The WATER & SOLAR COMPANY
WATER & ENERGY SYSTEMS

RUC
Smart VSD Booster Pump

RUC

SMART VSD BOOSTER PUMP

The Self-priming horizontal multistage centrifugal pump is designed for high efficiency, low noise, and good corrosion resistance. It features an aesthetically pleasing appearance, is lightweight, and has added WiFi control capability.

APPLICATION

The RUC is suitable for transporting low- viscosity, neutral adidic, non-explosive liquids that do not contain solid particles or fibers.

- Clean water pressure supply to homes and buildings
- Small irrigation systems
- Water treatment

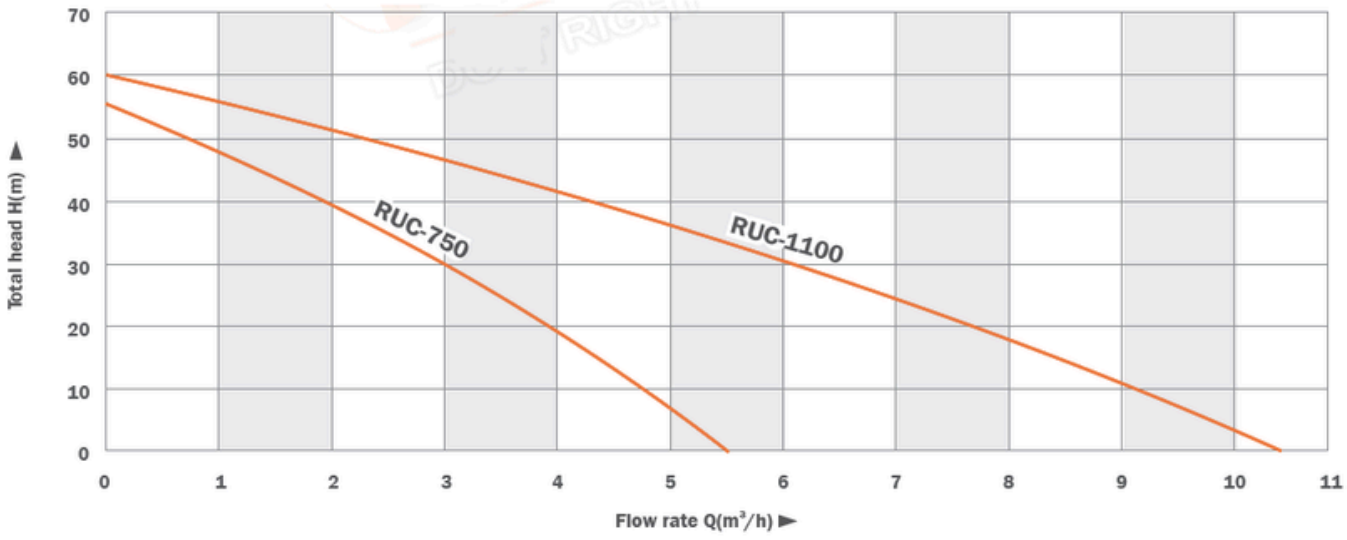
BENEFITS

- Intelligent variable speed motor controller speeds the pump up and down to maintain a constant pressure.
- Pump operating pressure can be increased or decreased by the press of a button.
- The soft-start capability of this pump makes it an ideal pump to be used when running on inverter power, avoiding the high start-up currents associated with traditional pumps and starting methods.
- The integrated flow sensor and pressure monitor combined result in the pump reliably turning off even in situations where traditional controllers have struggled.
- A permanent magnet motor in conjunction with the VSD controller allows for high efficiencies and reduced power consumption.
- Two pumps can be connected in Pump_Link mode to double the flow rates from the pumps. Only one pump will operate in situations where the flow rate is low, and the second pump will step in once the demand increases.
- The mobile app included with the pump allows for remote control and monitoring of the pump. (The pump requires a WiFi connection)
- A thermal sensor on the pump measures the temperature of the water and will protect the pump against overheating.
- IP55 protection
- Stainless Steel 304 Impellers
- PCB Sealed with Potting Compound
- WiFi Function: Control your pump using the Smart Life App

TECHNICAL DATA

MODEL	RUC-750	RUC-1100
Power	750W	1100W
Voltage	220V - 240V 1ph	220V - 240V 1ph
Frequency	50Hz	50Hz
Max Flow Rate	5.5m³/h	10.5m³/h
Max Pressure	55m	60m
Rated Flow Rate	3m³/h	6m³/h
Rated Pressure	30m	31m
Inlet and Outlet Size	1"×1"	1.25"×1.25"
Max Water Temperature	40 °C	40 °C
Maximum Speed	5200r/min	5200r/min
IP Rating	IP55	IP55
Insulation Class	F	F
Cascade Function	Yes	Yes
Smart Life App	Yes	Yes

PERFORMANCE DATA



MODEL	DELIVERY																		
	m³/h	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	10	10.5
RUC-750	HEAD (m)	55	52.5	49.5	46	42	36	30	24	18	12	6	0						
RUC-1100		60	58	56	54	52	50	47.5	45	43	40	38	35	31	26	20	13	6	0

RUC

SMART VSD BOOSTER PUMP

1. Soft start and soft stop
2. Phase loss protection
3. Water shortage protection
4. Overcurrent protection
5. Stall protection
6. Input voltage over/under protection
7. Driver board overheating protection
8. Pipeline Leak Warning
9. Motor temperature sensor warning
10. Water temperature sensor warning
11. Pressure sensor failure warning

