

Hydrobooster

PMSM - Intelligent VFD Booster Pump

Applications

- Residential:** Household water supply, pipeline pressurization, garden and greenhouse irrigation
- Agricultural:** Fish farming, poultry facilities
- Commercial:** Mining operations, enterprise water systems, high-rise buildings, HVAC and heating circulation systems

Benifits

- High efficiency PMSM
- Variable frequency & constant Ppressure
- Super silent < 50dB
- Wide range pressure settings 20-95%IP55 protection
- Premium PPO Impeller · 8 m Self-Priming
- PCB Sealed with Potting Compound
- 14 protection function offers satisfied user experience

4 Optional Features

Basic Functions: Constant Pressure · VFD Drive · High Efficiency

Lite Version
No Wi-Fi / Bluetooth / Pump Link.

Pro Version - Pump Link
Dual-pump linking for higher flow, stable pressure, and backup reliability.

Max Version - Wi-Fi + Bluetooth
Remote control and real-time monitoring, anytime.

Ultra Version - Wi-Fi + Bluetooth + Pump Link (All-in-One)
One SKU. Any setup - Wi-Fi for one pump; Wi-Fi & Pump Link for two pumps.



RUC INTELLIGENT VFD
BOOSTER PUMP



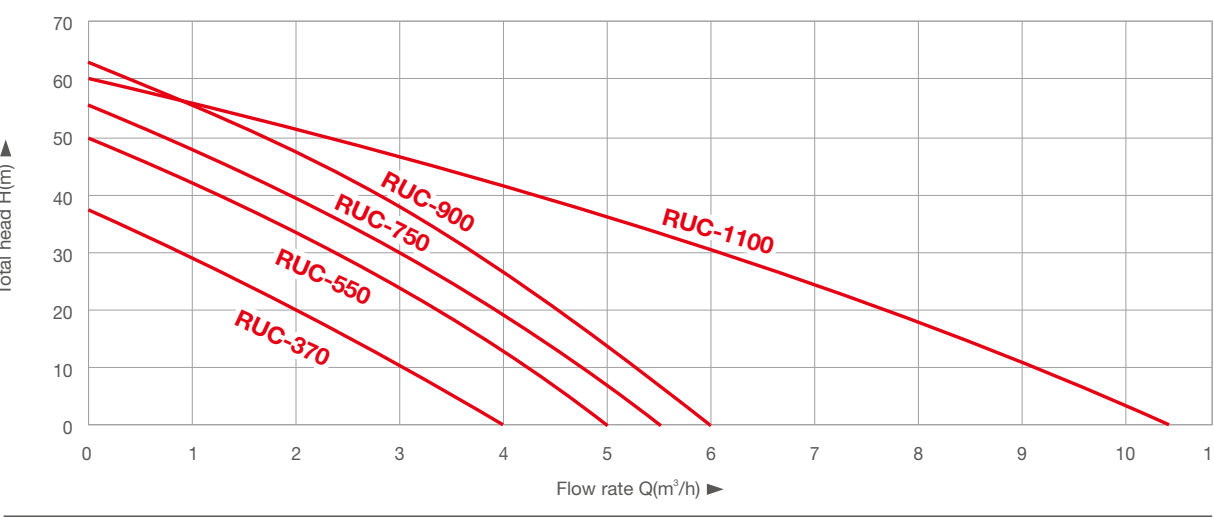
NEW-GEN
VFD BOOSTER PUMP

HydroBooster

TECHNICAL DATA

Model	RUC-370	RUC-550	RUC-750	RUC-900	RUC-1100
Power	370W	550W	750W	900W	1100W
Input Voltage - Option 1	165-260Vac / 1~	165-260Vac / 1~	165-260Vac / 1~	165-260Vac / 1~	165-260Vac / 1~
Input Voltage - Option 2	95-145Vac / 1~	95-145Vac / 1~	95-145Vac / 1~	95-145Vac / 1~	95-145Vac / 1~
Dual Input Voltage - Option 3	Not available	95-145 Vac & 165-260 Vac (Auto-Select)			Not available
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Q.Max	4m3/h	5m3/h	5.5m3/h	6m3/h	10.5m3/h
H.Max	37m	50m	55m	63m	60m
Q.Rated	2m3/h	3m3/h	3m3/h	3m3/h	6m3/h
H.Rated	20m	24m	30m	38m	31m
In/outlet	1" x1"	1" x1"	1" x1"	1" x1"	1.25" x1.25"
H-Suct.Max	8m	8m	8m	8m	8m
T-Water.Max	75 °C	75 °C	75 °C	75 °C	75 °C
Speed.Max	5200r/min	5200r/min	5200r/min	5200r/min	5200r/min
IP Grade	IP55	IP55	IP55	IP55	IP55
Insulation Class	F	F	F	F	F

