Emaux
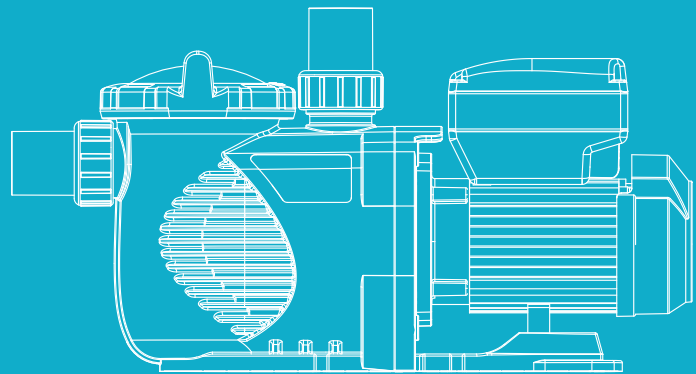
SUPER POWER

VARIABLE SPEED PUMP

With Wi-Fi AND MODBUS OPTIONS

*NSF only apply for NSF version

USER MANUAL

SUPERPOWER

ETL LISTED c US   CE   **RoHS** COMPLIANT 2002/95/EC   SAA   ENERGY RATING 415

Model: SPV Series

TABLE OF
CONTENT

SUPER POWER

VARIABLE SPEED PUMP

WARNINGS AND SAFETY INSTRUCTIONS
GENERAL WARNING

This instruction contain general caution information for use in Pool and SPA pump installation application. Specified Pump model function should be refer to particular manual. Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as means of access to the pool by young children.

RISK OF ELECTRICAL SHOCK

This appliance should be installed by qualified electrical personnel in accordance with National Electrical Code and all applicable local codes and ordinances. Hazardous voltage can shock, burn, and cause death or serious property damage. DO NOT use an extension cord to connect unit to electric supply to reduce the risk of electric shock.

1. The pump should be permanently connected to an individual circuit breaker.
2. Pump must be connected to a residual current device (RCD) having a rated residual operating current not exceeding 30 mA or receptacle with ground fault circuit interrupt (GCFI).
3. Electrical grounding must be connected before connecting to electrical power. Failure to ground all electrical equipment can cause serious or fatal electrical shock hazard.
4. Bonding: Use at least #8 AWG (#6 AWG for Canada) a solid copper conductor, run a continuous wire from external bonding lug (if available) to the pressure wire connector provided on the electrical equipment and to all metal parts of swimming pool, spa, or hot tub, and metal piping (except gas piping), and conduit within 1.5 m (5 ft) of inside walls of swimming pool, spa, or hot tub.
5. Never open the inside of the drive motor enclosure. There is a capacitor bank that holds a mains supply voltage charge even when there is no power to the unit. The voltage should be referred to the individual pump operation voltage.
6. The pump is capable of high flow rates; use caution when installing and programming to limit pumps performance only.
7. Switch OFF pump power before servicing and disconnecting the main circuit to the pump.
8. Never change the filter control valve position while the pump is running.

COMPRESS AIR HAZARDOUS

This system enclosed pre-filter / filter and become pressurized.
Pressurized air can cause the Lid to separate which can result in serious injury or death.
Pool and spa circulation systems operate under high pressure. When any part of the circulating system (i.e. lock ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Filter tank Lid and pre-filter cover must be properly secured to prevent violent separation. Place pre-filter / filter air relief valve in the open position and wait for all pressure in the system to be relieved before remove the lib to access the basket for cleaning.

HYPERTHERMIA

SPA water temperature excess 38°C (104°F) may be injurious to health. Measure water temperature before entering SPA.
Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6 °F (37 °C). The symptoms of hyperthermia include drowsiness, lethargy, and an increase in the internal temperature of the body.

WARNING

SUCTION ENTRAPMENT HAZARD

This pump produces high levels of suction and creates a strong vacuum at the main drain at the bottom of your pool and spa. This suction is so strong that it can trap adults or children under water if they come in close proximity to a pool or spa drain or a loose or broken drain cover or grate.

The Virginia Graeme Baker (VGB) Pool and Spa Safety Act creates new requirements for owners and operators of commercial swimming Pools and spas.

Commercial pools or spas constructed on or after December 19, 2008, shall utilize:

1. A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8a Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs and either:

  1.1 A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 Manufactured Safety Vacuum Release systems (SVRS)

  For Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems and/or ASTM F2387 Standard

  Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming pools, Spas and Hot Tubs or

  1.2 A properly designed and tested suction-limiting vent system or

  1.3 An automatic pump shut-off system.

Commercial pools and spas constructed prior to December 19, 2008, with a single submerged suction outlet shall use a suction outlet cover that meets ASME/ANSI A112.19.8a and either:

1. A SVRS meeting ASME / ANSI A112.19.17 and/or ASTM F2387, or

2. A properly designed and tested suction-limiting vent system, or

3. An automatic pump shut-off system, or

4. Disabled submerged outlets, or

5. Suction outlets shall be reconfigured into return inlets.

There are five types of suction entrapment according to The Virginia Graeme Baker (VGB) Pool and Spa Safety Act

1. **Body Entrapment** a section of the torso becomes entrapped

2. **Limb Entrapment** an arm or leg is caught by or pulled into an open drainpipe

3. **Hair Entrapment** or entanglement hair is pulled into and/or wrapped around the grate of the drain cover

4. **Mechanical Entrapment** the bather's jewelry or clothing gets caught in the drain or the grate

5. **Evisceration** the victim's buttocks come into contact with the pool suction outlet and he or she is disemboweled

TO REDUCE ENTRAPMENT HAZARD RISK

WARNING: Two function suctions outlets per pump must be installed to prevent entrapment. The minimum separate of suction on the same plate must be at least point to point measurement 1 meter (3ft) apart. It is used to avoid "dual blockage" by bather.

If suction is found damage, broken, cracked, missing or not securely attached during regular checking, shunt down the pool and replace it immediately.

A vacuum release or vent system is recommended to install for suction entrapment release.

1. IMPORTANT SAFETY INSTRUCTIONS

The user guide you are holding includes essential information on the safety measures to be implemented for installation and start-up. Therefore, the installer as well as the user must read the instructions before beginning installation and start-up. Keep this manual for future reference.

The pump should be installed according to your local electrical installation ordinances and regulations. Only qualified, licensed personnel should install the pump and the wiring.

This appliance cannot be used by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children must not play with the appliance.

⚠ CAUTION	Correct disposal of this product
Hazardous suction. Can trap hair or body part, causing severe injury or death.Do not block suction.	This symbol on the product, or in its packaging, indicates that this product may not be treated as household waste. Instead, it should be taken to the appropriate waste collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by the inappropriate waste handling of this product. For more detailed information about the recycling of this product, please contact your local council, your household waste disposal service, or the shop where you purchased the product.

2. INSTALLATION

1. Install the pump as close to the pool as possible, preferably in a dry, well ventilated area away from direct sunlight. Protect the pump from excessive moisture.
2. Place the pump as close to the water source as possible, so that the suction pipe is short, straight and direct to reduce the friction loss. Don't install the pump at more than 10ft (3 meters) of geometrical height from water level. Pump priming time for 3m (10ft) should be at least 7 minutes at 2900 RPM.
3. Before installing the pump, make sure that the surface is solid, elevated, rigid and vibration free.
4. Secure the pump to the base with screws or bolts to limit the vibration and the stress on the pipe or the joints.
5. Leave enough space for gate valves in suction and discharge piping, if required.
6. Connect the suction and discharge pipe to the outlet and inlet of the swimming pool.
7. Make sure that floor drainage is adequate to prevent flooding.
8.Make sure that the pump and piping are accessible for servicing.