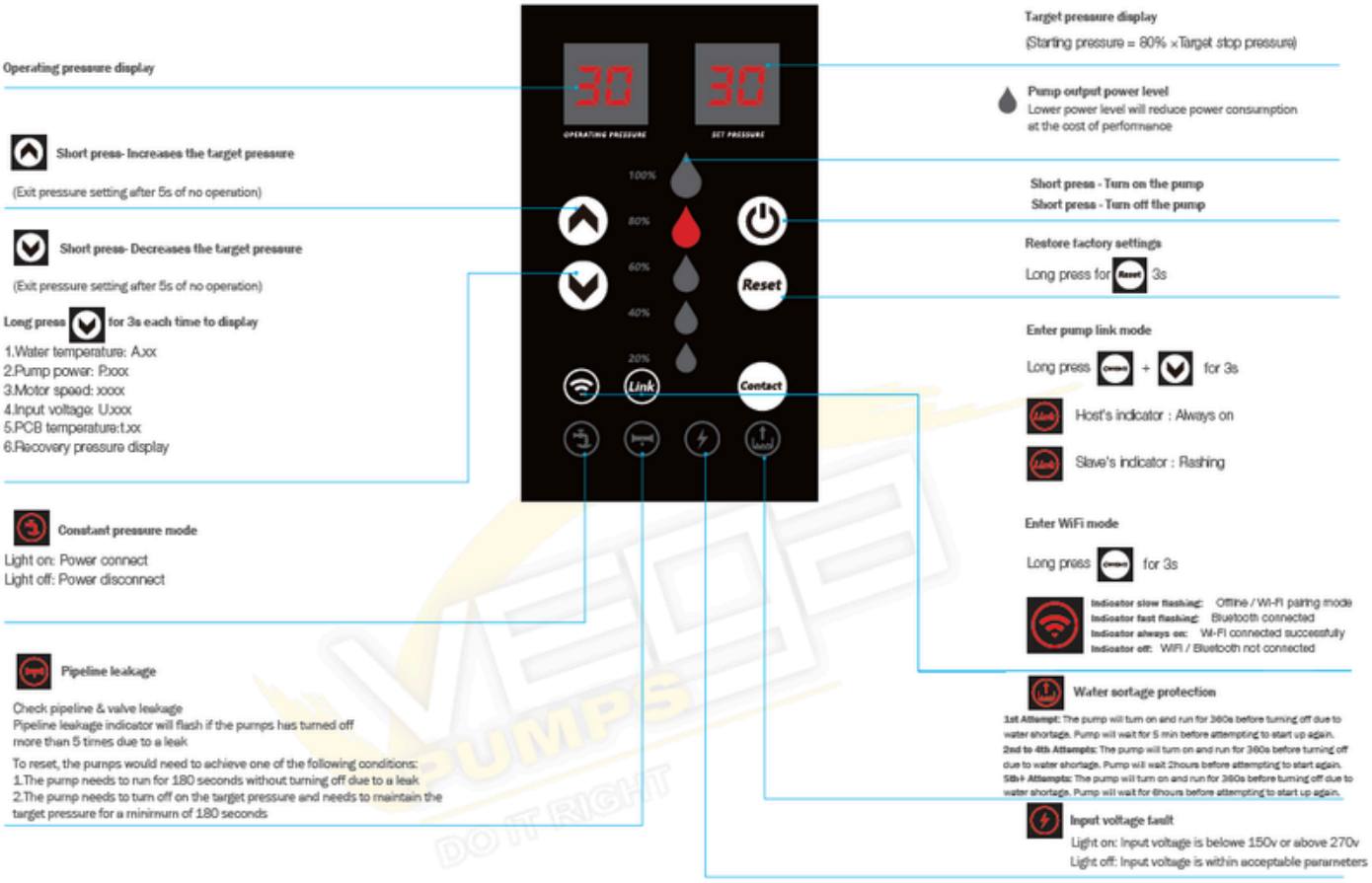
VISUAL PARAMETERS & EASY OPERATION

2 LEDs Display
- Operating pressure
- Set pressure

5 buttons
- UP button
- Down button
- On/Off button
- Reset button
- Contact button (Optional: Pump link mode)

6 indicators
- Constant pressure indicator
- Pipeline leakage indicator
- Input voltage fault indicator
- Water shortage protection indicator
- Pump output power level indicator

CONTROL PANEL OPERATION INSTRUCTIONS
WIFI & PUMP LINK | ALL IN ONE



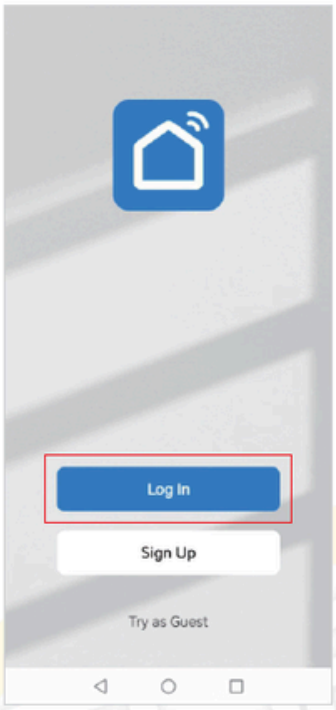
Note: Please note that the 0.37 kW is only available in WiFi mode and not supported in Pump Link mode.