PERFORMANCE CURVE



Applications

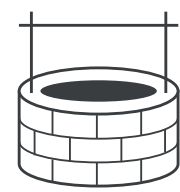


Houses & Small Apartment Buildings

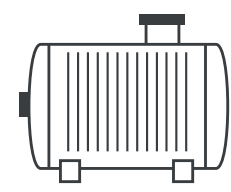


Smart Boosting • Smooth Water Flow

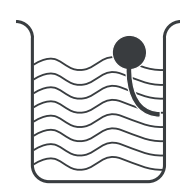
Suitable for pumping water from:



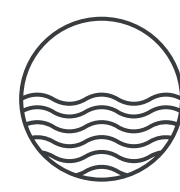
Wells down to 8 m deep



Rainwater collection tanks



Tanks



Municipal water supply
Where permitted by law

Selection Guide

- Floors
- Apartments
- Faucets
- Bathrooms

Single Pump



Twin Pumps - Pump Link



Model	Floors	Apartments	Faucets	Bathrooms	Floors	Apartments	Faucets	Bathrooms
RUC-370	—	—	5	2	—	—	9	4
RUC-550	3	2	5	2	3	4	9	4
RUC-750	4	4	7	3	4	8	13	6
RUC-900	6	4	8	4	6	9	15	7
RUC-1100	7	4	13	6	7	8	25	12

Notes (Indicative):
Floors/Apts duty point: $H(m)=3\times Floors+35$. Apts factor: 1 apt≈0.30 m³/h.
Faucets @set: 2/3 bar; 0.50 m³/h/outlet (≈8.3 L/min/outlet).
Baths: floor(Faucets/2) (1 bath = 2 outlets).
For correct sizing, refer to the performance curve/selection guide.



Premium 1.5L Pressure Tank

- Eco-friendly butyl rubber
- 70% less pump cycling
- Prevents water hammer
- 1.5L, 10 bar max, 1.8 bar pre-charged
- 3.5mm membrane, <1% monthly leakage
- 200,000+ air cycles, 300,000+ water cycles
- Easy maintenance—refill without disassembly



HydroBooster

Temperature Sensor

- Precision: $\pm 1\%$
- Range: -50°C to $+125^{\circ}\text{C}$
- NTC thermistor technology
- Response time: 2-3 seconds

Pressure Sensor

- Supply: 4.75-5.25 VDC, 15 mA max
- Pressure range: 0-1000 KPaG,
- proof: 2000 KPaG, burst: 3000 KPaG
- Temperature ranges:
- Operating: -30°C - 120°C
- Water media: 5°C - 100°C
- Air media: -20°C - 100°C



Temperature Sensor

- Dual Check Valve System -
Enhanced reliability in both inlet and outlet
- External Thread Union Inlet -
Easy maintenance and damage prevention
- Vacuum Heat-Treated Pump Body -
Stress elimination for increased strength





Semi-transparent PC flip cover design

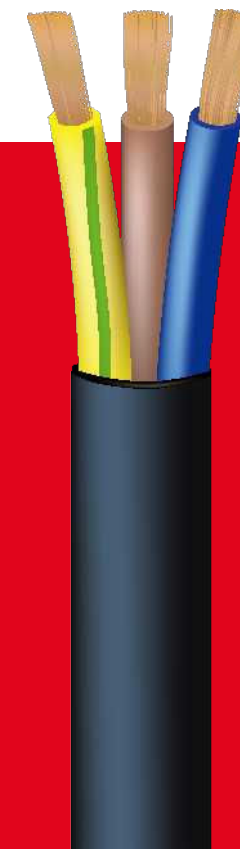
- Waterproof to prevent moisture damage
- Dustproof to protect internal components
- UV-resistant to prevent screen yellowing
- Clear visibility while fully protected
- Extends display life in harsh conditions