Note: The pump suction and discharge connections are mounded in thread stops, DO NOT try to screw the pipe beyond these stops.

L=5x1.5" piping outer diameter

Vertical Lift 10ft(3M)

Water Level
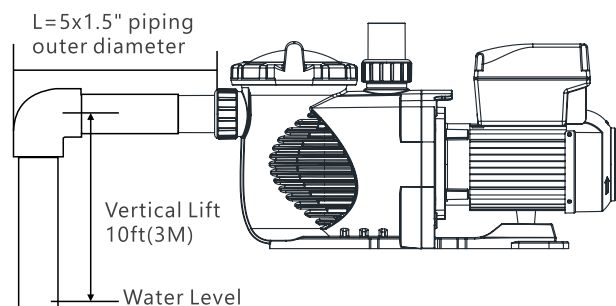
2.1 ELECTRICAL WIRING

For wiring sizes and general guidelines for proper electrical installation, please follow the specifications defined in the National Electric Code and any local codes as required.

We supply versions with standard cable with plug for your local code or without cable. Please contact your local distributor for technical and order inquires.

The pump without cable version, should be installed by qualified electrician, which allows the user to determine which length of cable they prefer:

-Check system voltage matches operating voltage on the rating plate of the pump - Disconnect power to the pump

-Open the top cover of the controller

-Connect power cable Live/ L1 and Neutral/ L2 to terminals (see Figure 1) according to L/ N labelled (Neutral/ L2 to N and Live/ L1 to L).
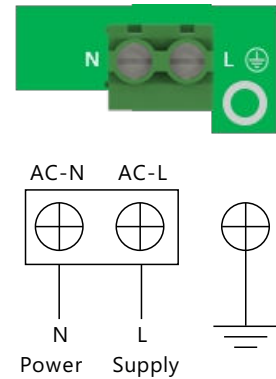
-Connect Earth ground to screw labelled

Figure 1

START UP

- Verify the pump shaft turns freely.
- Check that the mains voltage, current and frequency correspond with the name plate.
- Never let the pump run dry! Running a pump dry may cause damage the mechanical seal causing leakage and flooding.
- Fill the pre-filter with water before starting the motor.
- Before removing the pre-filter lid, STOP PUMP, CLOSE GATE VALVES in suction and discharge pipes.
- Always STOP THE PUMP before when RELEASING ALL PRESSURE from the pump and the piping system.
- Never tighten or loosen screw while the pump is in operating.
- The suction pipe and the suction inlet in the pool must be free from obstruction.

WARNING: Tighten / untighten the pump Lid by hand only

2.2 PRIMING PUMP

1.Switch off the pump

2.Close all valves in suction and discharge pipes.

3.Release air pressure from filter and piping system (from filter air relief valve).

4.Remove the pump lid and fill the pump strainer pot with water.

5.Replacing and tighten the lid (ensure the lid O-ring is properly placed)

6.Open the filter air relief valve, Open all valves and the pump unions are tight.

7.Turn the pump power on. The pump will start priming.

8.When water comes out of the air relief valve on the filter, close the air relief valve. The pump has primed.

Remark: Priming which can take up to fourteen (14) minutes at 10ft (3m) vertical life of 1.5" inlet piping. Priming will depend on vertical length of suction lift and horizontal length of suction pipe. If the pump does not prime within 14 minutes, stop the pump and check for a suction leak. Then, repeat procedure 1-7.

3. CONTROL AND DISPLAY PANEL

3.1 OVERVIEW

The pump can be controlled and programmed from the key panel. Key features are:

1. Clock: Real Time Clock display

2. Running Status: Running speed and power rating display

3. Pre-set Speed: 3 pre-set running speeds.

4. Function settings: Real time clock, 3 pre-set speeds, 2 schedule settings, NO flow self- priming settings.

5. Error display: Overcurrent, Overvoltage, Under-voltage, Overheating fault code.

6. Auto-recovery: After an overcurrent, Overvoltage, Under-voltage, Overheating or Power failure, the settings will be restored as before the error.

7. Power failure recovery: When there is a power is interrupt, the pump will be restored as before when power resume.

8. Wi-Fi: Wi-Fi ready indication after start up.

9. RS485 Connection: external automation control over MODBUS

3.2 CONTROLLER

Title   Value   Operation Light

Increase / Page Down

Decrease / Page Up

Power

Start / Stop

Mode / Setting / Confirm

Pre-set Speed 1 / Select left digit   Pre-set Speed 2 / Select right digit   Pre-set Speed 3 / Cancel

3.3 PROGRAM FLOW CHART

Self-Checking

(AROUND 3 SECONDS)

Monitoring Interface

(Long press "Mode" for 3 seconds)

Setting Interface

The data format will be changed according to the program selected, the relevant data will be flashing.

Edit Interface

(Short press "Mode" : Confirm) (Short press "Speed 3" : Cancel)

(Short press "▲" or "▼" to scroll up/ down the entire chart.)

Short press "▲" to scroll up the chart.

Short press "▼" to scroll up the chart.

(Short press "Mode" to switch)

Speed Display	E.g. "SP:1000" Unit: RPM
Power Consumption	E.g. "P:0" Unit: Watt(W)
Time Display	E.g. "CL:0:00"

(Long press "Mode" for 3 seconds) → Enter Time Setting Interface

Schedule 1 Speed	E.g. "1S:1500" (800 -3400RPM)
Schedule 1 Time On	E.g. "1o:00:00" (00:00 -23:59)
Schedule 1 Time Off	E.g. "1F:10:00" (00:00 -23:59)
Schedule 1 Enable / Disable	E.g. "1E:oFF" (on / oFF)
Schedule 2 Speed	E.g. "2S:2400" (800 -3400RPM)
Schedule 2 Time On	E.g. "2o:00:00" (00:00 -23:59)
Schedule 2 Time Off	E.g. "2F:10:00" (00:00 -23:59)
Schedule 2 Enable / Disable	E.g. "2E:oFF" (on / oFF)
Schedule 3 Speed	E.g. "3S:3400" (800 -3400RPM)
Schedule 3 Time On	E.g. "3o:00:00" (00:00 -23:59) *
Schedule 3 Time Off	E.g. "3F:10:00" (00:00 -23:59)
Schedule 3 Enable / Disable	E.g. "3E:oFF" (on / oFF)
Schedule 4 Speed	E.g. "4S:3400" (800 -3400RPM)
Schedule 4 Time On	E.g. "4o:00:00" (00:00 -23:59)
Schedule 4 Time Off	E.g. "4F:10:00" (00:00 -23:59)
Schedule 4 Enable / Disable	E.g. "4E:oFF" (on / oFF)
Self - Priming Time	E.g. "PL:2" (1 -20 mins)
Self - Priming Speed	E.g. "PS:2900" (2900 -3400RPM)
Self - Priming Enable / Disable	E.g. "PE:on" (on / oFF)
Slave Address	E.g. "EA:2", (range 1 -247)
Baud Rate	E.g. "Eb:9600", (1200/2400/4800/9600bp)
WIFI Enable / Disable	E.g. "FI:on" (on / oFF)
WIFI Reset	E.g. "FI:rESEt"
Freeze Protection Enable / Disable	E.g. "rE:on" (on / oFF) **
Freeze protection Time	E.g. "rL:4" (1 -8hours)
Freeze Protection Temperature	E.g. "rt:4" (1-10° C)
Freeze Protection Speed	E.g. "rS:1800" (900 -3400RPM)
Software Version	E.g. "Su:0202"
SOFTWARE MODIFICATION DATE	E.g. "220418"
Reset	"rESEt"

* Emaux has upgrade to 4 schedule from on Y2023. Version before Y2023 Schedule setting interface contains 3 speed with 2 time schedule.
** Wi-Fi version only

4. OPERATION PROCEDURE

4.1 POWER UP

Self Checking Interference:
Once power up, the will go to Self-Checking Interference. If error is found, the pump will show "Er----". call you installer or dealer to fix the problem.