PUMP LINK MODE

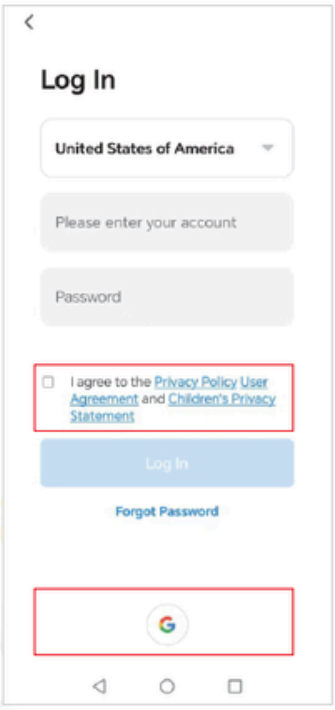
- Combined capacity for higher flow rate
- Intelligent control to match varying demands
- Dual pumps create a backup in case of failure
- Alternating startups reduce wear on the pumps
- Startup of a single, small pump reduces power consumption compared to a larger pump

SINGLE PUMP & WIFI OPERATION INSTRUCTIONS

1. Download SmartLife from Google Play



2. Log In or Sign Up



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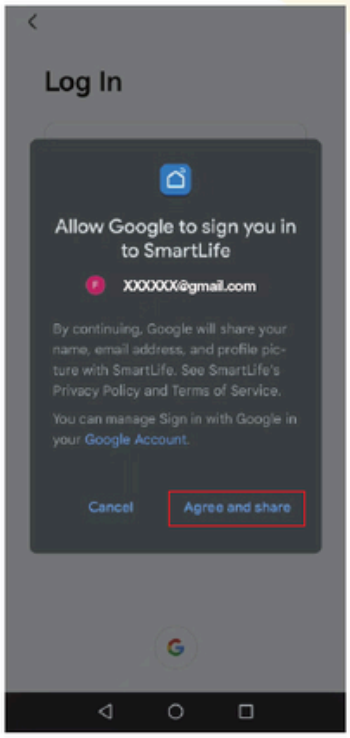
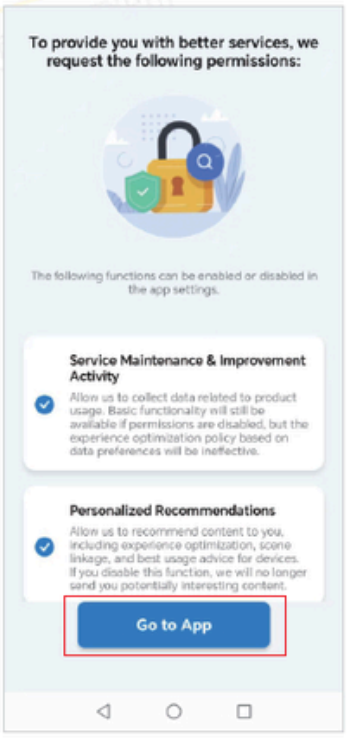
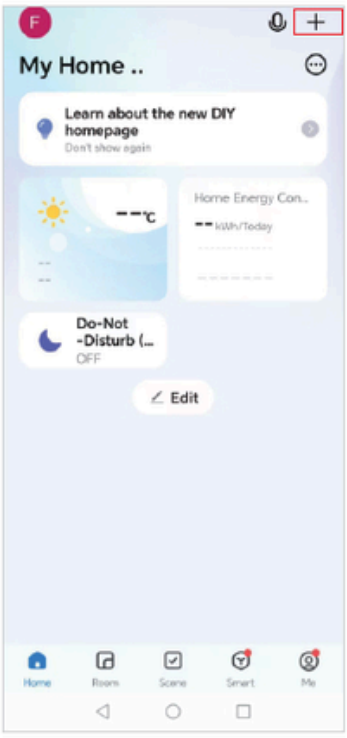


