



**SPV Pump
Installation & Operating Instructions**
**SPV水泵
安装及操作说明书**

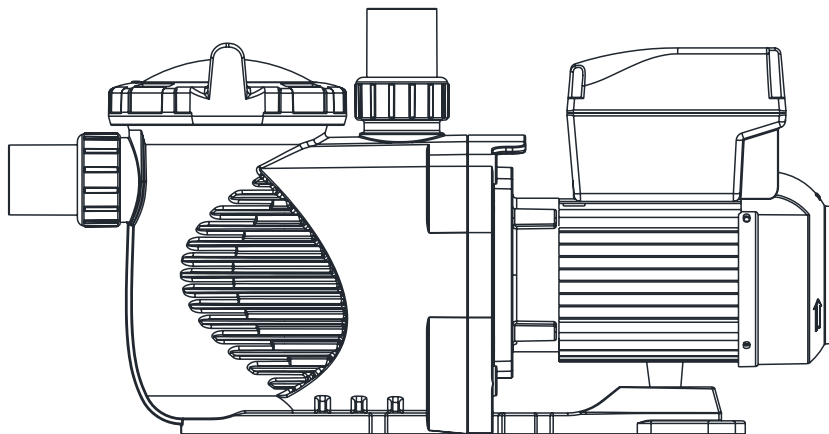


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1 Pump Installation 水泵的安装

- * Please install on a level vibration free surface.
- * Allow use of short, direct suction pipe. (To reduce friction losses & don't install the pump at more than 3m geometrical height from water level)
- * Allow for gate valves in suction and discharge piping if required.
- * Have adequate floor drainage to prevent flooding.
- * Protect from excess moisture.
- * Allow the adequate access for servicing pump and piping.

NOTICE:

Pump suction and discharge connections have molded in thread stops, DO NOT try to screw pipe in beyond these stops.

- * 请安装在一个平坦防震的表面。
- * 允许使用短的、直接抽吸的水管。(为了减少摩擦水头，不要将水泵安装在高于水平面3米几何高度的地方)
- * 需要时允许在抽水和排水管道上安装闸阀。
- * 有充足的地面排水能力以防止水浸。
- * 防止过度潮湿。
- * 为维修水泵和管道预留足够通道

注意：水泵的抽水和排水管接头上铸压有螺纹止位，拧紧时不要试图超过这些止位。

1.1 Operation

The pump is fitted with a wide range of settings to suit any filtration requirements. The controller is used to program a range of motor speeds and settings described as "Schedules" in the program. To program the pump go to page 5 for easy description of how this is done. **NEVER** run pump dry! Running pump dry may damage seals, causing leakage and flooding! Fill pump with water before starting motor.

Before removing lid:

- * STOP PUMP before proceeding.
- * RELEASE ALL PRESSURE from pump and piping system.
- * NEVER tighten or loosen screws while pump is operation.
- * Do not block pump suction!

1.1 操作

该水泵配有各种装置以满足任何过滤需求。其控制器可为各种电机转速和设置制定程序指令，在程序中被称为“日程”。关于水泵的编程，可参阅第5页对如何编程的简单描述。绝对不要让水泵干运转！水泵的干运转可能损坏密封件，导致漏水和水浸！启动电机前要在水泵内充满水。

- * 在开启水泵盖之前：
- * 操作前关闭水泵。
- * 释放来自水泵和管道的所有压力。
- * 绝不可在水泵运转期间拧紧或松开螺丝。
- * 不要堵住水泵的抽水口！

1.2 Priming Pump:

- * Release all air from filter and piping system: see filter owner manual.
- * In a flooded suction system (water source higher than pump), pump will prime itself when suction and discharge valves are opened.
- * If pump is not in a flooded suction system, unscrew and remove pump lid and fill with water.

1.2 启动水泵：

- * 释放过滤器和管道内的所有空气：参见过滤器使用手册。
- * 在一个溢水抽吸的系统(水源高于水泵)里，当抽水和排水阀开启时，水泵会自启动。
- * 如果水泵不是处于溢水抽吸的系统，旋开并卸下水泵盖，在水泵内注水。

NOTICE: Tighten pump lid by hand only.