Monitoring Interface
When Self-Checking Interface is pass, the pump will go to Monitoring Interface. Short Press "MODE" will toggle between Speed Display (SP:1000", indicate in speed RPM 1000), Power Consumption Display ("P :1000", Power consumption 1000W) and Time Display ("CL:12:01", time 12:01).
Speed Display: Showing the Speed in RPM during the pump is on or preset RPM during the pump is off,
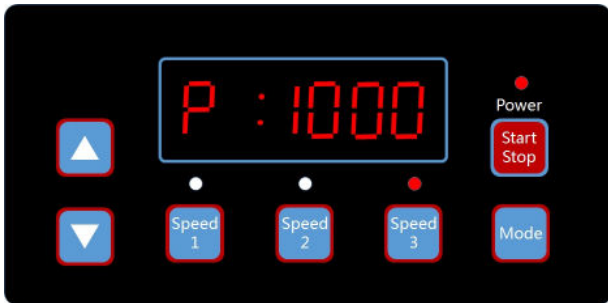Power consumption display: Showing the pump real time power consumption in Watt
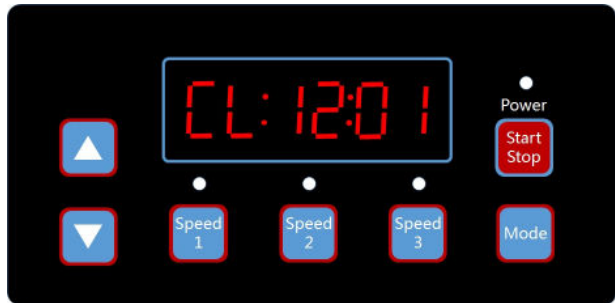Time display: Display the clock.
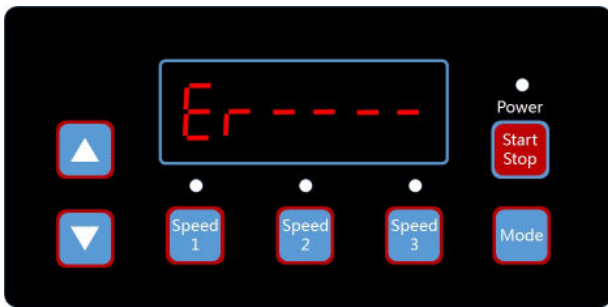
Error is found
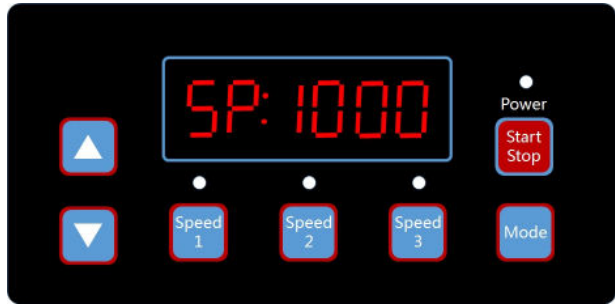
Speed Display (SP:1000", indicate in speed RPM 1000)

Power Consumption Display
("P :1000", Power consumption 1000W)

Time Display ("CL:12:01", time 12:01)

Clock setting
During "Time display", Press and hold key "MODE" for more than 3 seconds, to enter clock setting mode. A digit will blinking. Use "▲", "▼" to change the value and "Speed 1", "Speed 2" to shift the blinking digit left/ right. Press "MODE" to save or "Speed 3" to exit without save.

Speed Setting:
There is two way to change the pump running speed:
1) When the pump under "Speed Display" or "Power consumption display", press "▲", "▼" to adjust the pump speed in RPM
2) Preset Speed 1-3: Press key Speed 1-3, the pump will run at speed which preset in the Speed switch. The corresponded LED will light up. Factory Default setting: Speed 1 1500RPM, Speed 2 2400RPM, Speed 3 3400 RPM.

Setting Interface

When the pump under "Speed Display" or "Power consumption display", Press and hold key "MODE" for more than 3 seconds, to enter Setting Interface. You can choose different function by press "▲", "▼" and enter to the function setting by press "MODE" once. Press and hold key "MODE" for 3 seconds to exit Setting Interface.

To adjust function settings in Setting Interface, keys functions are:
- "▲", "▼" to adjust the digit
- "Speed 1", "Speed 2" to shift the blinking digit left/ right.
- press "MODE" once to save
- press and hold "MODE" for more than 3 seconds to exit Setting Interface
- "Speed 3" to ESC or "Exit with save"

4.2 PRESET key Speed 1-3

3 speed presets are available on the panel (key: Speed 1, Speed 2 and Speed 3). Press to run the pump in preset speed and LED indicated to the speed key will turn on.
Preset speed is in key Speed 1-3 is equilibrant to speed setting in Schedule 1, 2 and 3 respectively. Refer to 4.5 SCHEDULE to change the preset speed setting.

4.3 SCHEDULE (Schedule 1 – 4)

Schedule is a timer and speed program feature for this SPV pump. when the schedule function is set, the pump will start and stop to run according to the setting. There are total three programmable speeds with two programmed timers can be programmed by user:
Parameters:
- Schedule 1:
- Schedule 1 Speed (e.g. 1S:1500): Pump speed when the schedule is running
- Schedule 1 Time On (e.g. 1o:00:00): Scheduled pump turn on time
- Schedule 1 Time Off (e.g. 1F:10:00): Scheduled pump turn off time
- Schedule 1 Enable/ Disable (e,g,1E:off): Enable/ disable schedule 1 function
- Schedule 2:
- Schedule 2 Speed (e.g. 2S:1500): Pump speed when the schedule is running
- Schedule 2 Time On (e.g. 2o:00:00): Scheduled pump turn on time
- Schedule 2 Time Off (e.g. 2F:10:00): Scheduled pump turn off time
- Schedule 2 Enable/ Disable (e,g,2E:off): Enable/ disable schedule 1 function
- Schedule 3:
- Schedule 3 Speed (e.g. 3S:1500): Pump speed when the schedule is running
- Schedule 3 Time On (e.g. 3o:00:00): Scheduled pump turn on time
- Schedule 3 Time Off (e.g. 3F:10:00): Scheduled pump turn off time
- Schedule 3 Enable/ Disable (e,g,3E:off): Enable/ disable schedule 1 function
- Schedule 4:
- Schedule 4 Speed (e.g. 4S:1500): Pump speed when the schedule is running
- Schedule 4 Time On (e.g. 4o:00:00): Scheduled pump turn on time
- Schedule 4 Time Off (e.g. 4F:10:00): Scheduled pump turn off time
- Schedule 4 Enable/ Disable (e,g,4E:off): Enable/ disable schedule 1 function

Remark:

1) Schedule 4 Speed does not have an external switch on key panel.