4. Agree and share

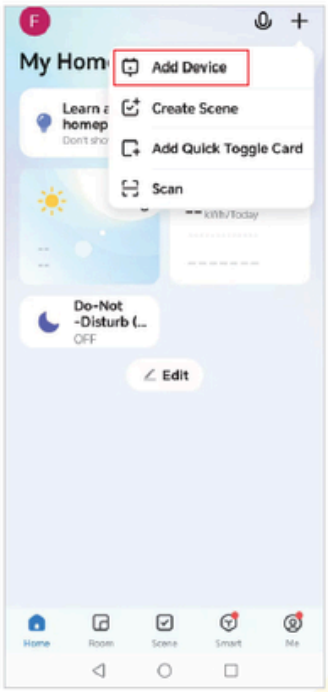


5. Go to App

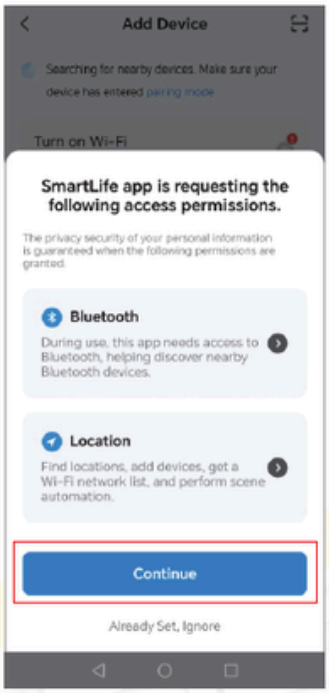


6. Click + to add device

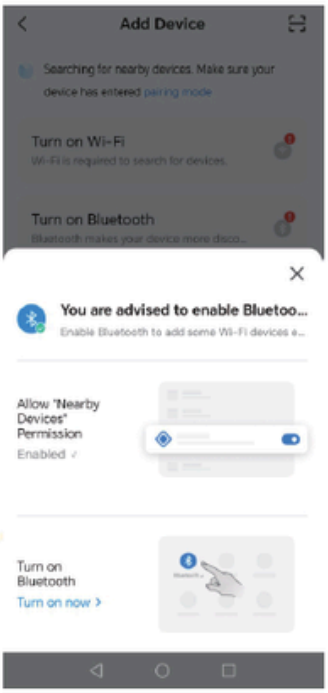
SINGLE PUMP & WIFI OPERATION INSTRUCTIONS



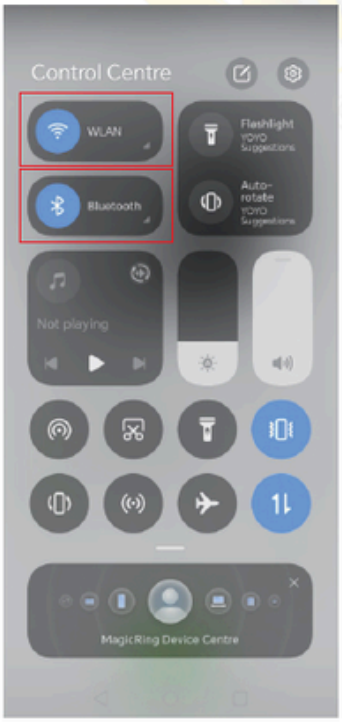
7-1. Add device



7-2. Add device



7-3. Add device



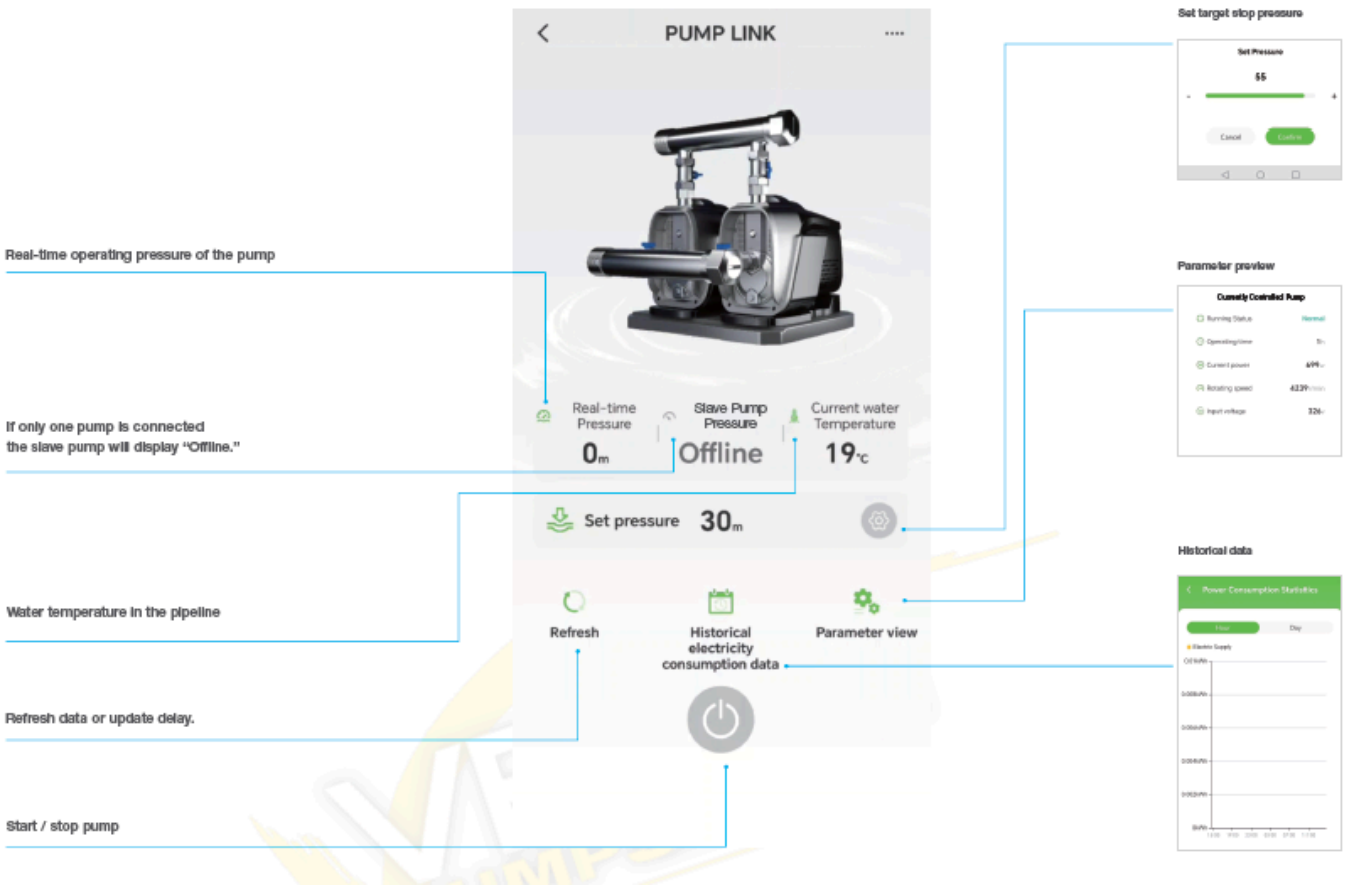
8. Make sure Bluetooth and WLAN are turned on