注意：只能徒手拧紧水泵盖。

2. User's Guide 使用指南

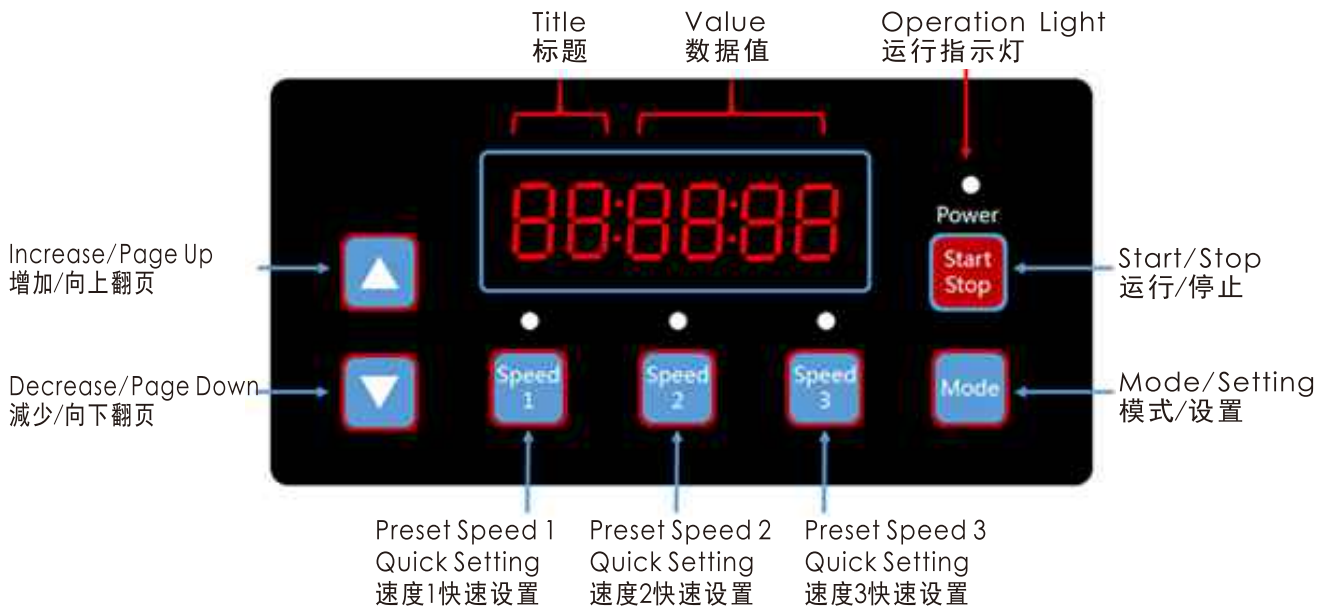
2.1 Overview 概述

This controller match with the variable speed drive for the swimming pool variable speed pump, connect with the variable speed drive . Functions as shown below:(本操作器是配套游泳池变频器的外接操作器。具体功能如下：)

- 1) Timer: Built in real time clock(时钟显示：实时时钟显示)
- 2) Control Parameters: Power usage and motor running speed (RPM) display(监控参数：电机运行速度与实时功率；)
- 3) Preset Running Speed: 3 preset running speeds(速度档位：三档运行速度选择；)
- 4) Parameter Setting: Real time clock, 3 preset running speeds, 3 schedule settings, self priming setting(参数设置：实时时钟、三档运行速度、三组计划任务、自吸功能设置。)
- 5) Error Display: Over Current, Over Voltage, Under Voltage, Overheating, fault code(故障显示：过流、过压、欠压、过热等故障代码。)
- 6) Auto Recovery: Over Current, Over Voltage, Overheating, Power failure, restore to the settings before the error.(自动复位：过流、过压、过热、断电后，自动恢复之前的运行状态。)
- 7) Power Failure Recovery: When power resume from failure, will restore to the settings before the power failure.(断电恢复：断电后重新上电，会恢复断电前的状态。)

2.2 Controller outlook display 操作器外观示意图

2.2.1 Interface Display Diagram 界面显示图



2.2.2 Indication Light Reference 指示灯状态表示

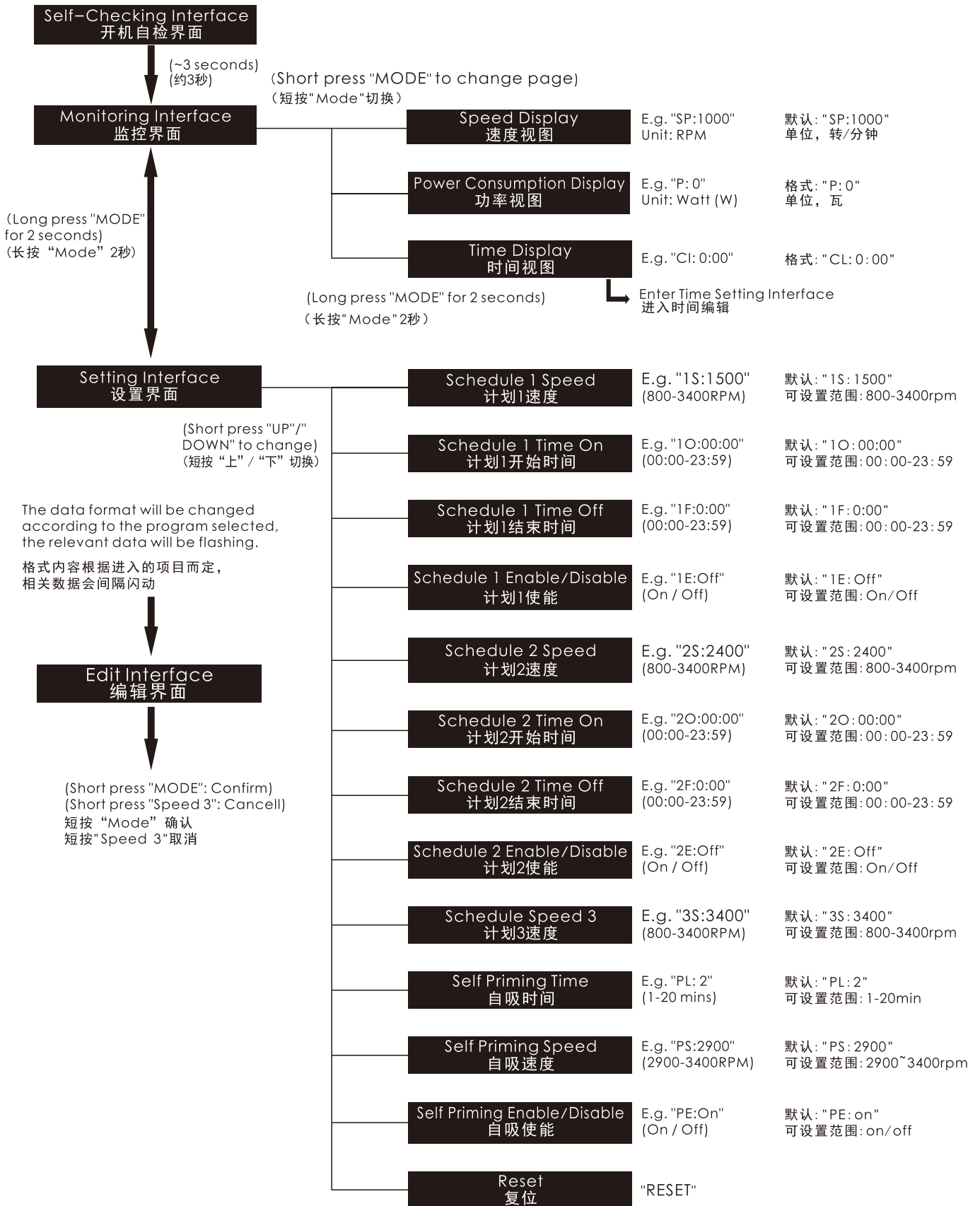
	S1 速度1指示灯	S2 速度2指示灯	S3 速度3指示灯	运行指示灯	Operation Light Flashing 数码管闪动
Preset Speed 1 Enable 计划1速度使能	1	0	0	X	0
Preset Speed 2 Enable 计划2速度使能	0	1	0	X	0
Preset Speed 3 Enable 计划3速度使能	0	0	1	X	0
In Operation 运行中	X	X	X	1	0
Warning 报警	1	1	1	1	1