Schedule Policy

1. Programmed Schedule Priority Schedule 1 > Schedule 2
2. If more than 1 schedule is enables within the same time period, the controller will operate only with the highest priority schedule and speed. The corresponding indication light will turn on.
3. If all schedules are completed according to their pre-set times, the controller will return to the condition before setting the schedule.
4. When one of programmed schedules is running and before schedule end. Any operation such as Start / Stop, speed adjust by "▲" or "▼", Speed 1-3 and any change by external RS485 MODUS. The schedule timer and speed will be resumed when it is start over by pressing the Start / Stop to run again.
5. The scheduled settings and auto-recovery cannot contradict each other. When there is an error, the variable speed driver will restore the settings to those before the error. (The priority setting is still applicable).

5. PRIMING SETTING

Priming is the process to run the pump and generate suction in pump, pipe and filter so to push pool water circulation. Priming function is to run the pump at speed higher so to generate higher suction in system to improve priming process.
During the pump is starting to run which 1) Priming function is enable, and 2) the priming speed is higher than the pump preset speed, the pump will run priming according to the priming feature preset.

Parameters:
- Self-Priming Time (e.g.PL:2): Priming time in minutes
- Self-Priming Speed (e.g. PS:2900): Priming speed
- Self-Priming Enable/ Disable (e.g. PE:on"): Enable/ disable Self '\ function

6. RS485 SETTING

The pump equipped with RS485 communication interface for external automation controller. It is not for domestic user access purpose. It is an always ready to interface for external automation control.

The pin assignment is 1 = A and 2=B. The waterproof connector type is SP1310 4pins. SPV's RS485 is a pure data communication without 5V power supply output.

Contact your dealer for MODBUS programing manual, if you are a system integrator

6.1 RS485
There are two parameters can be change.
Parameters:
Slave Address (e.g. EA:2); The identity address of the pump
Baud rate (.e.g. Eb:9600): data baud Rate for RS485

7. Wi-Fi SETTING (Wi-Fi version only)

SPV has Wi-Fi connection feature that you can connect PC/ mobile with the pump and remote control it.
There are two parameters can be set.

Parameters:
- WIFI Enable/ Disable (e.g. Fl:on): Enable/ Disable WIFI feature
- WIFI Reset (e.g. Fl:rESt): reset WIFI setting which include SSID and password.
- During power up, if Wi-Fi is enabled, "UU1F1" will display on the screen.

8. FREEZE PROTECTION SETTING

Stagnate water in the pipes freezes and expands, which can damage pipes and equipment. Freeze protection function is to turn the pump on automatically and get water moving to reduce freezing risk.

Parameters:
Freeze Enable/ Disable (e.g. rE: oFF): Enable/ Disable Freeze protection feature
Freeze Time (e.g. rL: 4): running time in hours when freeze protection function is trigged.
Freeze Temperature (e.g.rt: 4): surrounding temperature to trigger freeze protection function.
Freeze Speed (e.g. rS: 1800): running speed when freeze protection is trigged.

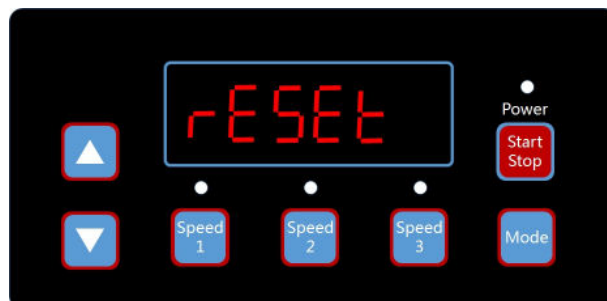# 9. FACTORY RESET

Factory Reset will activate pump reset and parameters for the pump will restore to factory default setting.
To activate factory reset, press "▲", "▼" to "RESET". Press "MODE" once and "RESET" will start to blink. Reset will complete after "RESET" blinking for 3 seconds. Then, press MODE once to exit.


10. AUTO-RECOVERY

Overcurrent protection, Overvoltage protection, Under-voltage protection or Overheating protection can be trigged when the pump is operating under a temporary un-favorer conduction and the pump requires the power to be turned OFF and ON to resume. Auto-recovery feature allows the device to perform power recover without user interaction.
Auto recovery:
When protection is trigged, the pump will stop and the related error code will show on the screen for 5 seconds. Then, the pump will start to countdown and restart once countdown is completed. The pump will repeat the Auto recovery process if unsuccessful Auto recovery is found (protection is trigged within 60 seconds after auto-recovery restart.). If the process has been repeated for three times and protection trigged within 60 seconds, the pump will stay on stop and display Error code on the screen. Press START/STOP key will exit Auto recovery process that display turn to error code and countdown will be terminated.

11. ERROR

When SPV pump detects functional failure, it will stop and display Error code on the control panel. All LEDs on panel will be blinking.
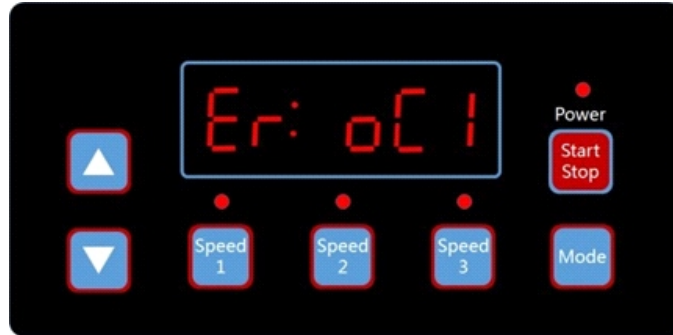
ERRORS DESCRIPTION

11.1 COMMUNICATION ERROR

Communication error ("Er ---") which is related to connection to power source is unstable. When "Er ---" is shown on the screen, check the plug connection. Disconnect the power by unplug to power source and with for at least 60 seconds. Then, reconnect the power source and try again. If the error continues, contact your Emaux technical service.

11.2 OPERATION ERRORS

When the pump is not working, an error code will be shown on the controller display. E.g. "Er: OV". Press the "Start/Stop" button to restore the controller.
The common error codes are the following:

| Error	Description	Reason
OC	Overcurrent: driver current output exceeds the threshold	- Driver output failure - Driver IPM module is damaged
OV	Overvoltage: the main circuit DC voltage exceeds the threshold.	- Exceeded power from the power supply - Power supply voltage exceeds the control settings
UV	Under-voltage: the main electric current is too low.	- Ambient temperature is too high - Supply voltage fluctuation is too large
OH	Overheating: the motor heat sink is overheated.	- Ambient temperature is too high - Motor Cooling Fan does not work

12. WI-FI SETTING

12.1 Wi-Fi Direct CONNECTION

SPV Wi-Fi function is a ONE To ONE control solution without access to Home Network. It is just like a private controller which can be connected and control by mobile phone, tablet PC, laptop top or any Wi-Fi enable devices which has Wi-Fi connectivity with common web browser.