HydroBooster

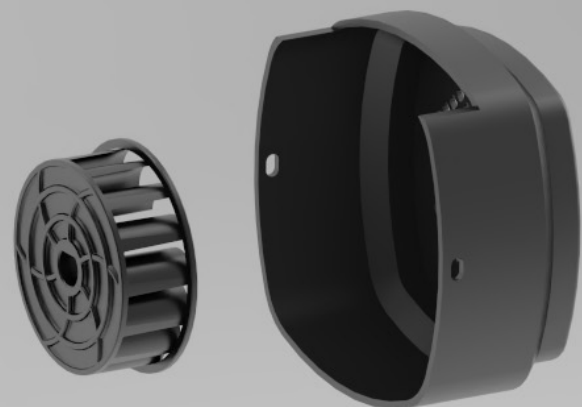
Advanced Housing Design

- Split housing/controller for easy maintenance
- Reinforced airflow for better cooling
- 5mm increased creepage distance
- Improved insulation against electrical corrosion



Superior Heat Dissipation & Durability

- High-impact ABS
- 15% better airflow
- -4dB quieter than standard models
- 87% heat dissipation efficiency
- 5+ years outdoor UV resistance



Pro-Grade Copper Cable

- Pure Copper Construction
- 40% Better Heat Management
- UV & Corrosion Resistant
- IP69K Protection

Advanced self-priming liquid system

- Heat-resistant PPO material
- Optional stainless steel construction
- Quiet lightweight plastic impeller
- 8m+ self-priming with 3-stage design



Advanced Ferrite magnet

- Heat resistance: 150°C without demagnetization
- Optional EMC+PFC configuration
- Noise level: $\leq 50\text{dB}$



High-quality mechanical seal

- Fluoroelastomer + Silicon Carbide construction
- 99.8% chemical resistance
- 5000+ hour service life
- Withstands pH 2-13

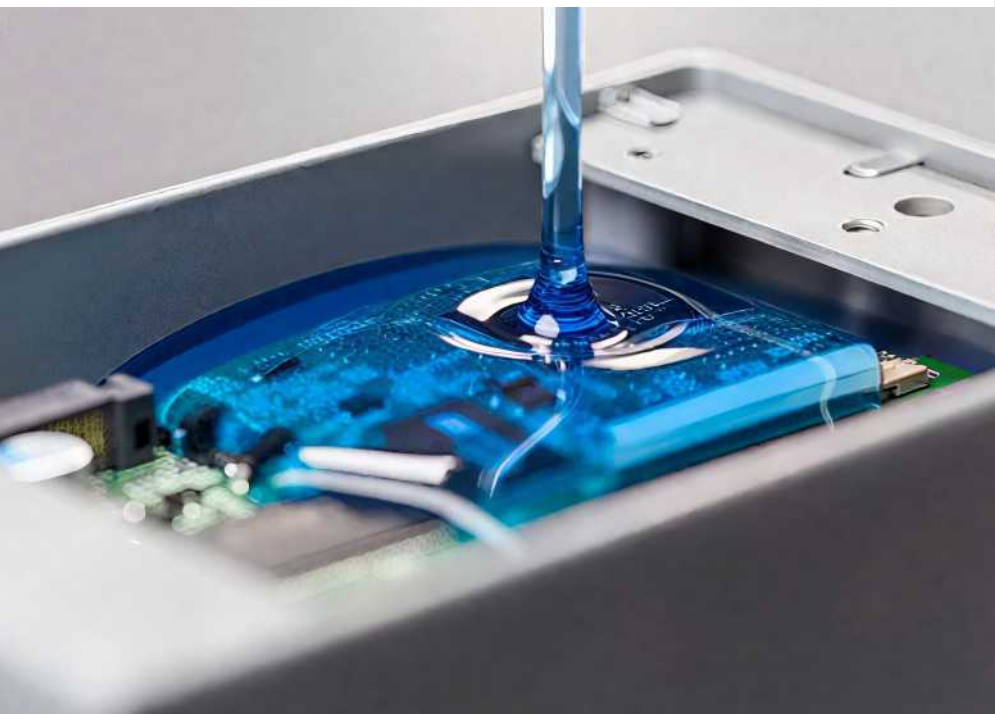


Advanced Stator Design

- 600-Grade Silicon Steel: Higher efficiency
- Temperature Rise $\leq 50\text{K}$: Longer life
- Class F Wire: Reliable operation
- Dual Insulation: Enhanced safety