Remark: "1" Light On, "0" Light Off, "X" N/A 备注：“1”代表亮，“0”代表不亮，“X”代表不相关

(Chart 2.1)
(表2.1)

3. Menu structure 菜单结构图

3.1 Program Flow Chart 菜单概览



3.2 Buttons Control 各菜单下按钮作用

Action 动作\菜单	Monitoring Interface 监控界面	Setting Interface 设置界面	Edit Interface 编辑界面	报警界面 /自动复位Error/Auto Recovery
Short press "UP" "上" 短按释放	Current speed +10rpm 当前速度+10rpm	Page Up 正向翻页	Add current value 当前位数据增加	N/A 无
Long press "UP" "上" 长按	Current speed increase rapidly 当前速度快速增加	Page Up rapidly 正向快速翻页	Add current value rapidly 当前位数据快速增加	N/A 无
Short press "DOWN" "下" 短按释放	Current speed -10rpm 当前速度-10rpm	Page Down 反向翻页	Reduce current value 当前位数据减少	N/A 无
Long press "DOWN" "下" 长按	Current speed decrease rapidly 当前速度快速减少	Page Down rapidly 反向快速翻页	Reduce current value rapidly 当前位数据快速减少	N/A 无
Short press "MODE" "模式" 短按释放	Change page 翻页	Enter Edit Interface 进入编辑界面	Confirm change, back 确认更改, 返回	N/A 无
Long press "MODE" "模式" 长按	When in the Time Dislay page: Enter Time Setting 如果在时间页面, 进入时间编辑 When in other pages: Enter Setting Interface 其他页面进入设置界面;	Enter Monitoring Interface 进入监控界面	N/A 无	N/A 无
Short press "Start/Stop" "运行" 短按释放	Start / Stop 运行/停止	Start / Stop 运行/停止	N/A 无	复位操作Auto Recovery
Long press "Start/Stop" "运行" 长按	N/A 无	N/A 无	N/A 无	N/A 无
Short press "Speed 1" "速度1"短按释放	Set current speed to preset speed 1 当前速度=计划1速度	Switch to preset speed 1 跳转到计划1速度	Edit cursor move left 编辑位左移	N/A 无
Long press "Speed 1" "速度1"长按	N/A 无	N/A 无	Edit cursor move left rapidly 编辑位快速左移	N/A 无
Short press "Speed 2" "速度2"短按释放	Set current speed to preset speed 2 当前速度=计划2速度	Switch to preset speed 2 跳转到计划2速度	Edit cursor move right 编辑位右移	N/A 无
Long press "Speed 2" "速度2"长按	N/A 无	N/A 无	Edit cursor move right rapidly 编辑位快速右移	N/A 无
Short press "Speed 3" "速度3"短按释放	Set current speed to preset speed 3 当前速度=计划3速度	Switch to preset speed 3 跳转到计划3速度	Cancel change, back 取消更改, 返回	N/A 无
Long press "Speed 3" "速度3"长按	N/A 无	N/A 无	N/A 无	N/A 无

(Chart 3.1)
(表3.1)

4 Programming 功能详解

4.1 Programmed Schedule 计划任务相关

- 1) 2 schedule settings available, preset speed at 1500RPM and 2400RPM.计划任务总数有2个，默认速度分别为1500RPM，2400RPM。
- 2) Each schedule setting has 4 parameters "Running Speed", "Time On", "Time Off", Enable / Disable.(每个计划任务有“运行速度”，“开始时间”，“结束时间”，“使能”四个选项。)
- 3) Programmed Schedule Priority: Schedule 1 > Schedule 2 (计划任务优先级：计划1 > 计划2。)
- 4) Programmed Schedule Logic: If more than 1 schedule is enabled within the same time period, the controller will operate only with the highest priority schedule and speed, the corresponding indication light will on.(计划任务执行逻辑：如果同时有若干个计划任务在使能状态，并且在运行时间内，那么变频器执行最高优先级的一个计划任务与速度，同时相应的指示灯点亮。)
- 5) Programmed Schedule Termination: If all schedules are completed with its setting time, the controller will switch back to the condition before the schedule. (计划任务的自然终止：假如所有计划任务均达到完成时间，那么变频器返回进入任务前的状态（保持任务开始前的速度与运行状态）。)
- 6) Programmed Schedule Manually Disable: When any programmed schedule is running, press any button ("UP", "DOWN", "Start/Stop", "Speed 1", "Speed 2", "Speed 3") in the monitoring interface with disable all programmed schedules. (Press "Start/Stop" will stop the pump, the last running speed will be recorded, the operation light will remain; Press "UP", or "DOWN", running speed add/reduce 10rpm from the current speed, the operation light will off; Press "Speed X", the selected speed will replace the current speed, with the corresponding speed indication light on)(计划任务的人为终止：在任何任务进行中，在“监控菜单”按“上”，“下”，“运行”，“速度x”，均会关闭所有的计划任务状态，当前的运行状态会覆盖进入任务之前的状态。（按“运行”，那么变频器会停机，并且最后的运行速度保留，速度指示灯保留；按“上”或者“下”，运行速度变更为当前速度 $\pm 10\text{rpm}$ ，变频器不停机，速度指示灯关闭；按“速度x”，被选择的会覆盖当前速度，指示灯更新为被选择的速度，变频器不停机）)
- 7) The scheduled settings and auto recovery will not contradict each other. When there is error, the variable speed driver will restore to the settings before the error. (The priority setting is still applicable)计划任务与自动复位功能不冲突。故障发生后，自动复位结束，变频器会继续之前的任务状态（倒数过程中的任务抢占依然有效）。