Wi-Fi Direct

1. Refer to Wi-Fi setting and enable Wi-Fi feature.
2. Go to Wi-Fi setting of mobile phone/ PC and connect to Wi-Fi network "EPVSPV_WIFI" and enter password "VS＿＿PUMP" for connection. This is the factory default SSID name and password.
3. Scan the QR code label on the side of the controller unit (or, open any web browser on the device and type IP address 192.168.8.1), User interface screen will for the pump will display.
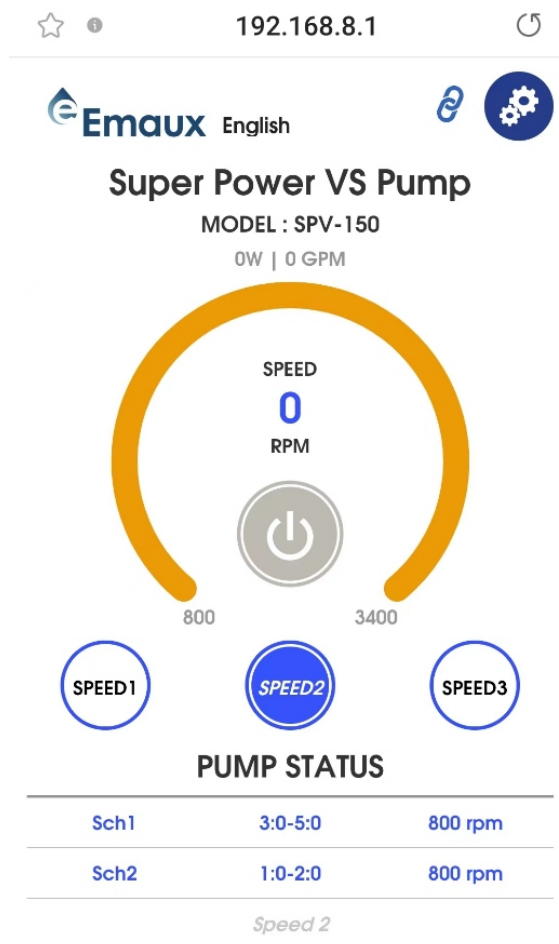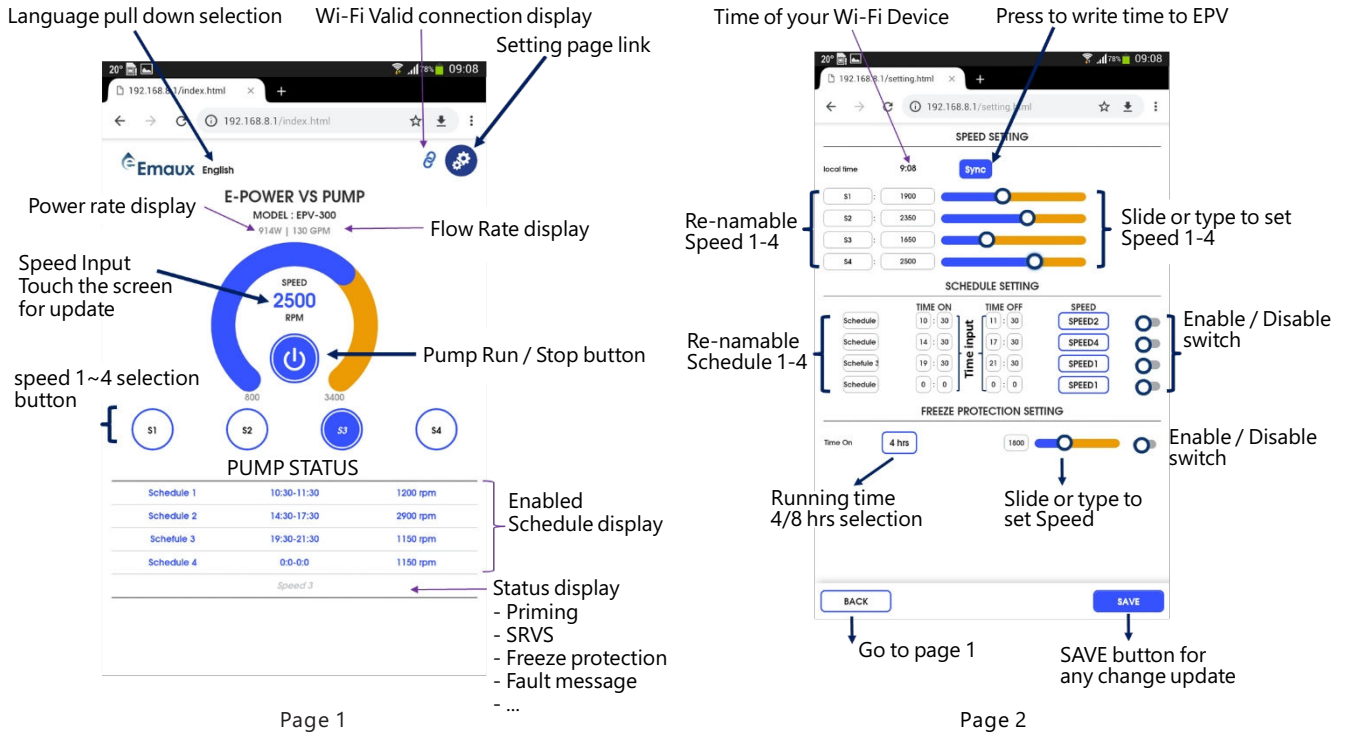

User interface screen

12.2 APPLICATION INTERFACE

The user interface can do all the EPV/ SPV setting and programming as the control panel on the pump, along with status display. It easy and comprehensive to use.

- " Run/Stop" button to switch the pump ON/OFF.
- Input SPEED number directly to control the pump speed.
- SPEED1, 2, 3 to select the preprogram speed.
- Pump running status, schedule status and error code display at the bottom.
- SETTING icon to enter Setting page
- Change language display: English, French, German, Italian, Spanish, Russian and Chinese.

Page 1

Language pull down selection   Wi-Fi Valid connection display
Setting page link
Power rate display   E-POWER VS PUMP   MODEL : EPV-300   914W | 130 GPM   Flow Rate display
Speed Input Touch the screen for update   SPEED 2500 RPM   Pump Run / Stop button
speed 1~4 selection button   S1 S2 S3 S4
PUMP STATUS

Schedule 1	10:30-11:30	1200 rpm
Schedule 2	14:30-17:30	2900 rpm
Schedule 3	19:30-21:30	1150 rpm
Schedule 4	0:0-0:0	1150 rpm
	Speed 3	

Enabled Schedule display
Status display - Priming - SRVS - Freeze protection - Fault message - ...

Page 2

Time of your Wi-Fi Device   Press to write time to EPV
SPEED SETTING
local time 9:08 Sync
Re-namable Speed 1-4   S1 : 1900   S2 : 2350   S3 : 1650   S4 : 2500   Slide or type to set Speed 1-4
SCHEDULE SETTING
Re-namable Schedule 1-4   Schedule / TIME ON / TIME OFF / SPEED   Enable / Disable switch
FREEZE PROTECTION SETTING
Time On 4 hrs   1800   Enable / Disable switch
Running time 4/8 hrs selection   Slide or type to set Speed
BACK   SAVE
Go to page 1   SAVE button for any change update

Setting Page

- "SYNC" to synchronize the pump clock to your Wi-Fi device.
- Rename and Set Speed 1-3. (Speed 1-3 can be renamed, which in less than 10 characters.)
- Set Schedule 1-2. is enable and disable switch at the end of each setting to turn it ON or OFF.
- Freeze protection setup.