NSK Advanced Bearings

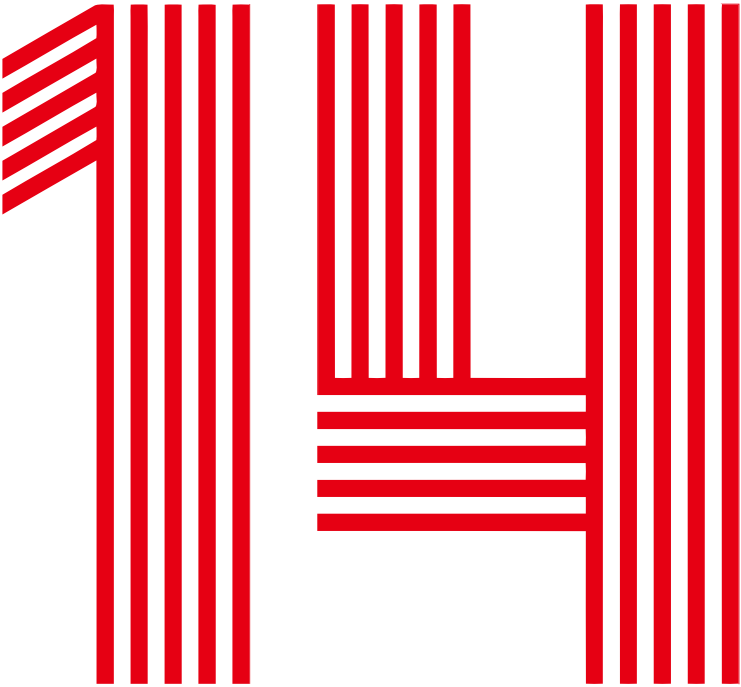
- 16% Higher Precision
- 40% Quieter Operation
- 11% Longer Lifespan
- 10M+ Global Installations



UltraShield PCB Potting

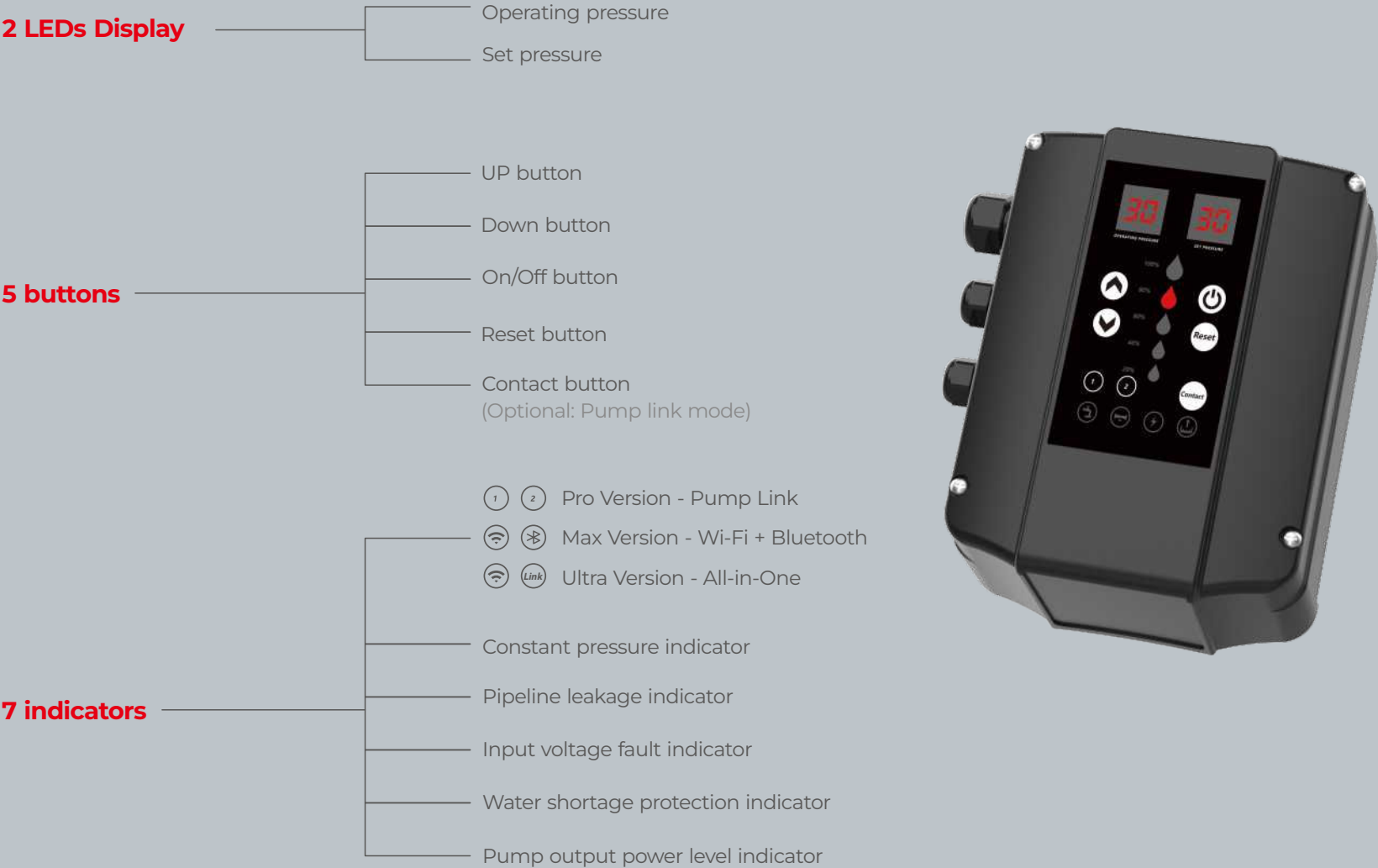
- 100% waterproof seal
- Prevents 95% of moisture-related failures
- IP67 protection rating
- Extends lifespan by 3-5 years