4.2 Self Priming 自吸功能

- 1) Self Priming setting has 3 parameters "Self Priming Time", "Self Priming Speed", "Enable/Disable".(自吸功能有“自吸时间”，“自吸速度”，“使能”三个选项。)
- 2) Self Priming function will be activated if the function is enable, the running speed is lower than the "Self Priming Speed" and the running time is less than the "Self Priming Time".(自吸功能的触发条件是自吸功能“使能”打开，运行转速比“自吸转速”要低，运行时间少于“自吸时间”。)
- 3) Self Priming default as "Enable".自吸功能默认开启。

4.3 Auto Recovery 自动复位功能

- 1) Auto Recovery is a core function, with no setting options.(自动复位功能属于固有功能，没有设置选项。)
- 2) When there is Over Current, Over Voltage or Low Voltage error, the variable speed driver will recover automatically and will restart after 10 seconds.(当变频器发生过流、过载或者低压报警的时候，经过10秒后自动复位变频器；如果报警之前是运行状态，自动复位后，再经过10秒自动启动变频器。)

- 3) In the first 5 seconds, the display will shows the "error details /error times" (e.g. "OC1 1T"). In the next 5 seconds, the display will shows the "Count down details / Count down time" (e.g. "AR 5" or "AS 5"). 菜单显示内容分为前5秒的“报警内容报警次数”（如“OC1 1T”），以及后5秒的“倒数动作倒数时间”（如“AR 5”或“AS 5”）。
- 4) If two errors happened in less than 60 seconds interval, the auto recovery time will increase once. If the auto recovery increase to 3 times, the system will direct to the Error menu, and will not auto recover. 如果两次相关报警之间间隔时间少于60秒，那么自动复位次数会增加。如果达到三次，就会直接进入错误菜单，不再进入自动复位。
- 5) Press "Start/Stop" button to cancel the count down during the auto recovery process, to activate the auto recovery immediately. 自动复位过程中可以手动按“运行”取消倒数，直接复位变频器。（但是不会再自动运行）

4.4 Power Failure Recovery 断电恢复功能

- 1) The current settings (Enable/disable, current speed, scheduled settings) are protected by the capacitance, the memory will be kept for 72 hours. 变频器的当前运行状态（是否运行，当前速度，计划任务状态）受到超级电容保护，可以有至多72小时的保存时间。
- 2) When the power is reconnected, the variable speed driver will restore to the settings before the error. 重新接上电源，变频器会根据断电之前的状态重新启动变频器。

4.5 Real Time Clock 实时时钟

- 1) Real time clock display time in "hours:minutes" (实时时钟的组成是“时：分”)
- 2) Long press "MODE" button at the "Time Display Page" to enter "Time Setting". (实时时钟需要在“监控菜单”的“时间试图”页面下，长按“模式”，进入“编辑界面”。)

4.6 Reset 参数复位

At the setting interface, switch to the Reset menu, display "RESET", short press "Mode", the content flash, short press "Mode" again, reset complete. Short press "Speed 3" while the content is flashing to stop the reset. 在设置菜单下，切换到复位菜单，显示“RESET”，短按“mode”键后内容扇动，再次短按“mode”键，菜单取消闪动，参数复位完成。如果在闪动的时候短按“Speed 3”，则中断复位。

5 Fault treatment 故障处理

5.1 Communication error 通讯故障

When there is communication error between the controller and the variable speed driver, an error code "ER...." will be displayed. (当操作器与变频器通讯不正常时，操作器会进入故障界面，显示“ER----”。)

5.2 Error Display 变频器故障

When the Controller is not working, a fault code will be shown on the controller display, E.g. "ER: OV". (当变频器发生故障时，操作器会显示故障代码，格式如“ER: OV”。)

Press "Start/Stop" button will restore the controller. (这时，可按下“运行”按钮，复位变频器。)

Below the common fault code list: (一些主要的可能发生的故障：)

Error 报警显示	Description 内容	Reason 原因
OC	Over Current: Driver's output current exceeds the threshold (200% of rated current) 驱动器的输出电流超过阈值（约额定电流的200%）	<ul style="list-style-type: none"> • Driver output failure • Driver IPM module is damaged • 驱动器输出侧发生短路、接地 • 驱动器IPM模块损坏
OV	Over Voltage: Main circuit DC voltage exceeds the threshold 主回路直流电压超过阈值	<ul style="list-style-type: none"> • Over power of the power supply • Power supply voltage exceeds controller setting • 电源电压太高 • 上电时电源电压超过驱动器工作范围
UV	The main electric current is too low Under Voltage: 主回路直流电压低过	<ul style="list-style-type: none"> • Power supply disconnected, driver discharging • Supply voltage fluctuation it too large • 切断电源，驱动器放电中 • 输入电源的电压波动太大
OH	Motor heat sink overheating Over Heat: 驱动器散热片的温度超过	<ul style="list-style-type: none"> • Ambient temperature is too high • Motor Cooling Fan does not work • 环境温度太高 • 驱动器的散热风扇停止运行

