Tuya Liquid Level Controller

1. Instruction

It is a WIFI intelligent Liquidlevel controller, which can be set by APP to realize Liquidlevel monitoring, Liquidsupplement or drainage, high and low Liquidlevel remote APP push alarm notification etc,. The product is suitable for various Liquidlevel control occasions, such as HVAC system, hot Liquidprocess, municipal drainage, boiler, Liquidtower, storage tank, breeding irrigation etc.

2. **Main Features：**

* Real-Time Supervision: APP can display the current Liquidlevel, working mode, starting/stopping Liquidlevel etc.
* Control equipment (relay 1) on/off remotely via App.

Users can also turn on/off the equipment by the manual switch button B when it is without WIFI or WIFI is offline.

* Two relay outputs: Relay 1 control Liquidlevel, Relay 2 control heater or external wired siren.
* Preset"Add water" or "Drain water" working mode, can auto turn on/off relay 1 when it reaches to the preset Liquidlevel value.
* Set upper and Lower limit value of Liquidlevel alarm via APP, real-time push alarm notification to users' smart phone.
* Can set equipment (Relay 1) running time or time delay or time-period control.
* Power off memory: It can remember all the previous setting and status when power supply recovers. Don't worry about data loss caused by power failure.

3. Specification:

* Product Size: 89mm x 55mm x 44mm
* Power supply: AC220V
* Relay outputs: two relay outputs（normal open）

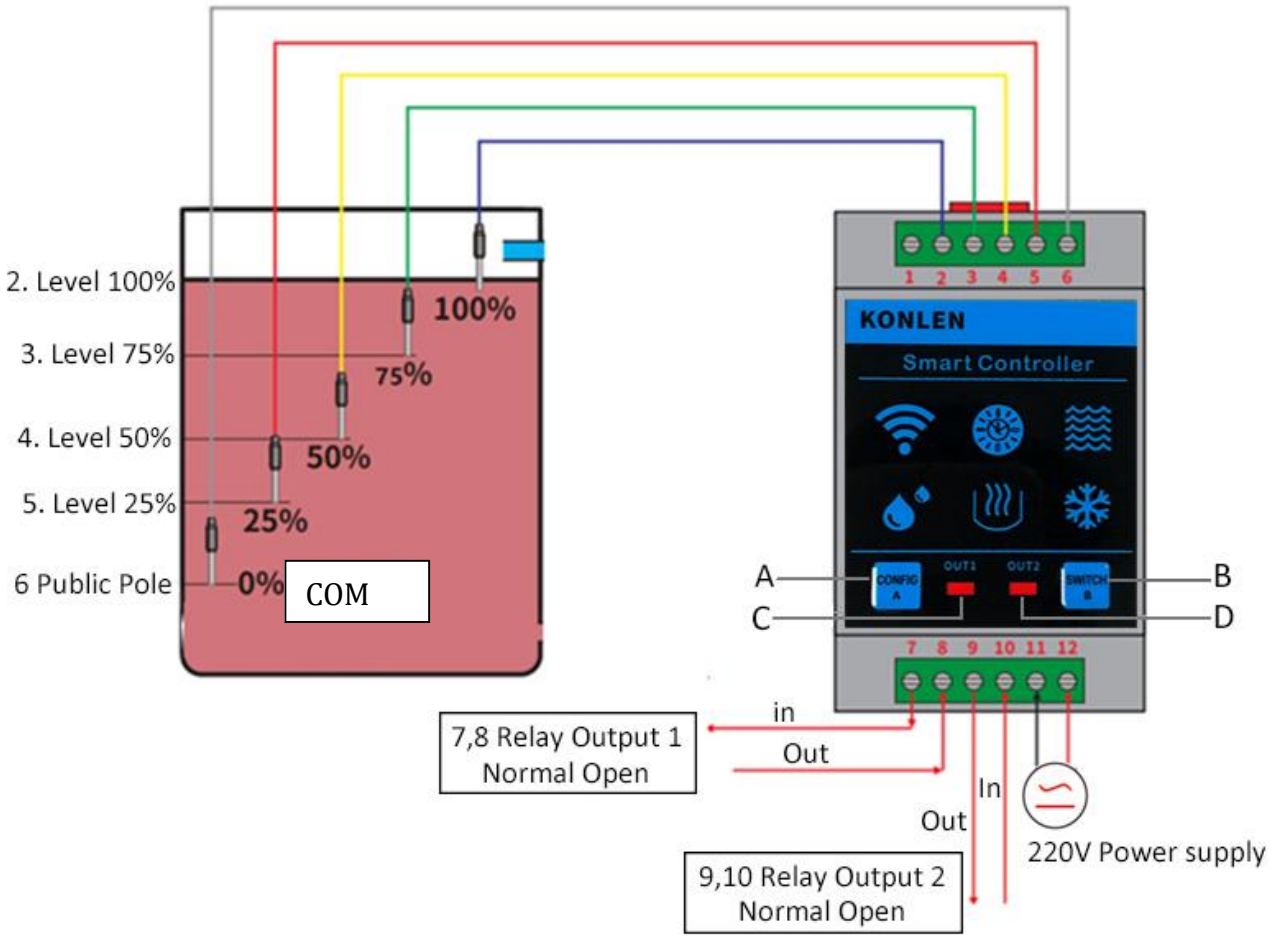
Note: The contact current capacity is 10A for resistive load and 2A for inductive load. It can control 2000W resistive load or 500W motor /Liquidpump. Need larger loads, please add AC contactor, or it will cause burning danger.