14-Shield | Solar VFD Pump Controller



- ① Soft start and soft stop
- ② Antifreeze protection
- ③ Phase loss protection
- ④ Water shortage protection
- ⑤ Overcurrent protection
- ⑥ Stall protection
- ⑦ Input voltage over/under protection
- ⑧ Driver board overheating protection
- ⑨ High water temperature protection
- ⑩ Short-time overheating protection
- ⑪ Pipeline Leak Warning
- ⑫ IPM temperature sensor warning
- ⑬ Water temperature sensor warning
- ⑭ Pressure sensor failure warning

Visual Parameters & Easy Operation



Lite Version

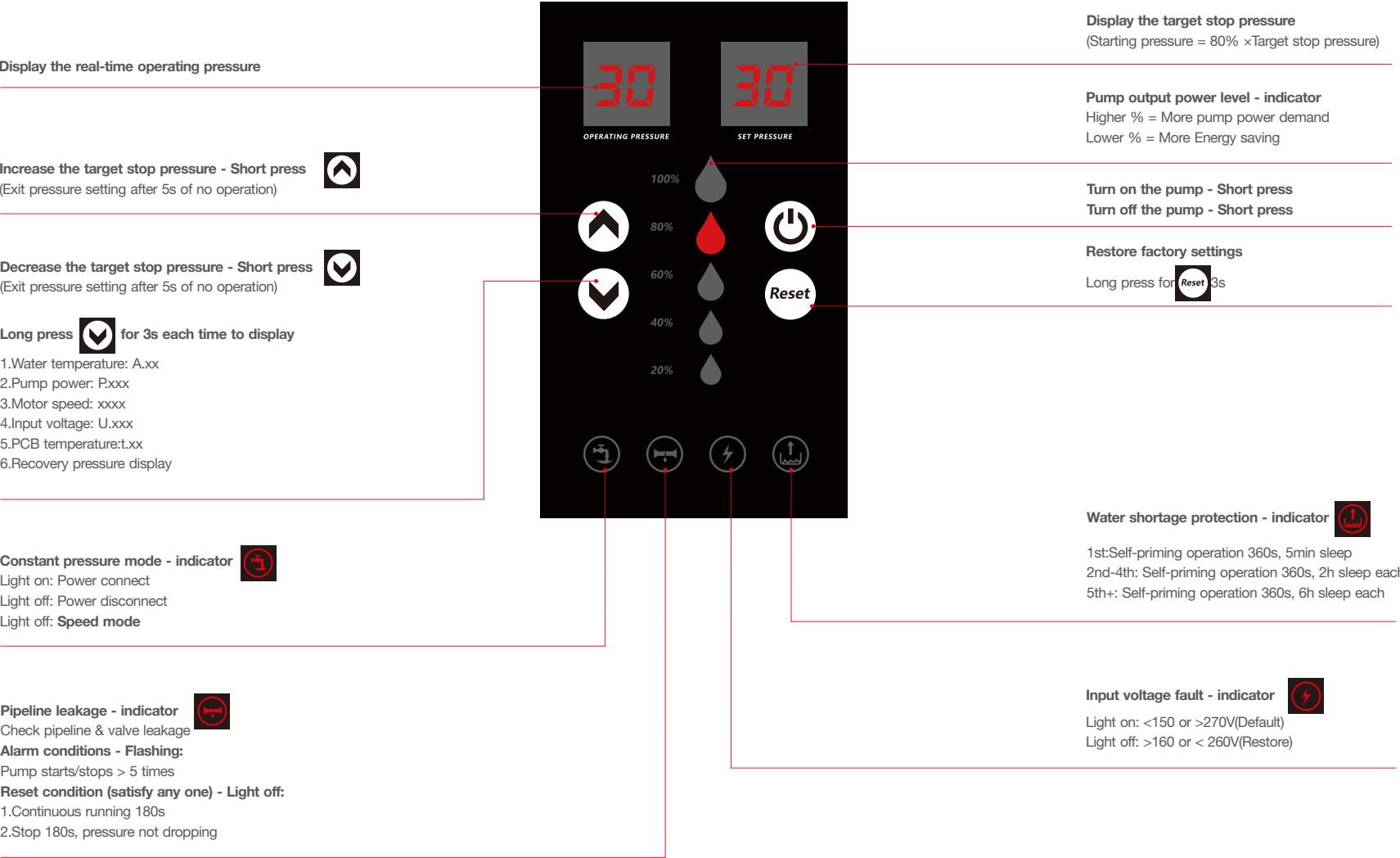
No Wi-Fi / Bluetooth / Pump Link.

- High efficiency PMSM
- Variable frequency & constant Pressure
- Super silent < 50dB
- Wide range pressure settings 20-95%
- IP55 protection
- Premium AISI304 impeller
- PCB Sealed with Potting Compound
- 14 protection function offers satisfied user experience



Lite Version

Control Panel Operation Instructions



Pro Version - Pump Link

Dual-pump linking for higher flow, stable pressure, and backup reliability.

- Higher Flow: Combined capacity
- Smart Control: Demand-based operation
- Reliability: Instant backup system
- Longer Life: Reduced wear
- Efficiency: Optimized energy use



Pro Version - Pump Link

Control Panel Operation Instructions



Display the real-time operating pressure