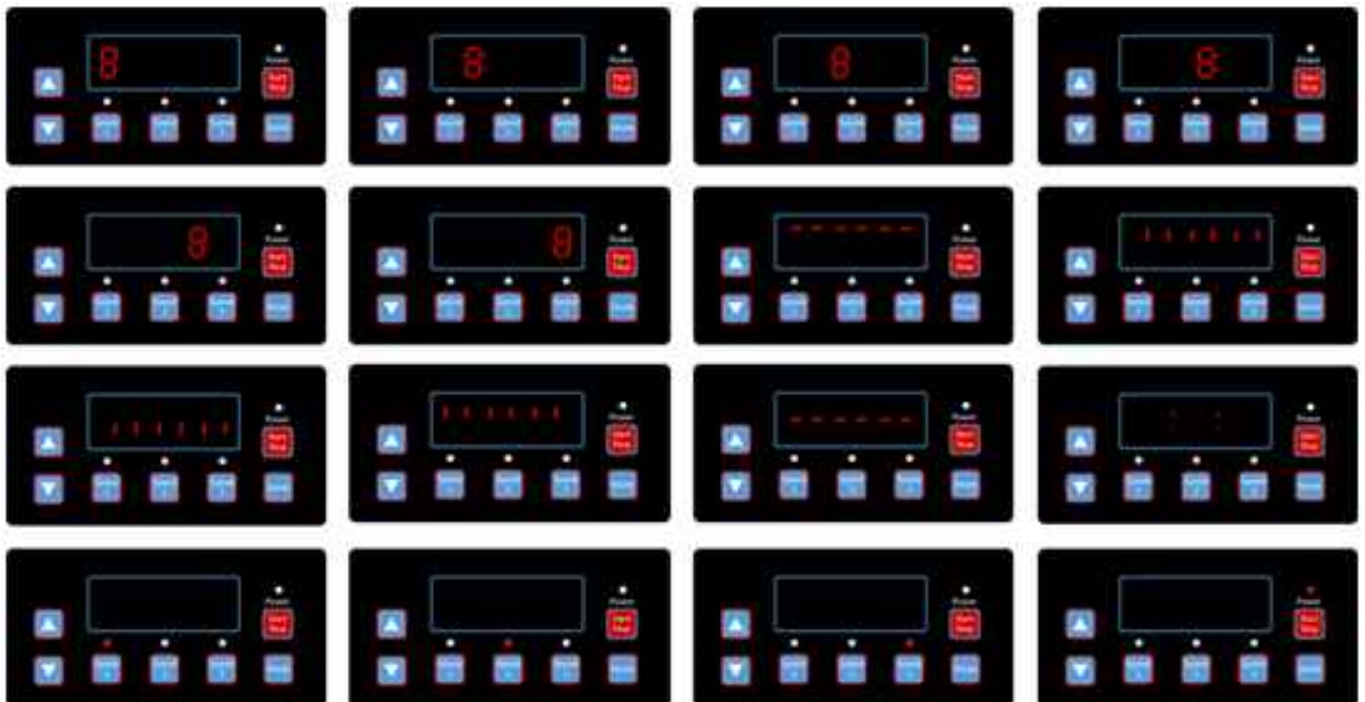
(Chart 5.1)
(表5.1)

6 Operating Procedure 具体操作流程

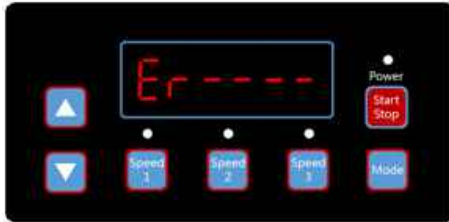
6.1 Starting 上电启动

After starting, the driver will run the self-checking procedure by scanning the display and the operation light, as diagram 6.1. (启动后，会扫描数码管与指示灯作为自检流程，如图6.1。)

When there is communication error between controller and the variable speed driver, communication error will be displayed, as diagram 6.2. (如果操作器与变频器链接出现错误，则出现图6.2。)



(Diagram 6.1, Self-checking procedure)
(图6.1, 启动自检流程)



(Diagram 6.2, Communication Error)
(图6.2, 链接错误)

6.2 Monitoring Interface 监控界面

After starting, enter Monitoring Interface. As diagram 6.3 (启动成功, 进入监控界面。如图6.3。) Short press "Mode" to interchange between speed or time display page. As diagram 6.3-6.5 (短按"Mode"可以在"速度视图""功率视图""时间视图"切换, 如图6.3~6.5。)



(Diagram 6.3, Speed display page)
(图6.3, 速度视图)



(Diagram 6.4, Power consumption display page)
(图6.4, 功率视图)



(Diagram 6.5, Time display page)
(图6.5, 时间视图)

Short press "Speed1" to "Speed3", to switch to the 3 preset speeds, the corresponding indication light will on, as diagram 6.6-6.8. (短按"Speed1"到"Speed3", 可以实现三个设定速度的快速设置, 并且点亮相应的指示灯, 如图6.6~6.8。)



(Diagram 6.6, Speed 1)
(图6.6, 速度1)



(Diagram 6.7, Speed 2)
(图6.7, 速度2)



(Diagram 6.8, Speed 3)
(图6.8, 速度3)

At any time press "Run", to stop/start the variable speed driver, and light on/off the operation light. (在任意视图短按"Run", 可以启动/停止变频器, 并且点亮/熄灭运行灯, 如图6.9。)



(Diagram 6.9, Power consumption display, Speed 3)
(图6.9, 功率界面, 速度3, 运行状态)

At any time press "Up" or "Down", to add or reduce the rpm by 10, as diagram 6.10-6.11. (在任意视图按 "Up"跟 "Down", 可以增加或者减少10rpm, 如图6.10~6.11)



(Diagram 6.10, 1000rpm press "Up" once)
(图6.10, 1000rpm速度下按一次 "Up")



(Diagram 6.11, 1000rpm press "Down" once)
(图6.11, 1000rpm速度下按一次 "Down")

Long press "Mode", to enter the setting interface, as diagram 6.12. (长按 "Mode", 可以进入设置菜单, 如图6.12.)