* Relay lifespan: 100,000 times.
* Device working environment : -10℃∽50℃
* WIFI: Wi-Fi 2.4GHZ B/G/N, not support 5G.
* **Five water level sensors with different cable length.**

White cable: 3.5 meters (appr 11.48ft)
Red cable: 3.1 meters (appr 10.17ft)
Yellow cable: 2.3 meters (appr 7.54ft)
Green cable: 1.1 meters (appr 3.60ft)
Blue cable: 1 meter (appr 3.28ft)

Users can prolong the cable by themself if cable length is no enough. The max cable length th at can be extended is 30 meters (appr 100ft).

4. **Product Instruction**



Before connecting to the 220V power supply, please reconfirm whether your wiring is correct to prevent equipment from burnout

Antes de conectarse a la fuente de alimentación de 220 V, reconfirme si su cableado es correcto para evitar que el equipo se queme

Avant de vous connecter à l'alimentation 220V, veuillez reconfirmer si votre câblage est correct pour éviter que l'équipement ne grille.

Перед подключением к источнику питания 220 В проверьте правильность подключения, чтобы оборудование не перегорело.

A: WIFI configuration button

B: On/Off Switch of Relay Output 1: Users can press the button B to switch on/off Relay 1 manually. It is only effective when the current Liquidlevel is between the preset start and stop-Liquidlevel value.

C: WIFI Configuration Indicator/ Relay Output 1 Status Indicator

D: Relay Output 2 Status Indicator

Indicator flashing during WIFI configuration, Indicator on when relay closed, Indicator off when relay open.

Terminal 1: No use.