9.Long press Contact for 3S

10. Add Device

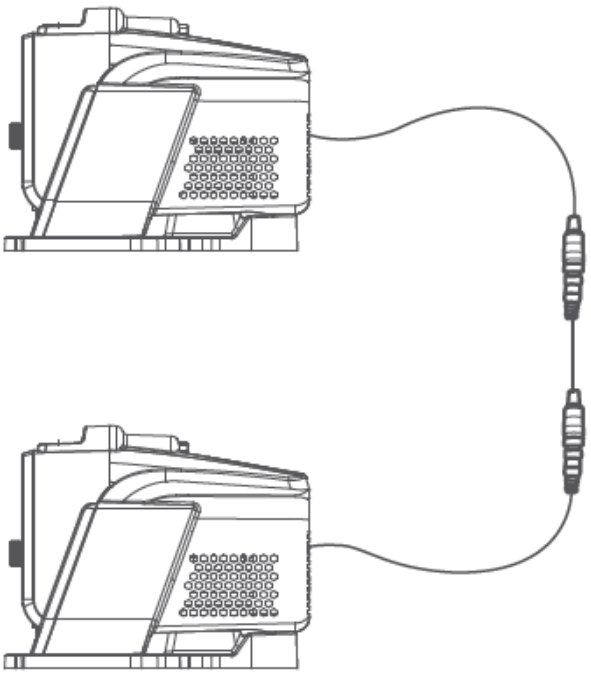
Note:
WIFI & Bluetooth required for first pairing;
Bluetooth only afterward

SINGLE PUMP & WIFI OPERATION INSTRUCTIONS



TWIN PUMP & WIFI OPERATION INSTRUCTIONS

① Connect and secure the data cables of both pumps together.

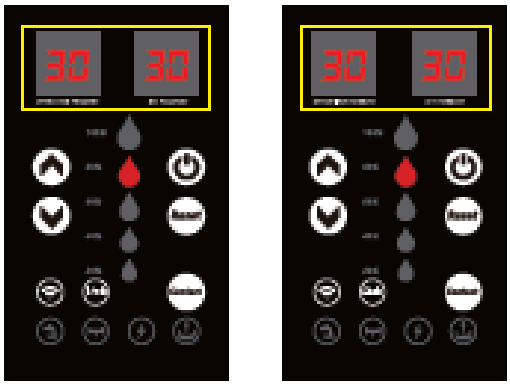


② Pump 1 and pump 2 outlets are connected in parallel.

Pump 1 and pump 2 inlets are connected in parallel.

TWIN PUMP & WIFI OPERATION INSTRUCTIONS

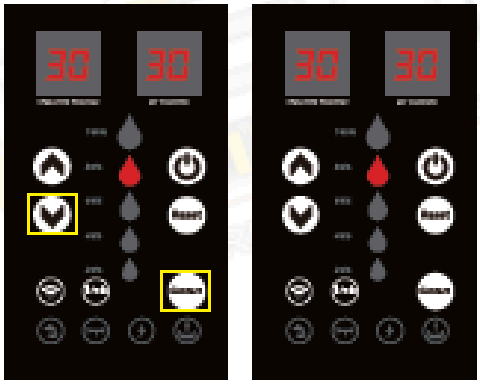
④ Ensure that the starting pressure and target stop pressure of pump 1 and pump 2 are the same



Pump 1 Pump 2

⑤ Select 1 of the 2 pumps as the host (Example:Pump 1 as the host)