Increase the target stop pressure - Short press
(Exit pressure setting after 5s of no operation)

Decrease the target stop pressure - Short press
(Exit pressure setting after 5s of no operation)

Long press for 3s each time to display

1.Water temperature: A.xx
2.Pump power: P:xxx
3.Motor speed: xxxx
4.Input voltage: U.xxx
5.PCB temperature:t.xx
6.Recovery pressure display

Constant pressure mode - indicator

Pipeline leakage - indicator

Alarm conditions - Flashing:
Pump starts/stops > 5 times
Reset condition (satisfy any one) - Light off:
1.Continuous running 180s
2.Stop 180s, pressure not dropping

Display the target stop pressure
(Starting pressure = 75% xTarget stop pressure)

Pump output power level - indicator
Higher % = More pump power demand
Lower % = More Energy saving

Turn on the pump - Short press
Turn off the pump - Short press

Restore factory settings
Long press for 3s

Enter or exit the pump link mode(Optional)
Long press for 3s
Light on: or
 indicator = Host
 indicator = Slave

Water shortage protection - indicator

1st:Self-priming operation 360s, 5min sleep
2nd-4th: Self-priming operation 360s, 2h sleep each
5th+: Self-priming operation 360s, 6h sleep each

Input voltage fault - indicator

Light on: <150 or >270V(Default)
Light off: >160 or < 260V(Restore)