Terminal 2: 100% Liquidlevel

Terminal 3: 75% Liquidlevel

Terminal 4: 50% Liquidlevel

Terminal 5: 25% Liquidlevel

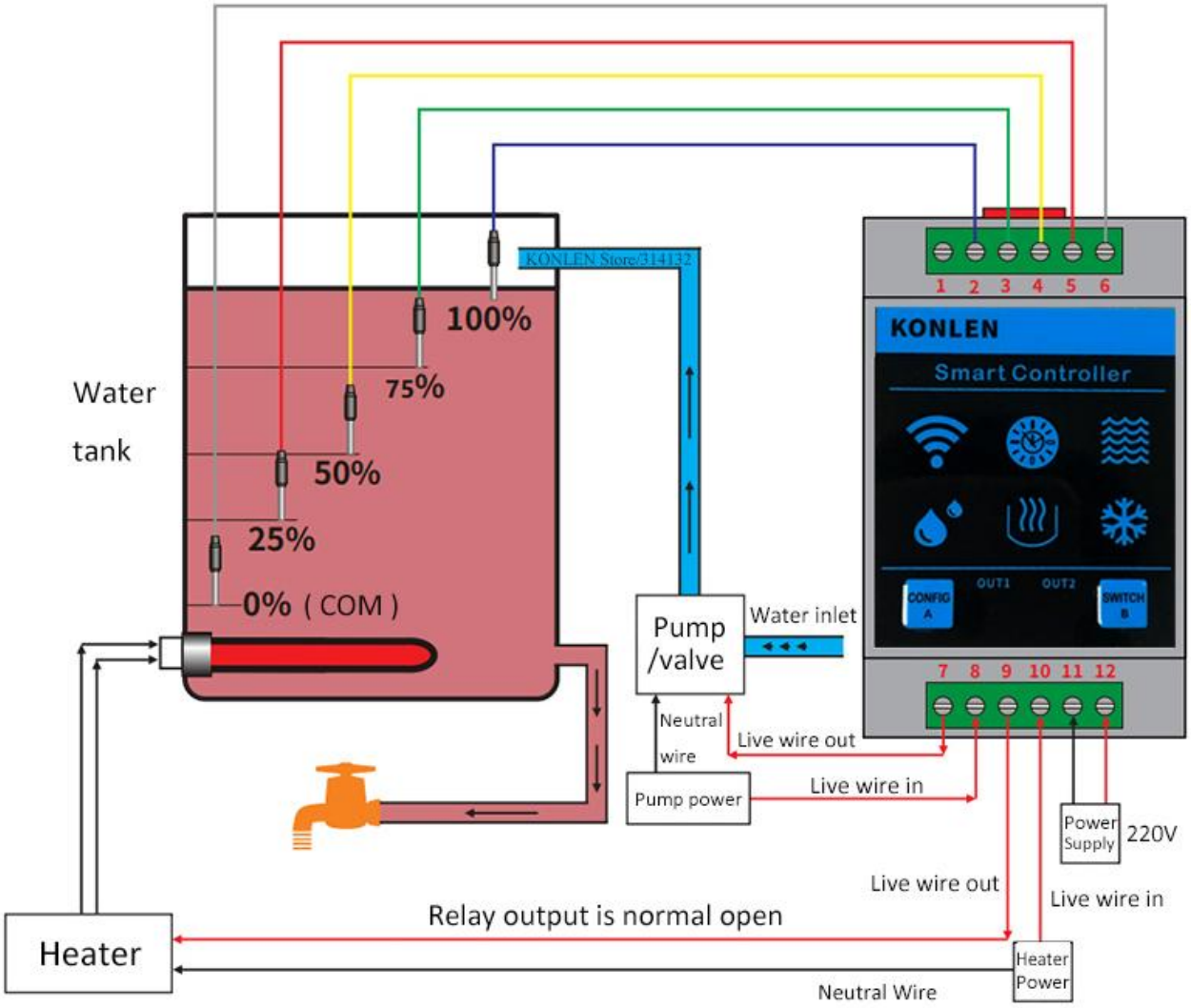
Terminal 6: Public Liquidpoint (COM)

Terminal 7,8: Relay Output 1 (Normal Open)

Terminal 9,10: Relay Output 2 (Normal Open)

Terminal 11,12: 220V Power Supply.

5. **Wiring Diagram (Take" add water" as example)**



Liquidlevel rising:

Liquidlevel < 25% electrode, App display 0%;

Reach to 25%, App display 25%;

Reach to 50%, App display 50%;

Reach to 100%, App display 100%.

Liquidlevel reducing:

Liquidlevel below 100%, App display 75%;

Below 75%, App show 50%;

Below 50%, App display 25%;

Below 25%, App display 0%.

Normally Relay output 1 (terminal 7.8) connects with Liquidpumps, used for controlling Liquidpump on/off.

Relay output 2 (terminal 9.10) has four function options (can set via App).
(1) Anti-Boil-Dry, (2) Alarm output, (3) Manual Control, (4) Standby Output.

If the option is Anti-Boil-Dry, users can connect the relay output 2 with heater, used for auto controlling heater on/off. When Liquidlevel is < 25%, auto-turn off heater (relay output 2); when Liquidlevel is ≥25%, auto-delay 15s to turn on heater (relay 2).

If the option is alarm output, users can connect a wired siren with the relay 2.
When the Liquidlevel is higher or lower than the preset limit, the siren will go off.

Manual control: Manual control relay 2 on/off
Standby output: The function is just for backup usage of relay output 1.
When the relay 2 meets malfunction, users can use relay output 2 instead of relay 1.