Remark:

- When the pump is running, change setting though Wi-Fi is not allowed. Make sure to stop the pump before change any setting.
- Press save to store the change before back to home page.

12.3 CHANGE SSID AND PASSWORD

SSID and Password of the pump can be changed by typing the IP address 192.168.8.1:88 to access the Wi-Fi Network setting page. It is similar to what people do for their home router (Pump version before year 2022, IP address is 192.168.8.1:8 or 192.168.8.1:8088). Try these two IP addresses if you do not know your pump manufacture year). To change the SSID and Password of the by with provide a unique ID and connection to the pump.
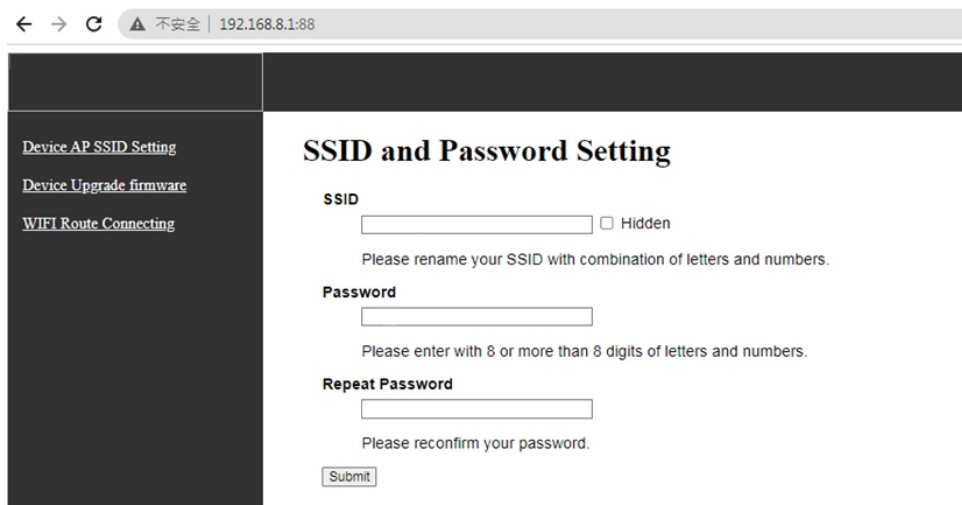
Type new SSID name and password (in both Password and Repeat Password), then press "Submit" to change the new setting.

After change, User have to use the new SSID and password to connect the pump.

SSID and Password can be reset to default by use Wi-Fi reset function (refer to Wi-Fi setting)
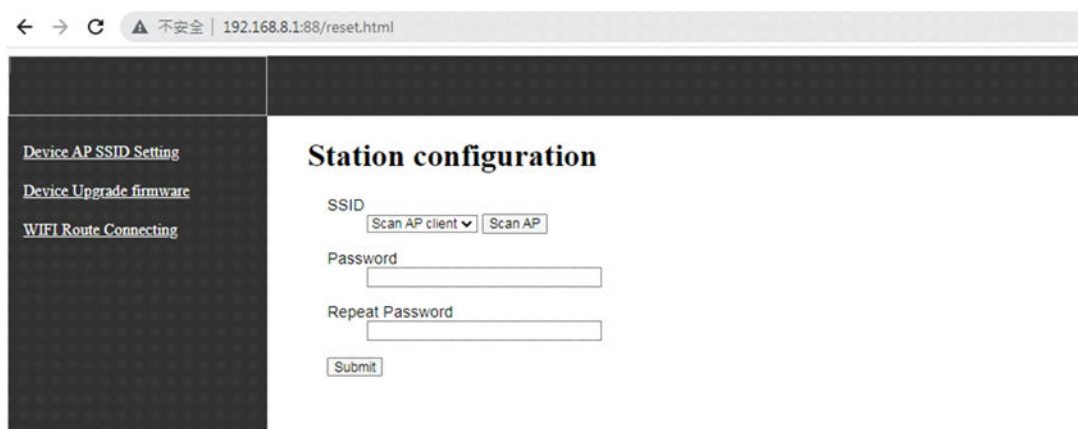
12.4 CONNECT TO HOME NETWORK

(Caution) User has to know how to do "Home Network Router" Setting and it is preferred to do it by desktop or laptop PC. Refer to your router manual if necessary.

Home Network

The SPV variable speed pump Wi-Fi can be set to connect to Home Network to extend the control distance and easy access.

1. Access Emaux-WIFI Type IP address 192.168.8.1:88 (Pump version before year 2022, IP address is 192.168.8.1:8 or 192.168.8.1:8088) to access the web page and select "WiFi Route Connecting".

   Station configuration page will show on the screen:

2. Press "Scan AP" and wait for the pump to search network.

3. Select your home network and input "Password" + "Repeat Password", then press "Submit" to input. The pump will connect to the network automatically.

Remark: the connectivity which is router related, some router in the market may not be connected successfully. Consult you router manufacturer for connection trouble shooting.

4. When the pump is connected to the network, the Connect SSID and Connect IP will display on the screen. Now, your pump has been connected to your home network. Copy the Network IP for your mobile phone/ PC to connect your pump.
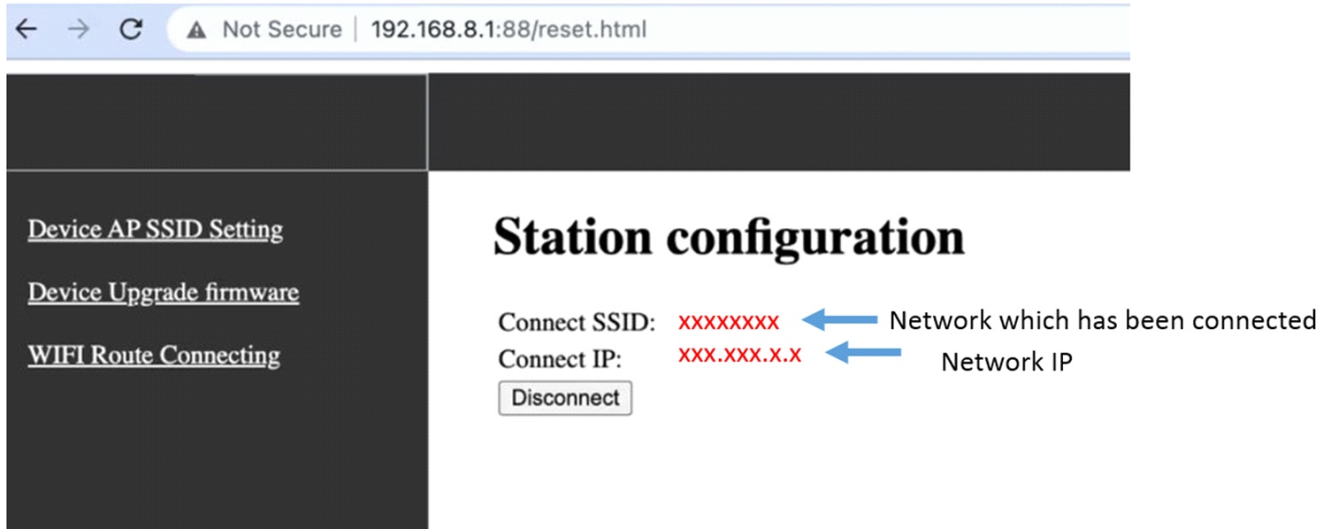
5. Use your mobile phone/ PC and connect to your home Wi-Fi network, open any web browser and input the Network IP which you copied on previous step. Then, you can see the User interface screen again.