Pump Link Mode - Operating steps

	1. Short press start button on both pumps	Host pump 	6. Host locks at maximum power
	2. Open tap		7. Close tap
Host pump 	3. Host pump starts first and constant pressure working	Slave pump 	8. The slave pump determines whether to shut down first
	4. If the operating pressure < the target stop pressure The pressure gap >2m The host at full speed(Power)	Host pump 	9. After the slave stops, the host pump resumes constant pressure working
Slave pump 	5. The slave pump activates and constant pressure working	Host pump 	10. If the water outlet is closed, the host pump stops

Pump link mode - Alternating run settings



Menu Contents	Menu Marker	Default value	Description
Pump link mode Alternating run settings	L1	0	0:Auto -Alternating run mode After the host starts running, when the system reaches a constant pressure, the pump stops automatically and is started by the slave unit the next time it runs. and they run alternately in sequence.



Max Version - Wi-Fi + Bluetooth

Remote control and real-time monitoring, anytime.

- Remote Control: Soft Start/stop anytime
- Set Pressure: Adjust in seconds
- Live Monitoring: Real-time reading
- Smart Alerts: Instant fault push
- Energy History: Consumption stats
- Quick Setup: Pair & set in seconds
- Water Temp: Live temperature



Max Version - Wi-Fi + Bluetooth

Control Panel Operation Instructions

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Display the real-time operating pressure

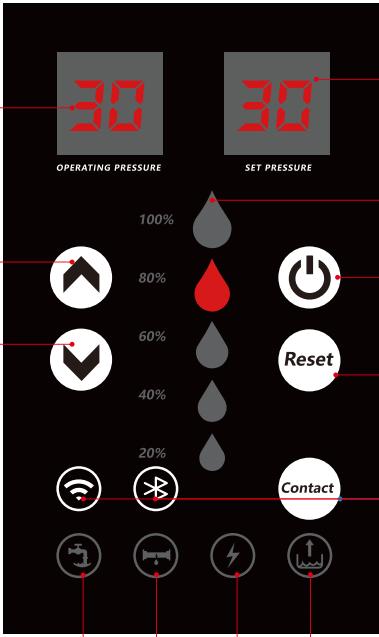
Increase the target stop pressure - Short press
(Exit pressure setting after 5s of no operation)

Decrease the target stop pressure - Short press
(Exit pressure setting after 5s of no operation)

Long press  for 3s each time to display
1.Water temperature: A.xx
2.Pump power: P:xxx
3.Motor speed: xxxx
4.Input voltage: U.xxx
5.PCB temperature:t.xx
6.Recovery pressure display

Constant pressure mode - indicator 
Light on: Power connect
Light off: Power disconnect
Light off: **Speed mode**

Pipeline leakage - indicator 
Check pipeline & valve leakage
Alarm conditions - Flashing:
Pump starts/stops > 5 times
Reset condition (satisfy any one) - Light off:
1.Continuous running 180s
2.Stop 180s, pressure not dropping



Display the target stop pressure
(Starting pressure = 75% xTarget stop pressure)

Pump output power level - indicator
Higher % = More pump power demand
Lower % = More Energy saving