Operation

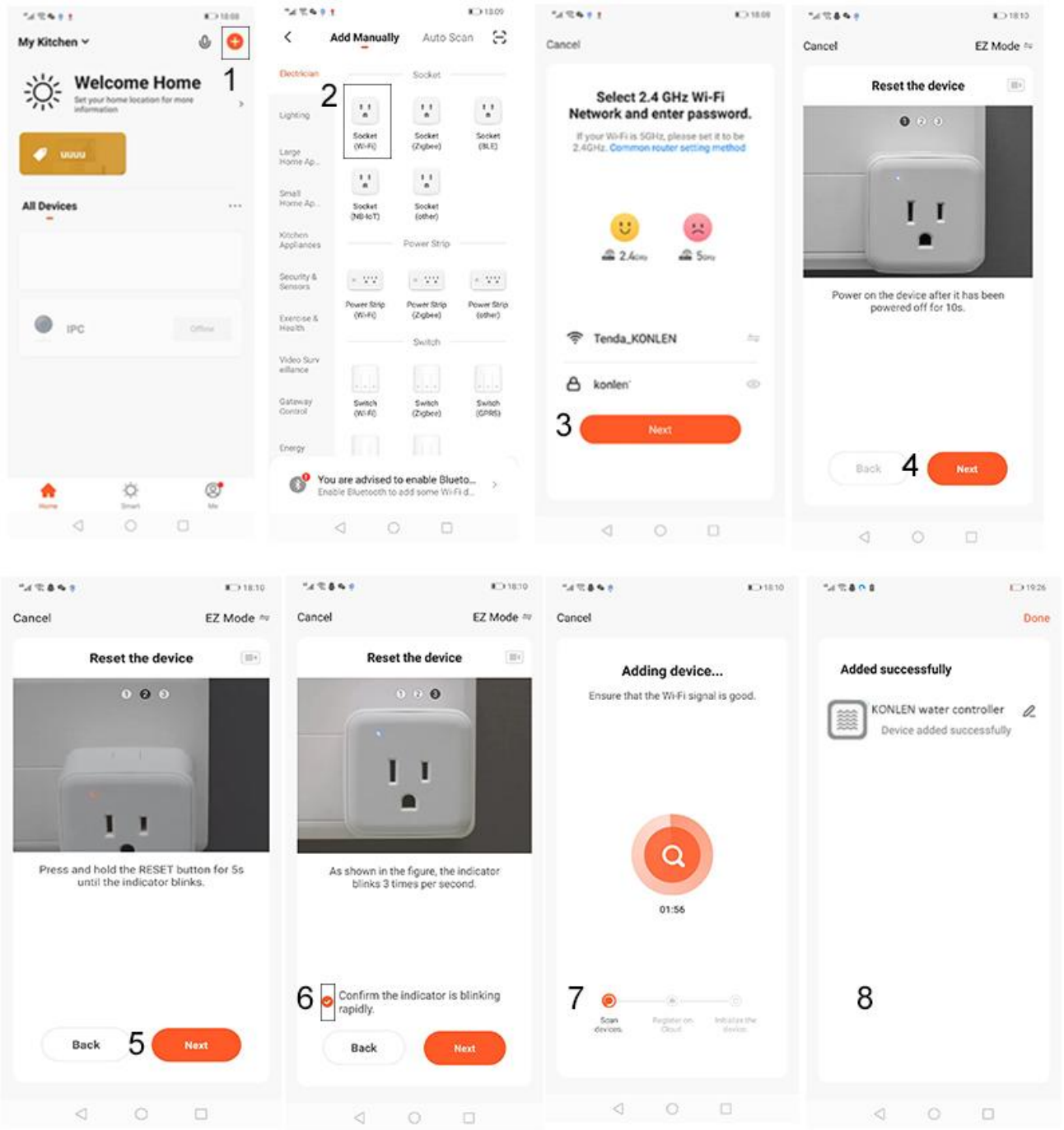
6.1 Install App

a. Download Tuya Smart App from google play for android or App store for IOS phone.
b. Install Tuya Smart App c. Register a new account by e-mail

6.2 App add device

a. Connect power, wait for a moment. Please start to configure WIFI when you see the OUT 1 indicator flashing quickly.
Note: If you can't see the OUT 1 indicator flashing quickly, the reason is: factory help test the device before shipment, but forget to reset it sometimes, please reset the device like this: Press and hold the WIFI configuration button first（don't lease it), then connect with 220V power supply. Don't release the button until see the Out 1 and Out 2 are flashing at same time, then you can start to configure the WIFI.