6.3 Setting Interface 设置界面

Short press "Mode" to interchange between "Schedule 1 Speed", "Schedule 1 Time On", "Schedule 1 Time Off", "Schedule 1 Enable/Disable", "Schedule 2 Speed", "Schedule 2 Time On", "Schedule 2 Time Off", "Schedule 2 Enable/Disable", "Schedule 3 Speed", "Self Priming Time", "Self Priming Speed", "Self Priming Enable/Disable", "Auto Recovery" pages. As diagram 6.12-6.23. (短按 "Mode"可以在 "计划1速度视图", "计划1开始时间视图", "计划1结束时间视图", "计划1使能视图", "计划2速度视图", "计划2开始时间视图", "计划2结束时间视图", "计划2使能视图", "计划3速度视图", "自吸时间视图", "自吸速度视图", "自吸使能视图", "参数重置视图" 中切换。如图6.12~6.23)



(Diagram 6.12, Schedule 1 Speed, default 1500rpm)
(图6.12, 计划速度1, 默认1500rpm)



(Diagram 6.13, Schedule 1 Time On, default 00:00)
(图6.13, 计划速度1开始时间, 默认00: 00)



(Diagram 6.14, Schedule 1 Time Off, default 00:00)
(图6.14, 计划速度1结束时间, 默认00: 00)



(Diagram 6.15, Schedule 1 Enable/Disable, default Off)
(图6.15, 计划速度1使能, 默认OFF)



(Diagram 6.16, Schedule 2 Speed, default 2400rpm)
(图6.16, 计划速度2, 默认2400rpm)



(Diagram 6.17, Schedule 2 Time On, default 00:00)
(图6.17, 计划速度2开始时间, 默认00:00)



(Diagram 6.18, Schedule 2 Time Off, default 00:00)
(图6.18, 计划速度2结束时间, 默认00:00)



(Diagram 6.19, Schedule 2 Enable/Disable, default Off)
(图6.19, 计划速度2使能, 默认OFF)



(Diagram 6.20, Schedule 3 Speed, default 3400rpm)
(图6.20, 计划速度3, 默认3400rpm)



(Diagram 6.21, Self Priming Time, default 2 mins)
(图6.21, 自吸时间, 默认2分钟)



(Diagram 6.22, Self Priming Speed, default 2900rpm)
(图6.22, 自吸速度, 默认2900rpm)



(Diagram 6.23, Self Priming Enable/Disable, default On)
(图6.23, 自吸使能, 默认ON)



(Diagram 6.24, Reset)
(图6.24, 参数复位)

Short press "Speed 1" "Speed 2" "Speed 3" to switch to "Schedule 1 Speed", "Schedule 2 Speed" or "Schedule 3 Speed". (短按 "Speed 1" "Speed 2" "Speed 3" 可以分别快速跳转到 "计划1速度视图", "计划2速度视图", "计划3速度视图".)

6.4 Edit Interface 编辑状态

Long press "Mode" at the time display page under monitoring interface or short press "Mode" at any display page to enter the edit interface. (在监控菜单"时间视图"长按 "Mode" 或者在设置界面任意视图短按 "Mode" 进入该视图编辑界面。)

At the edit interface, the changeable area will flash, press "Up" or "Down" to change the value, press "Speed 1" or "Speed 2" to move left or right. (在编辑界面, 可以编辑部分闪动, "Up" 跟 "Down" 控制闪动部分的值变化, "Speed 1" "Speed 2" 分别左移与右移编辑位置。)

When editing, short press "Mode" to confirm, or short press "Speed 3" to cancel. (在编辑状态下, 可以短按 "Mode", 确认修改, 或者短按 "Speed 3" 取消修改。确认或者取消后, 退出编辑状态, 取消闪动。)

6.5 Auto Recovery 自动复位/自动重启

When there is "OC""OV""OL""OH""UV" error, the system will recovery automatically. If two errors happened in less than 60 seconds interval, the auto recovery time will increase once. If the auto recovery increase to 3 times, the system will direct to the Error menu, and will not auto recover. (在“OC""OV""OL""OH""UV"报警启动的时候,有机会进行自动复位/重启。每次相关报警触发的时候,如果间隔大于60秒,那么清除自动复位/重启次数,如果少于60秒,那么自动复位/重启次数加1。如果次数达到3次,就会直接进入报错界面。)

The Auto Recovery page will display the error details (diagram 6.25) in the first 5 seconds and the count down details in the next 5 seconds (diagram 6.26) (自动复位界面分为错误信息显示(图6.25,持续5秒),与倒数界面(图6.26,持续5秒),并且带倒数时间。)

Press "Start/Stop" button to cancel the count down during the auto recovery process, to activate the auto recovery immediately. (without activate the auto run. (自动复位过程中可以手动按“运行”取消倒数,直接复位变频器。(但是不会再自动运行))