Turn on the pump - Short press
Turn off the pump - Short press

Restore factory settings
Long press for  3s

Enter the Wifi mode(Optional)
Long press  for 3s

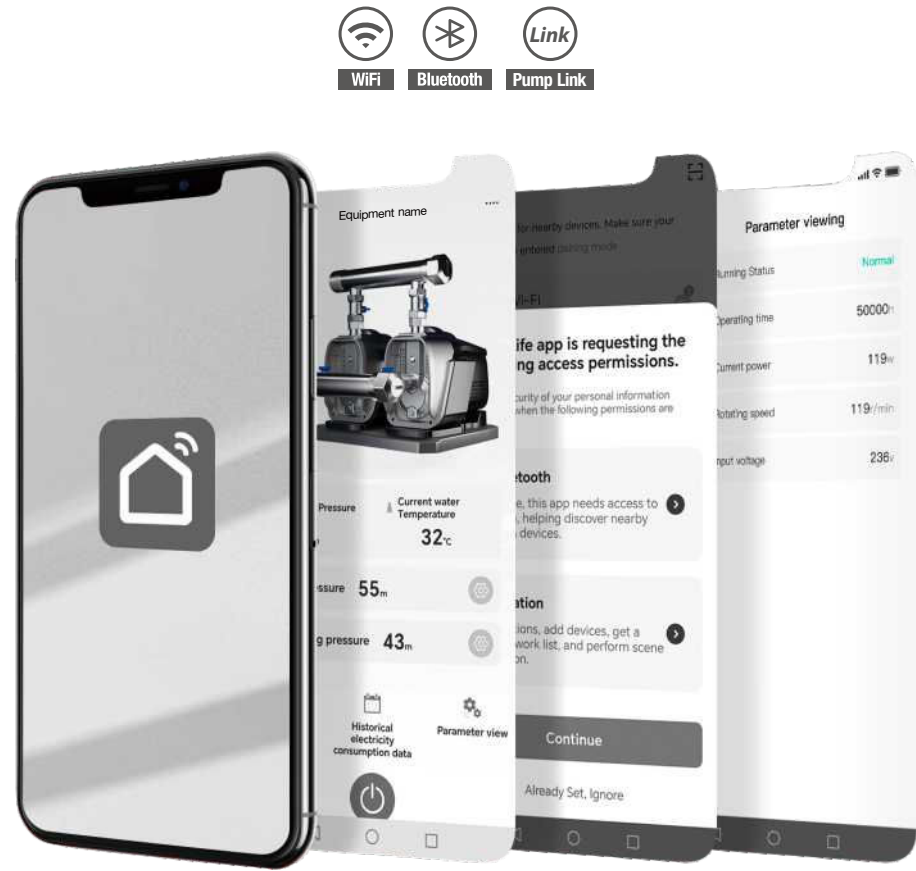
Water shortage protection - indicator 
1st:Self-priming operation 360s, 5min sleep
2nd-4th: Self-priming operation 360s, 2h sleep each
5th+: Self-priming operation 360s, 6h sleep each

Input voltage fault - indicator 
Light on: <150 or >270V(Default)
Light off: >160 or < 260V(Restore)

Ultra Version - Wi-Fi + Bluetooth + Pump Link (All-in-One)

One SKU. Any setup - Wi-Fi for one pump; Wi-Fi & Pump Link for two pumps.

- One SKU.Any setup: Single / Twin Pump
- Pump Link: Higher Flow, Auto Balance
- Instant Backup: Non-stop Water
- Remote Control: Start/Stop Anytime
- Live Monitoring: Pressure / Flow / Power
- Smart Alerts: Fault Push Instantly
- Energy Stats: History & Savings



Ultra Version - Wi-Fi + Bluetooth + Pump Link (All-in-One)

HydroBooster

Control Panel Operation Instructions

Displays the real-time operating pressure

Increases the target stop pressure - Short press
(Exits pressure setting after 5s of no operation)

Decreases the target stop pressure - Short press
(Exits pressure setting after 5s of no operation)

Long press for 3s each time to display

- 1.Water temperature: A.xx
- 2.Pump power: P:xxx
- 3.Motor speed: xxxx
- 4.Input voltage: U:xxx
- 5.PCB temperature:t:xx
- 6.Recovery pressure display

Constant pressure mode - indicator

Pipeline leakage - indicator

Alarm conditions - Flashing:

Reset condition (satisfy any one) - Light off:

Displays the target stop pressure
(Starting pressure = 80% ×Target stop pressure)

Power level - indicator
Higher % = More pump power demand
Lower % = More Energy saving

Turn on the pump - Short press
Turn off the pump - Short press

Restore factory settings
Long press for 3s

Enter Pump Link Mode
Long press + for 3s

Host's indicator : Always on

Slave's indicator : Flashing

Enter WiFi Mode
Long press for 3s

Indicator slow flashing: Offline / Wi-Fi pairing mode
Indicator fast flashing: Bluetooth connected
Indicator always on: Wi-Fi connected successfully
Indicator off: WiFi / Bluetooth not connected

Water shortage protection - indicator

1st:Self-priming operation 360s, 5min sleep
2nd-4th: Self-priming operation 360s, 2h sleep each
5th+: Self-priming operation 360s, 6h sleep each

Input voltage fault - indicator

Light on: <150 or >270V(Default)