Long press & hold the buttons for 3S



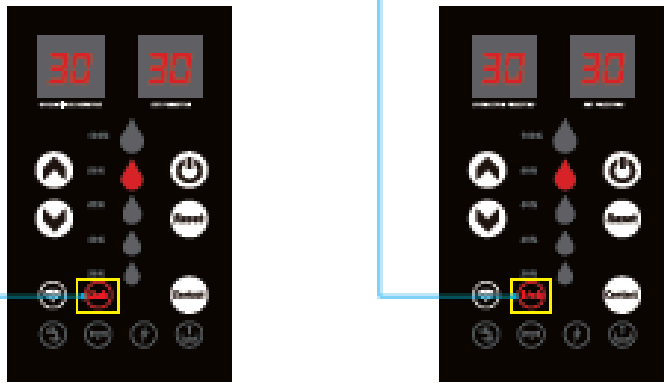
Pump 1 Pump 2

Pump 2 will be the slave

Slave's indicator : Flashing

Pump 1 will be the host

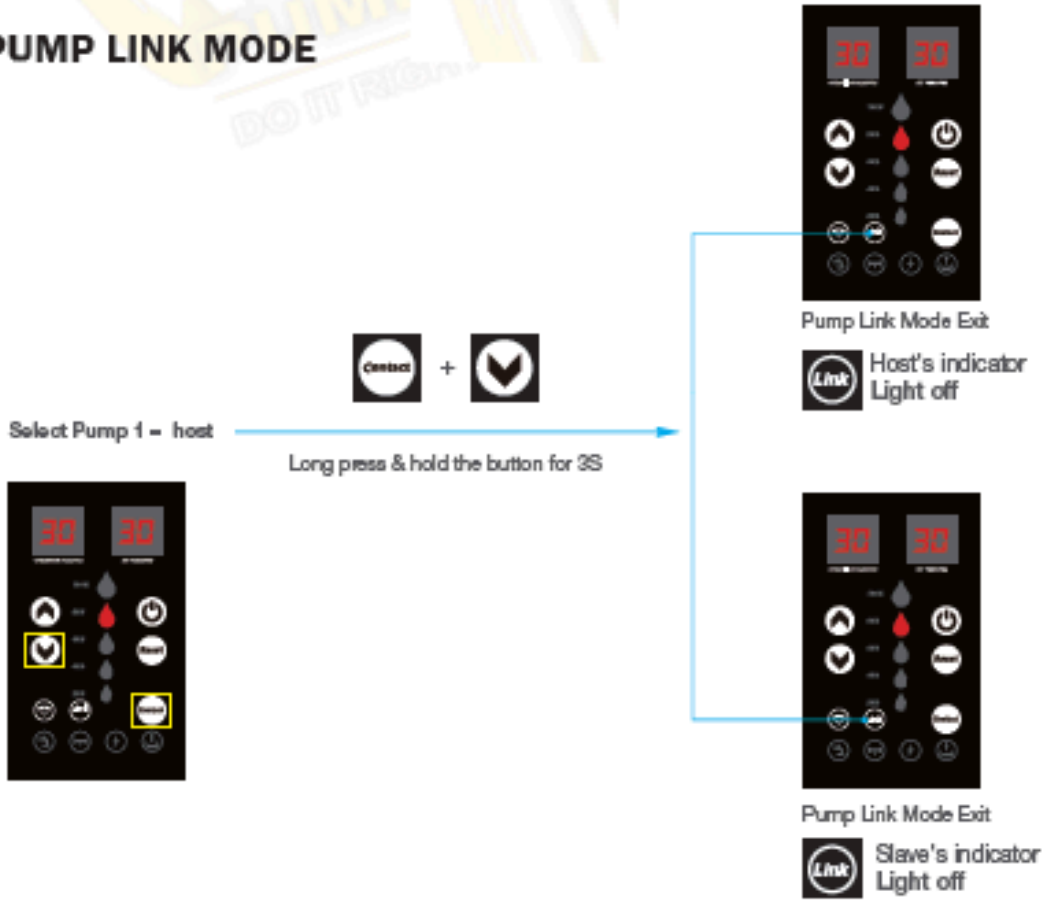
Host's indicator : Always light on



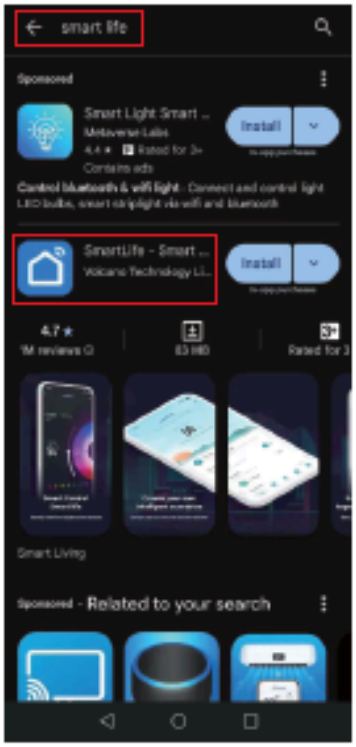
PUMP LINK MODE - OPERATION

Menu Contents	Menu Marker	Default value	Description
Pump link mode Alternating run settings	L1	0	0: Auto - Host and slave pumps alternate. Alternation will take place on startup
			1 -24: Timing - Host and slave pumps alternate. Alternation will take place after a se time.