13. ROUTINE MAINTENANCE

The only routine maintenance needed is the inspection/cleaning of the trap basket. Debris or trash collected in the basket will choke off the water flow through the pump. Follow the instructions below in order to clean the trap:

1. Stop the pump, close the gate valve in suction and discharge, and release all pressure from the system before proceeding.

2. Unscrew the trap lid (turn counter clockwise).

3. Remove the strainer basket and clean. Make sure all the holes in the basket are clear, flush the basket with water and replace it in the trap with large opening at the pipe connection port (between ribs provided). If the basket is replaced backwards, the cover will not fit on the trap body.

4. Clean and inspect the lid ring; reinstall on the trap cover.

5. Clean the ring groove on the trap body and replace the lid. To help keep the lid from sticking, tighten it by hand only.

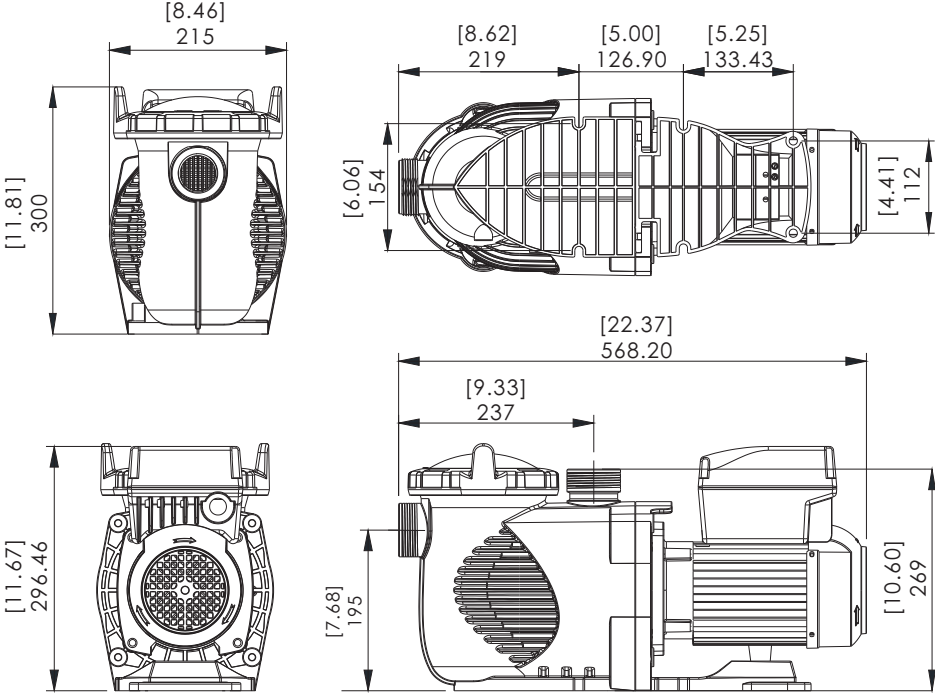6. Prime the pump (see priming instructions above).

14. AFTER-SALES SERVICE

Refer all service needs to your local agent or dealer as his knowledge of your equipment makes him the best qualified source of information. Order all the repair parts through your dealer. Give the following information when ordering repair parts.
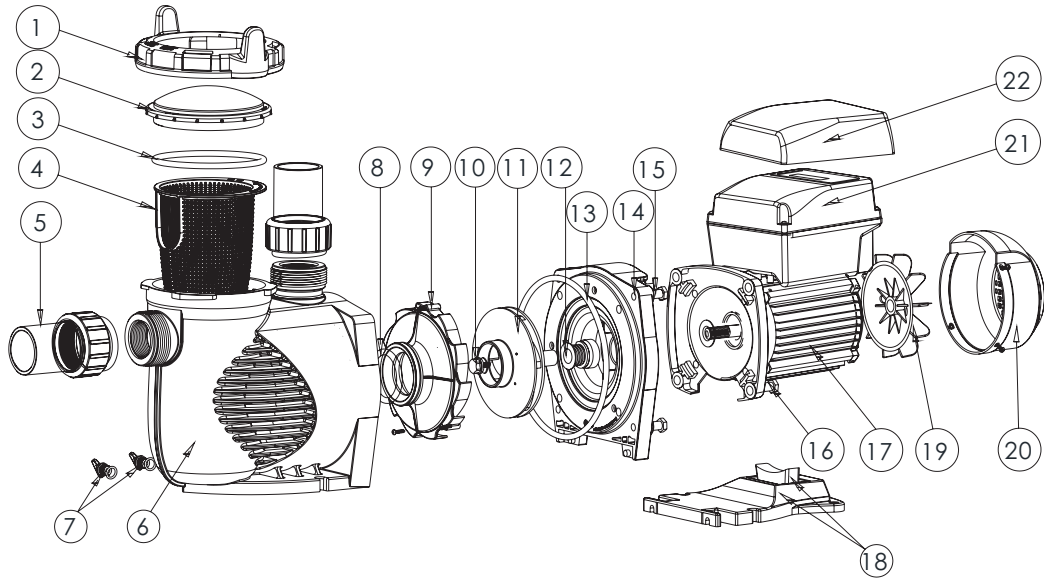
1. Unit name on the plate data or serial number on the label.
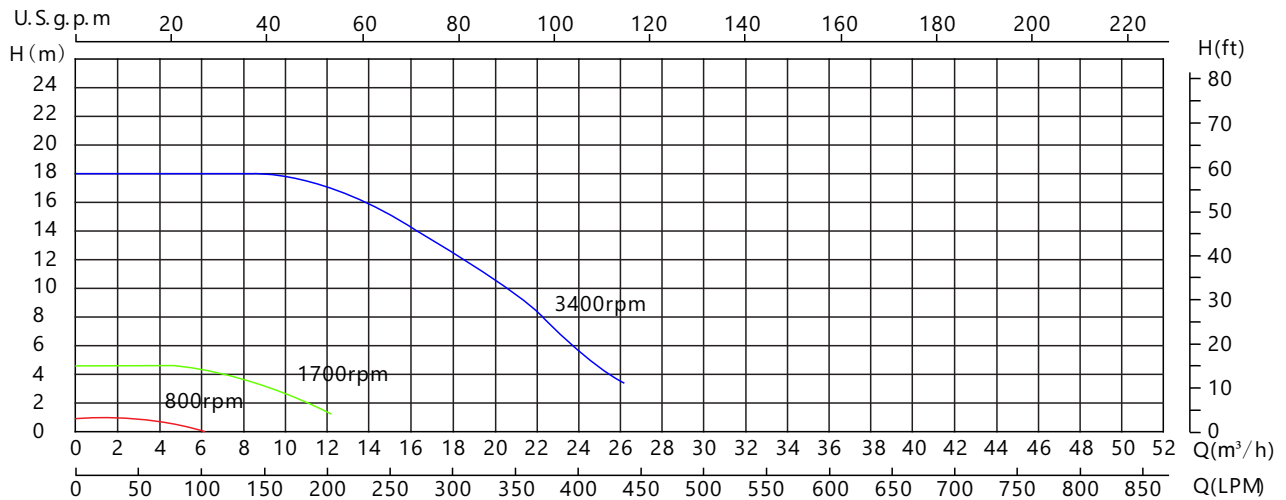
2. Description of the part.