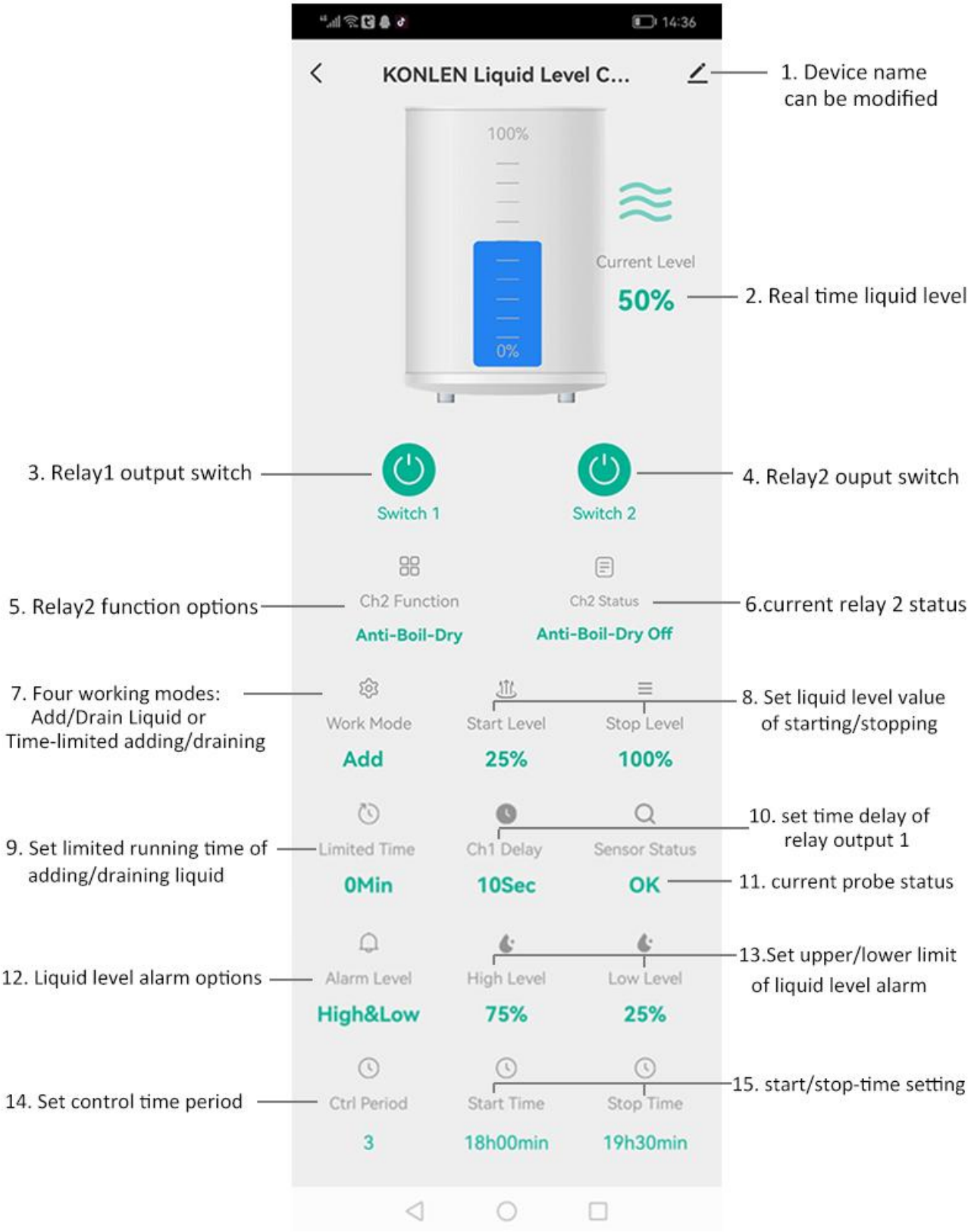
b. Click+ ---- choose socket WIFI ---- choose your 2.4G WIFI ---- enter correct wifi password --- Next ---- Next---- Next----- tick the option (confirm the indicator rapidly blink) ----Next-----adding device---add successfully.



6.3 How to delete device and reconfigure WIFI

Open App, find the device you want to delete. Touch and hold on the device name for 1 to 2 seconds on App, it pops up reminder "Remove Device", choose and confirm the delete, then you can see that the device disappears from the app. At same time Relay OUT1 indicator flashing, then you can reconfigure WIFI by following steps above.