If there is error and the variable speed driver is in operation, then after auto recovery the system will enter the auto start page. The auto start page will display the error details (same as auto recovery, last for 5 seconds) and count down details (diagram 6.27, last for 5 seconds). At any time, short press "Run" to cancel the procedures and auto recover immediately (the variable speed driver will default Off). (如果触发报警的时候,变频器在运行状态,那么在自动复位后,会进入自动运行界面。自动运行界面分为错误信息显示(与自动复位相同,持续5秒),与倒数界面(图6.27,持续5秒),并且带倒数时间。在以上任意界面,短按“Run”,会取消自动复位/自动运行,直接复位(变频器保持停止状态)。)



(Diagram 6.25, Auto Recovery, error details OC1, error time 1)
(图6.25, 自动复位/启动, 错误信息OC1, 错误次数1次)



(Diagram 6.26, Auto Recovery count down, 5 seconds remaining)
(图6.26, 自动复位倒数, 还剩5秒)



(Diagram 6.27, Auto Start count down, 5 seconds remaining)
(图6.27, 自动启动倒数, 还剩下5秒)

6.6 Error Menu 错误界面

Error Menu display as diagram 6.28, error details will be displayed and all lights will be flashing. (错误界面格式如图6.28。报警内容与所有指示灯均闪动。)

Short press "Run" at the error menu, to auto recover the variable speed driver (keep the driver Off). (在错误界面,短按“Run”,会复位变频器(保持停止状态)。)



(Diagram 6.8 Error, Error code OC1)
(图6.28, 错误报警, 代码OC1)

7 Service Parts 维修零件

Refer all service to your local agent or dealer as his knowledge of your equipment makes him the best-qualified source of information. Order all repair parts through your dealer. Please give the following information when ordering repair parts:

- * Unit nameplate data or serial number on label.
- * Description of part.

若需任何服务请联络本地代理商或经销商，他们对设备的知识确保能提供最佳的专业信息。请通过您的经销商订购所有维修配件。订购配件时请提供下列信息：

- * 设备名称、铭牌上的数据或标签上的系列号。
- * 零件描述

8 Trouble Shooting Guide 故障排除指南

Pump Does Not Start.

- * Check power supply is present.
- * Check mains cord is plugged in.
- * Fuses blown or thermal overload open
- * Locked or Jammed motor shaft - Contact Service Agent.
- * Motor windings burned out - Contact Service Agent.
- * Disconnected or defective wiring.

Pump Does Not Reach Correct Speed.

- * Low Voltage - Contact Service Agent.

Motor Overheating.

- * Ensure adequate ventilation.

No or Poor Water Flow.

- * Ensure pump is primed.
- * Ensure there is no air entering suction side.
- * Basket Full of Debris.
- * Water Level in pool adequate.

Contact Your Local Service Agent for Further Assistance.

水泵不启动

- * 检查是否有电源供应。
- * 检查电源线是否插好。
- * 保险丝是否烧断或过热保护装置开启。
- * 电机轴是否锁死或卡住 - 联络服务代理。
- * 电机绕组烧坏 - 联络服务代理。
- * 接线断开或有缺陷。