DISABLING PUMP LINK MODE

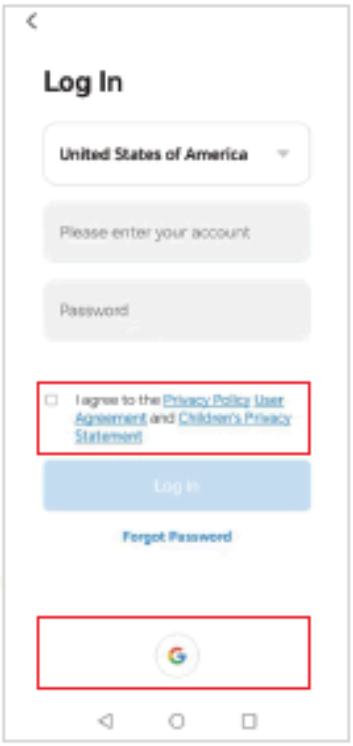


TWIN PUMP & WIFI OPERATION INSTRUCTIONS



1. Download SmartLife from Google Play

2. Log In or Sign Up



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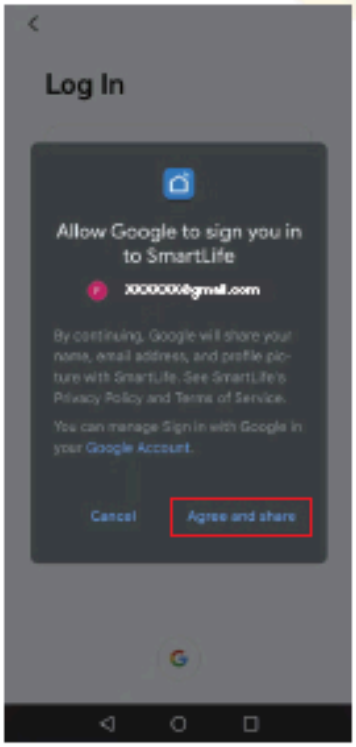
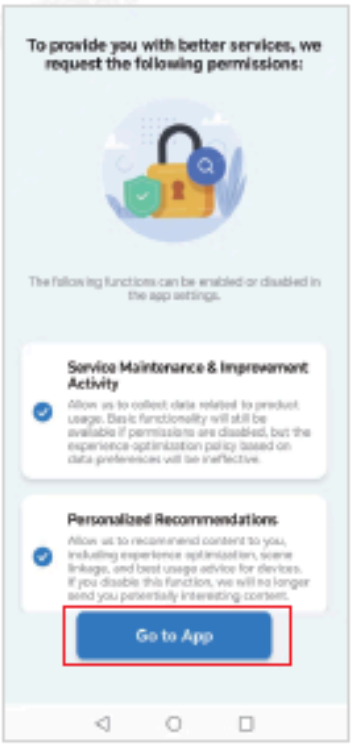