6.4 APP Instruction



1. Device Name: Can be modified
2. Display real time Liquidlevel.
Five Liquidlevels: 0%, 25%, 50%, 75%, 100%

3. On/Off Switch of Relay 1: It is only effective when the current Liquidlevel is between the preset start and stop- Liquidlevel value.
4. Relay 2 output switch
5. Function options of relay output 2: Anti-Boil-Dry, Alarm output, Manual Control, Standby Output.

6. Display current relay 2 status: including status of Anti-Boil Dry enable/disable, alarm output on/off, manual control on/off, Standby output on/off

The instruction of point 7, 8, 9, 10, 11, 12, 13, 14, 15 as below are about relay 1 function setting.
7. Choose working mode: Add water, Drain water, limited-time add water, limited-time drain water.
8. Set Liquidlevel value of auto starting/stopping. For example: if you want equipment auto-starts to drain Liquidwhen the Liquidlevel reaches to 100%, but auto-stop it when the level lower than 25%. You can set drain mode, level on 100%, level off 25%.
9. Set limited running time of adding/ draining water
10. Set delay time of relay 1 starting.
11. Display the Liquidprobes or fuel float ball probes status
12. Liquidlevel alarm options: disable alarm, only high level alarm, only low level alarm, both high level and low level alarm.
13. Set upper and Lower limit value of Liquidlevel alarm
14. Set control time period, max 10 time periods settable.
15. Set starting/stopping time of running.

6.5 Four control modes:

Control Mode 1: Add water
App Setting:
1. Work mode: add
2. Set start Liquidlevel and stop Liquidlevel

Liquidlevel < start up level, relay output 1 connects, start to add water; Liquidlevel ≥ preset" stop level", relay output 1 disconnect, stop to add water.
For example, Liquidlevel on 25%, Liquidlevel off 100%.
Liquidlevel < 25%, relay output 1 connects, start to add water;
Liquidlevel ≥ 100%, relay output 1 disconnect, stop to add water.

Control Mode 2： Drain water
App Setting:
1. Work mode: drain
2. Set start Liquidlevel and stop Liquidlevel

Liquidlevel ≥ start up level, relay output 1 connects, start to drain water; Liquidlevel < preset " stop level", relay output 1 disconnects, stop to drain water.
For example, Liquidlevel on 100%, Liquidlevel off 25%.
Liquidlevel ≥ 100%, relay ouput 1 connects, start to drain water; Liquidlevel < 25%, relay output 1 disconnects, stop to drain water.

Control Mode 3: Time-limited adding water
App Setting:
1. Work mode: add_limited
2. Set limited running time of adding water
For example, Liquidlevel on 25%, Liquidlevel off 100%
Limited time : 50 minutes.
When Liquidlevel < 25%, relay output 1 connects, start to add water; After running 50 minutes, auto stop to add water.

Control Mode 4: Time-limited drain water
App Setting:
1. Work mode: drain_limited
2. Set limited running time of drain water
For example, Liquidlevel on 75%, Liquidlevel off 25%
Limited time: 30 minutes.
When Liquidlevel ≥ 100%, relay output 1 connects, start to drain water; After running 30 minutes, auto-stop to add water.

6.6 Push alarm notification
For example : Preset alarm lower limit of Liquidlevel is 25%, alarm upper limit is 75% . When Liquidlevel is lower than 25% or higher than 75% , it will push alarm notification to users' smart phone via APP. **If you need the alarm function, please enable the alarm notification.**

6.7 Time-period Control
After set the work mode, start-Liquidlevel and stop-Liquidlevel, users can add time-period control as needed. All the setting will only be activated within the control time period. Usually, users set the peak hours of water/petrol/diesel/fuel oil usages as as the control time period. The function provides users the best solution of water/fuel/energy saving, effectively eliminate the waste of energy.

For example, work mode: add water, start-Liquidlevel 25%, stop-Liquidlevel 100%, The first control time period: 8:00 to10:00 a.m, the second control time period: 16:00 to18:00 p.m. During 8:00 to10:00 a.m and 16:00 to18:00 p.m., it will auto start Liquidpump to add Liquidwhen level is less than 25%, auto stop to add Liquidwhen level reaches to 100%. Outside of the control time period, users can turn on/turn off relay output manually.