15. DIMENSIONS

[8.46]
215

[11.81]
300

[8.62]
219

[5.00]
126.90

[5.25]
133.43

[6.06]
154

[4.41]
112

[11.67]
296.46

[22.37]
568.20

[9.33]
237

[7.68]
195

[10.60]
269

16. REPLACEMENT PARTS

Key No.	Part No.	Description	QTY
1	01021143	Nut for lid	1
2	01041057	Transparent Lid	1
3	02010253	O-Ring for Lid	1
4	01112080	Basket	1
5	89023801	1.5" Union	2
6	01021144	Pump Body	1
7	89021307	Drain Plug with O-ring	2
8	02010245	O-Ring for Diffuser	1
9	01112081	Diffuser	1
10	89020719	Screw for impeller with O-Ring	1
11	01311058	Impeller For SPV150 & EPV150	1
12	04015065	3/4″ Mechanical seal (EPH/EPV/SPH/SPV)	1
13	02010246	O-Ring for Flange	1
14	01021145	Flange	1
15	89020720	M8 x 35 Screw with Washer for Motor	4
16	03011075	M8 x 30 Screw	4
17	04020140	SPV150 TYC-71L Motor	1
18	01112082	Base	1
18	02010211	Arch Cushion for Base	1
19	01031027	Fan	1
20	01321032	Fan Cover	1
21	89023901	Programmable Controller for SPV150	1
22	01041061	Transparent Lid for Programmable Controller	1

17. SPECIFICATION AND PUMP CURVE

Code	Model		Voltage/ Frequency	Max Load Current	Connection ID/OD	Input Power	Horse power	RPM
9023302	SPV150	RS485	220-240V 50Hz/60 Hz	5.9-5.4A	1.5''/2" 50mm/63mm	1.30 (kW)	1.5 hp	800-3400 RPM
9023303	SPV150WR	WIFI + RS485						

18. TROUBLE SHOOTING

Problem description	Possible causes
Motor does not start	1. Disconnect switch or circuit breaker in off position 2. Fuses blow nor thermal over load open 3. Locked motor shaft 4. Motor windings burned out 5. Defective starting switch inside single phase motor 6. Disconnected or defective wiring 7. Low voltage
Pump does not reach full speed	1. Low voltage 2. Pump connected to the wrong voltage
Motor over heats (protect or trips)	1. Low voltage 2. Motor windings connected to the wrong voltage on dual voltage model
Pump delivers no water	1. Pump is not primed 2. Closed valve in suction or discharge line 3. Leakage or air into suction system 4. Impeller clogged

Problem description	Possible causes
Leakage of water at the shaft	Shaft seal requires replacement
Low pump capacity	1. Valve in the suction or discharge line partly closed 2. Suction or discharge line partly plugged 3. Suction or discharge line too small 4. Plugged basket in skimmer or hair and lint strainer 5. Dirty filter 6. Impeller clogged
High pump pressure	1. Discharge vale or inlet fittings closed too much 2. Return lines too small 3. Dirty filters
Noisy pump and motor	1. Plugged basket in skinner or hair in lint strainer 2. Worn motor bearings 3. Valve in suction line partly closed 4. Suction line partly plugged 5. Vacuum hose plugged or too small 6. Pump not supported properly
Air bubbles at inlet fittings	1. Leakage of air into the suction line in connections or valve stem 2. Cover gasket of hair and lint strainer needs cleaning 3. Low water level in the pool

Note: If the above recommendations of this manual do not solve your particular problem(s), please contact your local service agent for further assistance.

19. WARRANTY POLICY

Emaux manufactures its products with the highest standard of workman ship, using the best materials available through state of the art process. Emaux proudly warrants its products as follows:

EXTENDED WARRAN TY FOR SPECIFIC PRODUCTS (OFFERED FROM DATE OF INVOICE).	
Product	**Warranty Period**
Filters & Filter Systems	2 years
Pumps	1 year
Underwater Lights	1 year (bulbs 90 days)
Ladders	1 year
Control devices	1 year
Heat Pumps & Heat Exchangers	1 year
Salt Chlorinators & UV Systems	1 year (2 years for cell material)
Pool Fittings	1 year
Cleaning Equipment & All others	1 year

19.1 EXCEPTIONS THAT MAY RESULT IN DENIAL OF A WARRANTY CLAIM:

1. Damage caused by careless handling, improper repackaging or shipping.
2. Damage due to misapplication, misuse, abuse or failure to operate and install the equipment as specified in this manual.
3. Damage caused by a misuse, abuse or failure to operate and install the equipment out of the scope of a professional level demanded in similar equipment or installation type.
4. Damage due to unauthorized product modifications or failure to use Emaux original replacement parts.
5. Damaged caused by negligence or failure to properly maintain products as specified in this manual.
6. Damage caused by failure to maintain water chemistry in conformity with the standards of the swimming pool industry for any length of time.
7. Damage caused by water freezing inside the product.
8. Accident damage, fire or other circumstances outside the control of Emaux.
9. Items had been repaired or altered in any way by any person that is not authorized by Emaux.
10. Wear & tear parts.

19.2 CLAIM PROCESS

Summary of Emaux Claim Process in 3 steps:
1. Claim: Customer contacts Emaux salesperson and provides completed details of the claim which includes:
    (1) Information about the failed product such as the part number(s) and serial number(s).
    (2) Description of the complaint/failure.
    (3) Pictures
2. Once the complaint is received, the product quality incident will then be reviewed by Emaux's Quality Control Department following the "Emaux Warranty Policy".
3. Conclusion: After the investigation is completed, Emaux will inform the distributor accordingly.

19.3 WARRANTY OBLIGATION

Emaux warrants any of above items from workmanship and/or material(s).

Should a defect become evident during the term of warranty, Emaux will, at its option, repair or replace such item or part at its own cost and expense. Customer will need to follow the warranty claim procedures from Emaux in order to obtain the benefit on this warranty.

Emaux is not, however, responsible under this warranty for any cost of shipping or transportation of the equipment or parts thereof "to" or "from" our technical operations.

Emaux is not able to liable for any loss of time, inconvenience, incidental expenses such as labor cost, phone calls, legal cost or material cost incurred in connection with the replacement or removal of the equipment, or any other consequential or incidental damage on persons or assets. Emaux will be not responsible for any business profit loss operation stop due to the non-conformity product equipment. No indemnity or damages can be claimed on any account whatever.

19.4 WARRANTY OR REPRESENTATIONS BY OTHERS

No dealer or other person has authority to make any warranty or representation concerning Emaux or its products. Accordingly, Emaux is not responsible for any such warranty or representation.

EMAUX WATER TECHNOLOGY CO., LTD

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PHONE +852 2832 9880**

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