水泵达不到正确的转速

- * 电压低 - 联络服务代理。

电机过热

- * 确保通风良好。

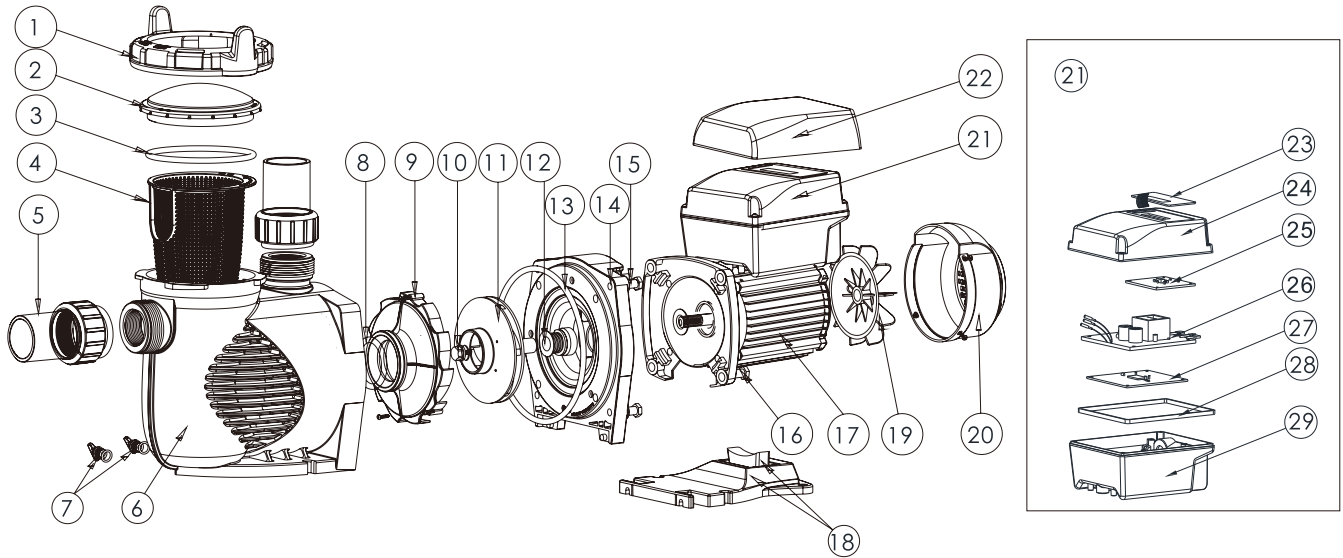
无水流或出水量不足

- * 确保电机已启动。
- * 确保没有空气进入吸水端。
- * 滤篮内是否塞满杂物。
- * 泳池里的水平面是否适当。

若需更多帮助，请联络您的本地服务代理。

9 Replacement Parts 备件

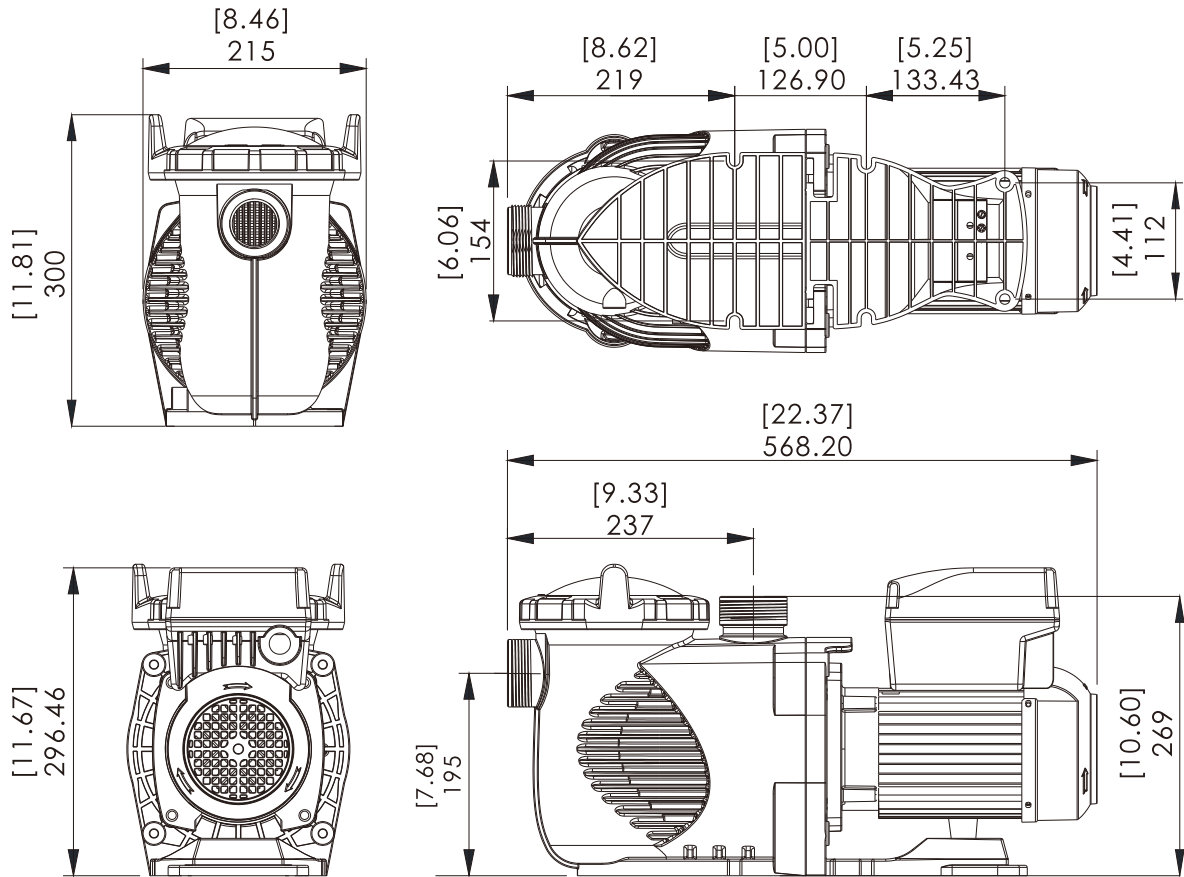
9.1 Parts Diagram 零部件图



9.2 Parts Listing 零部件清单

Item NO. 编号	Part NO. 产品编号	Product Description 产品名称	Qty 数量	
1	01021143	Nut For Lid	透明盖螺母	1
2	01041057	Transparent Lid	透明盖	1
3	02010253	O-Ring for Lid	透明盖密封圈	1
4	01112080	Basket	过滤篮	1
5	89023801	1.5" Union	1.5" 活接头	2
6	01021144	Pump body	泵体	1
7	89021307	Drain Plug with O-ring	扭制	2
8	02010245	O-Ring for Diffuser	分水轮胶圈	1
9	01112081	Diffuser	分水轮	1
10	89020719	Screw for Impeller with O-ring	水叶螺丝	1
11	01311058	Impeller for EPV150 & SPV150	EPV150 & SPV150水叶	1
12	04015046	3/4" Mechanical Seal	3/4" 机械密封	1
13	02010246	O-Ring for Flange	法兰密封圈	1
14	01021145	Flange	法兰	1
15	89020720	M8*35 Screw with Washer For Motor	M8*35带垫圈的电机螺丝	4
16	03011075	M8*30 Screw	M8*30螺丝	4
17	04020140	SPV150 Motor	SPV150电机	1
18	01112082	Base	底座	1
18	02010211	Arch Cushion for Base	底座垫	1
19	01031027	Fan	风扇	1
20	01321032	Fan Cover	风扇盖	1
21	89023901	Controller For SPV150	SPV150变频器	1
22	01041061	Lid for Controller	变频器防护罩	1
23	04015057	Switch keys	薄膜开关按键	1
24	03039920	Cover for Programmable Controller	变频器上盖	1
25	04015060	SPV Operation Panel (PCB)	操作面板	1
26	04015061	PFC PCB	PFC电子板	1
27	04015062	Driver	PCB 驱动板	1
28	02021092	Cushion for Cover	胶垫	1
29	03039919	Shell for Programmable Controller	变频器下盖	1

10 Overall Dimension 尺寸



11 Product Information 产品参数

Code 编号	Mode Code 型号	Connection 连接口	Input Power 输入功率	Horsepower 马力	RPM 转速
88029807	SPV150	1.5"/50mm	1.3kW	1.5HP	800-3400rpm