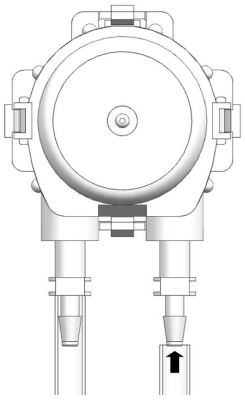
The high digital stands for calibration volume, the unit is milliliter. The short digital stands for calibration time, the unit is second.

3 Installation

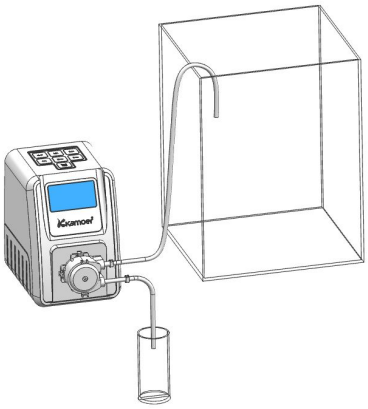
1. Lay on the desktop, plug in the pump shown as the picture.



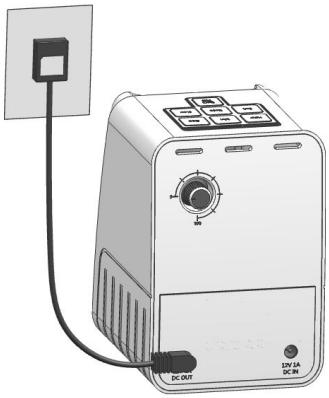
2. Put PVC tube into the joint for plastic tube.



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



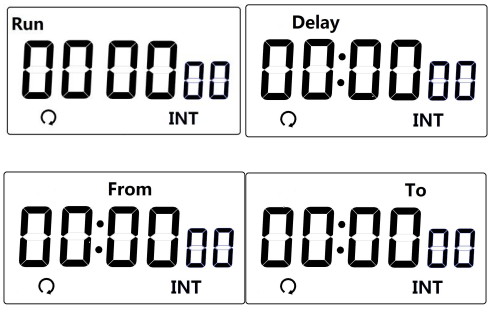
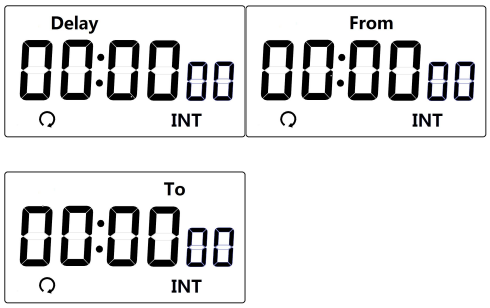
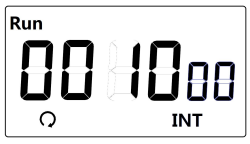
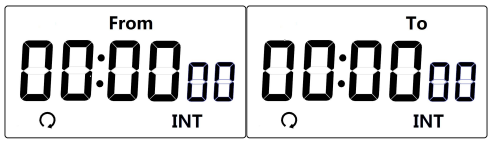
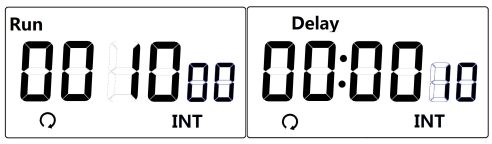
4. Power adapter plugged into AC power socket, output terminal plugged into DC 12V IN socket of the dosing pump.

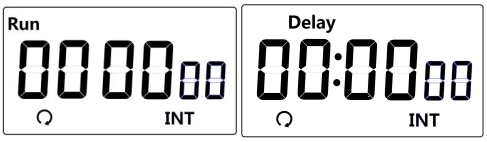
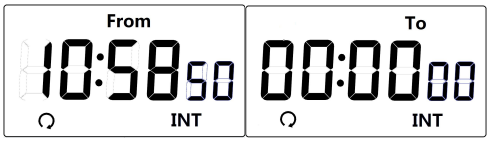
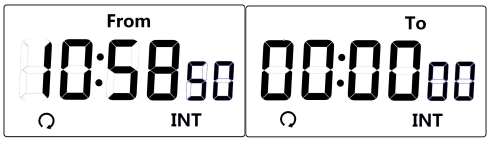
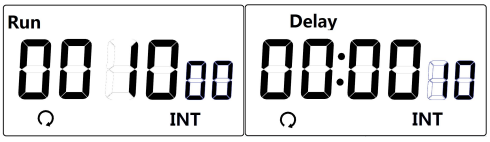
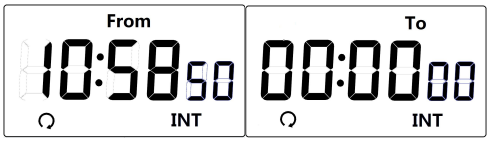


By using the attached extension cable, one adapter can support up to 3 sets of machine running at the same time, in the same way, two adapters for 6 sets of machine.

