Time and temperature Control Valve V1.0

Parameter:

Working voltage: DC11~13V (AC110-230V access through a power adapter)

Working medium: domestic water

Working temperature: 0～100℃, working pressure:1.0 Mpa (PN10)

Protection:IP67

Valve open/close:90 degree

Ambient temperature: -10℃-60℃

Power:5W

Temperature measurement accuracy: ±2℃

Life time: 50,000 times at least

Product character

1.Heat water at preset temperature

2.Energy conservation

3.Six time periods set time and temperature

4.Humanized operating system

5.Anti-freezing function

6.Using more flexible and installing more convenient

1. **Screen Panel**

Pic 1. Screen panel

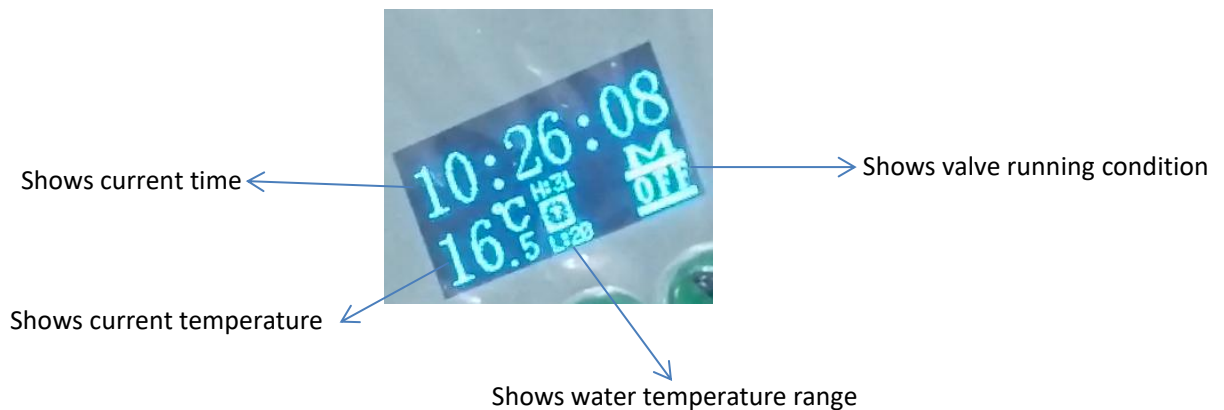Screen panel includes a 128*64 dot matrix OLED screen display and 3 buttons.The function of 3 buttons:

SET: set button/confirm button

▲:position selection key / plus button

▼:position selection key / minus button

Long press SET button for 3s can enter into setting screen

2. **Display interface**

Shows current time

Shows valve running condition

Shows current temperature

Shows water temperature range

Pic 2. Screen

1): showing current time.

2): Showing detected temperature.Temperature ranges from -9.9~99.9 Celsius, when the temperature detector fails to work,short circuit or open circuit will show like it shows ----- .

3): Showing high(H) and low(L) temperature value and be controlled at a certain temperature range by valve(in the Pic 2,the high temperature is 31 Celsius and low temperature is 20 Celsius).

The icon in the middle of H and L means valve is controlled by temperature and time, within the setting time will valve control the temperature in the setting range.

means valve is only controlled by temperature, keeping the valve in a setting range.

4):Showing the anti-freezing condition and operation condition.

If the temperature is not reaching anti-freezing temperature(ex.if set the anti-freezing temperature at 4 Celsius, but the real temperature is higher than 4Celsius), it will not show.

When the anti-freezing temperature is reaching and shows like (AF=Anti-freezing)

When the anti-freezing temperature is reaching,and valve is not operated for 1 hour,the

anti-freezing logic will start and shows like,otherwise, it will show .

There will be a number as shows 1 below 'AF' , it means the current setting items.There are total 7 setting items.

5): Showing the valve running condition, total 4 icons:

 means valve is not in the position of open or close.

 means valve is in the close position

 means valve is in the open position

 means valve is locked-rotor error, can long press 'SET' button into setting to clear this error

state.

6).Energy saving function,'E' means opened this function,otherwise will not show.

3.Setting

 Long press 'SET' button into setting display. Total 8 menus:

01. Temp Range: Temperature setting range
02. Time Range: Time setting range, total 6 time period for a day
03. Time Set：Current time setting
04. Anti-freeze: Anti freezing function open or close setting, as well as the anti-freezing temperature, 4~9 Celsius.
05. Block Prot: Locked-rotor function opens or not setting and as well as showing the locked-rotor current value
06. Eco Mode: Energy saving mode opens or not, and the valve open/close time under this mode.
07. Display: Setting the display screen whether need to enter into screen protection and its entry delay time.(some kind like the screen protection as mobile phone)
08. Manual: Manually control function,can open or close valve manually.
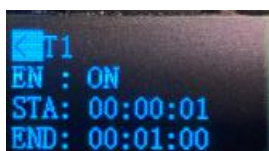

Pic 3.Setting menu

01. Temp Rang: sets the temperature controlled range,'Hi' means high temperature(highest to 50 Celsius),'Lo' means low temperature(lowest to 0 Celsius).
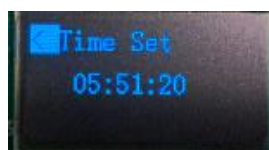
02. Time Range: sub-menu,select the required setting time. This menu can quick preview the preset value, ON/OFF indicates whether to enable the time range. O/X means the validity of set time periods.O is effective,X is invalid. The top one between time means start time, the next one means end time.(take T1 for ex. The first line00:00:01 is start time and second line 00:01:00 is end time)

Time period setting: after selecting one time period, press SET button to the next menu to set time. EN means starts or not, setting time (STA) is equal to start, and finish time(END)

03. Timer Set: Current time setting

04. Anti-freez: Anti-freezing function setting, sets whether to start anti(EN) and anti-freezing temperature(Temp)

05. Block Prot: Locked-rotor function setting, sets whether to start locked-rotor protection(EN) and its protected current(Curr).

06.Eco Mode: Tacitly approve opening for 10min and close for half and hour.
Ex.: Set high temperature at 40 Celsius,low temperature at 20Celsius, when the energy mode starts,valve will open after the temperature reaching 20Celsius, if 10min later the temperature is still not able to reach to 40Celsius, the valve will close automatically for half an hour, and then open for 10min.After 10min if temperature reaches to 40 Celsius, the energy mode will not start again.

07.Display: Screen protection setting, sets whether to start screen protection(AutoOff) and delay time(Time)

08.Manual: Manually operate function,select OPEN to open valve, select CLOSE to close valve