4. Agree and share

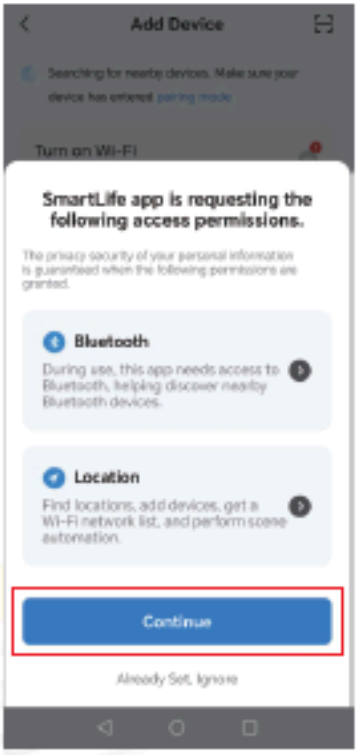


5. Go to App

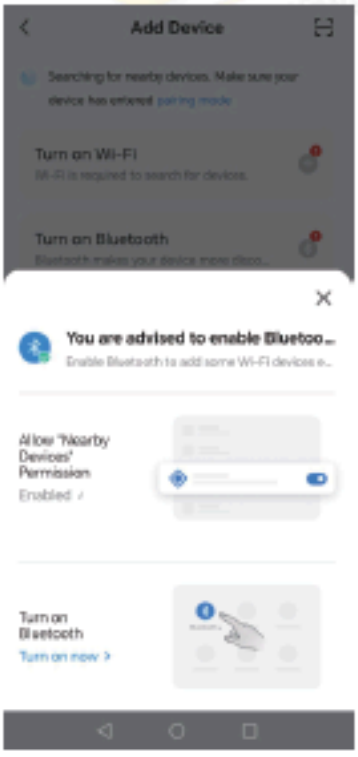
6. Click + to add device

TWIN PUMP & WIFI OPERATION INSTRUCTIONS

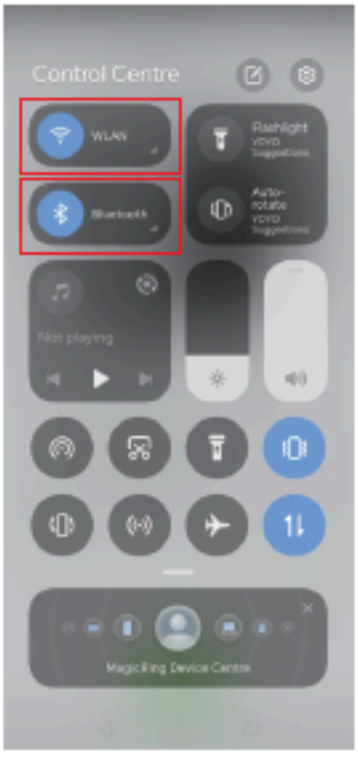
7-1. Add device



7-2. Add device

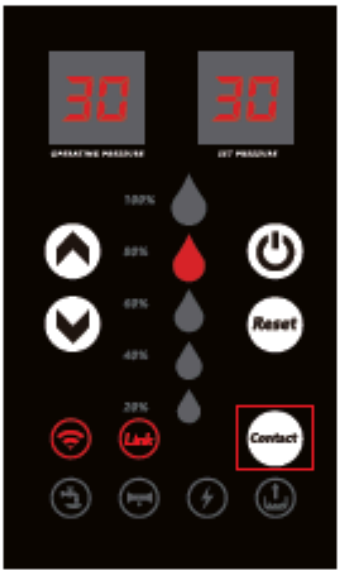


7-3. Add device

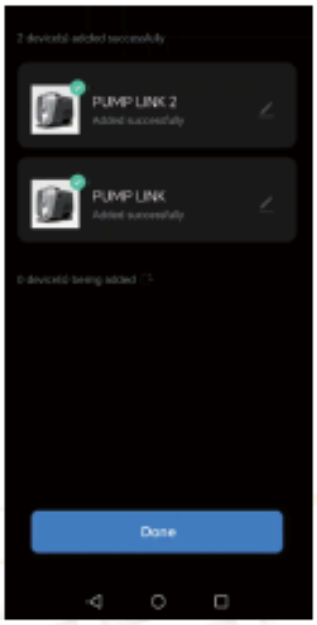


8. Make sure Bluetooth and WLAN are turned on

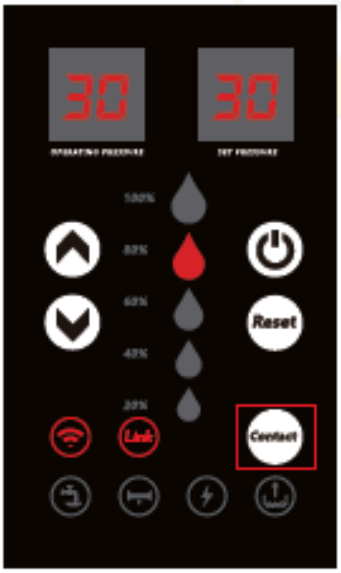
TWIN PUMP & WIFI OPERATION INSTRUCTIONS



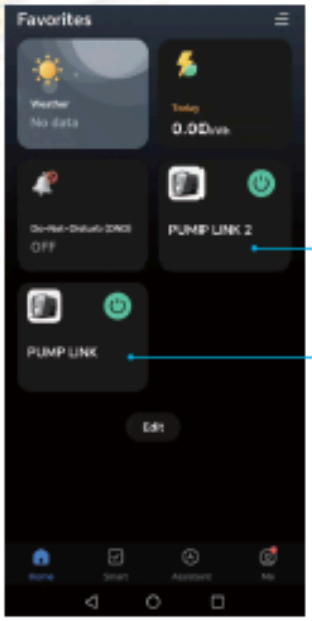
9.Long press Contact for 3S on the host pump



11. Add Device



10. Long press Contact for 3S on the slave pump



Slave Pump
For monitoring slave pump parameters only. Settings cannot be changed on this unit, only on the host unit.

Host Pump
Twin pump control & monitoring

12. Control Interface preview

TWIN PUMP & WIFI OPERATION INSTRUCTIONS - HOST PUMP

COMMON ERROR AND PROCESSING METHODS

Fault Codes	Fault description	Fault resolution
E01	Communication failure between display board and main board	Please check whether the display board is properly connected and try again. If the problem cannot be solved, the display board or main board is faulty.
E02	Stall protection	Check if the motor is stuck. How to recover after the alarm: 1. Automatically try to restart after 5 seconds, try 3 times 2. User presses the power button to restart and recover
	Input voltage fault light is on	Please use a multimeter to check whether it is normal Light on: <150 or >270V(Default) Light off: >160 or< 260V(Restore)
E04	Pressure sensor failure	Please check the pressure sensor interface for poor contact, and re-plug it. If the problem still cannot be solved, replace the pressure sensor.
E05	Motor failure overspeed, underspeed, loss of step	Turn off the power, wait for the panel light to go out, then turn on the power again. If it still cannot be restored, the motor or driver board is damaged. How to restore after the alarm: 1. Automatically try to restart after 3 seconds, try 5 times 2. The user presses the power button to restart and restore
E06	Phase loss	Check if the motor wire is loose or not connected properly. How to recover after the alarm: 1. Automatically try to restart after 60 seconds, try 5 times 2. User presses the power button to restart and recover
E07	Controller overcurrent	Check if the motor is short-circuited or the wrong motor is connected. Driver damage How to recover after the alarm: 1. Automatically try to restart after 60 seconds, try 5 times 2. User presses the power button to restart and recover
	Water shortage protection light is on	There is water in the pump chamber but no water at the inlet or the amount of water at the inlet is too little. How to recover after the alarm: 1. The current pressure drops by more than 3 m or the current pressure rises by more than 3 m 2. Restart after shutdown 3. The user presses the power button to restart and recover

Fault Codes	Fault description	Fault resolution
	Pipeline leakage light is on	A leak in the pipeline was detected, and the water pump started and stopped frequently. How to recover after the alarm: **Alarm conditions - Light on:** Pump starts/stops > 5 times **Reset condition (satisfy any one) - Light off:** 1.Continuous running 180s 2.Stop 180s, pressure not dropping
E12	Driver board overheating fault IPM temperature sensor fault	When driver temp reaches 85°C, pump reduces power (auto adjusts with temp, max 50% reduction) Automatically resume operation after the temperature drops (Default protection: 91°C, recovery: 80°C)

E09	High water temperature protection	Trigger Condition: Water temperature ⩾75°C → Pump stops Exit Condition: Temperature drops by 9°C **Default: 75°C, Restore: 66°C**
	Low water temperature protection (The bottom light of the pump output power level indicator flashes)	Trigger Condition: Water temperature ⩽3°C → Pump runs at low speed. Exit Condition: Temperature rises by 4°C or after 10 mins of continuous operation. Re-Trigger: If temperature remains ⩽3°C, re-enters protection after 5 s **Default: 3°C, Restore: 7°C**

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