4 Operation mode

The dosing pump can support seven operation modes as below:

Mode	Description	Parameter setting
Manual	Start and stop the pump manually	
Continuous	Stop the pump manually while it is running	**Run**, **Delay**, **From**, **To** are set to 0 
Add fixed amount a single time	Automatically stop after reaching the specified volume.	**Delay**, **From**, **To** are set to 0  **Run** cannot be set as 0 
Periodically add fixed amount	Delay a certain time after adding to the specified volume, after that, the pump is operated as the same way.	**From** and **To** are set to 0  **Run** and **Delay** cannot be set as 0 

Add continuously during a certain time period	Pump is running continuously during a specified time period; pump stops running in other time periods.	**Run** and **Delay** are set to 0  For **From** and **To**, at least one parameter cannot be 0. 
Add fixed amount a single time during a certain time period	Pump stops automatically after reaching specified volume during a specified time period; pump stops running in other time periods.	**Delay** is 0  **Run** cannot be 0  For **From** and **To**, at least one parameter cannot be 0. 
Periodically add fixed amount during a certain time period	During a certain time period, delay some time after the pump is added to specified volume, after that, pump is operated as the same way; pump stops running in other time periods.	**Run** and **Delay** cannot be 0  For **From** and **To**, at least one parameter cannot be 0. 

After set the parameters, press **Start/Stop** key to start, and press **Start/Stop** key to stop while the pump is running.

Among these operation modes, most users prefer to periodically add fixed amount during a certain time period.

5 Flow rate adjustment

User can adjust dosing flow rate through turning the backside rotary knob of the dosing pump.
Whenever the dosing pump is in a state of power off, running (with immediate effect), waiting and standby, the rotary knob becomes effective immediately. Provided the rotary knob is turned, new flow rate will be shown at the next dosing.
Note: when fixed dosing amount is a must, re-calibration is necessary after the flow rate is adjusted.

6 Calibration

6.1 Overview

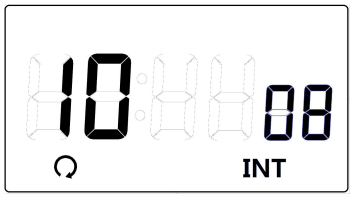
Calibration is a process to determine accurate flow rate by using a proper measuring tool to measure added volume during a certain time period. (10ml measuring cylinder is delivered for free with the machine, for more accurate flow rate, a larger measuring cylinder can be used). Pump is needed to be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

Switch to calibration interface through Mode key, set calibration volume by pressing Hour key (setting after calibration is also workable), press Start/Stop key to start calibration and timing at the same time, when reaching the specified volume, press Start/Stop key to stop the pump, the time shown is dosing time, at this point:

- Switch to other interfaces by pressing Mode key, calibration parameters can also be saved at this time;
- Restore the previous calibration parameters by pressing Clear key;
- Press Start/Stop key to re-start calibration.



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.)
Coral tank volume: 360L
Living beings: six SPS, five LPS; four fishes and eight other else.
Dosing liquid: Kamoer dosing liquid (Ca, Mg, KH)
Dosing amount: 20ml bio-calcium (take bio-calcium as an example)
Dosing times: four times per day
KSP-F01A dosing pump setting:
Set rotary knob, calibrate 40ml(notice: re-calibration for setting rotary knob each time), add four times for adding 20ml, add 5ml each time,

Switch to Run interface by pressing **Mode** key, press Set key to set;

Set 5ml by pressing **Min** key;

Switch to Delay interface by pressing **Mode** key;

Set 6h by pressing **Hour** key, exit setup by re-pressing Set key;

After setting, press **Start/Stop** key to run.

8 Maintenance

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

Pump head components: replace them after running 1000 hours.
Motor: replace it after running 800 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	KSP-F01A-DC-A/B	
Adapter	Input	AC 100-240V 50-60Hz 1.0A max
	Output	DC 12V 1A
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-condensible）
	temperature	-20℃-85℃
	humidity	10%-90%（non-condensible）
dimensions(L*W*H)	200*170*110mm	
Weight	660g	