



SOLAR PUMPS

ENVIRONMENTAL PROTECTION & ENERGY SAVING



SOLAR BOREHOLE PUMPS

CYCLONE

3" DC BRUSHLESS SCREW SOLAR PUMP

NEW!



CYCLONE-77

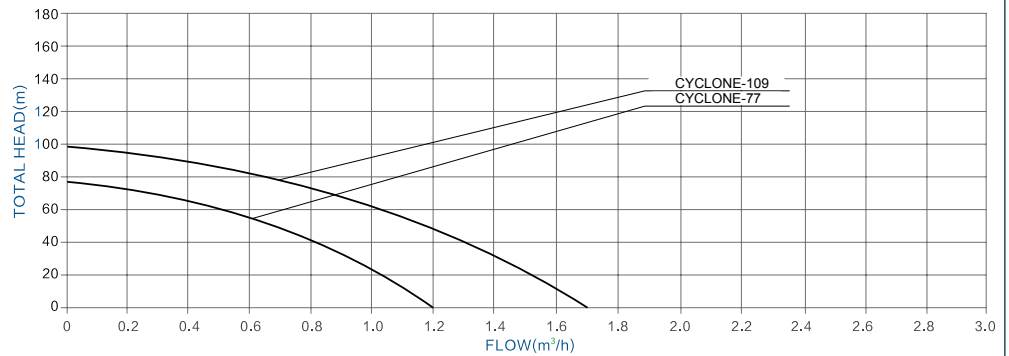


DC CONTROLLER

TECHNICAL DATA

ITEM	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage (VOC)	Power
CYCLONE-77	36V	30V-48V	210W	1.2m³/h	77m	0.75"	2m	<50V	≥ 1.3*PUMP POWER
CYCLONE-109	48V	60V-90V	500W	1.7m³/h	109m	0.75"	2m	<100V	≥ 1.3*PUMP POWER

HYDRAULIC PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

CYCLONE-77: 330W x 1 | CYCLONE-109: 330W x 2

The Items Above Come Complete With An Installation Pack & 1 x Float Switch

TYPHOON

3" DC BRUSHLESS SOLAR PUMP WITH PLASTIC IMPELLER

NEW!



TYPHOON-50

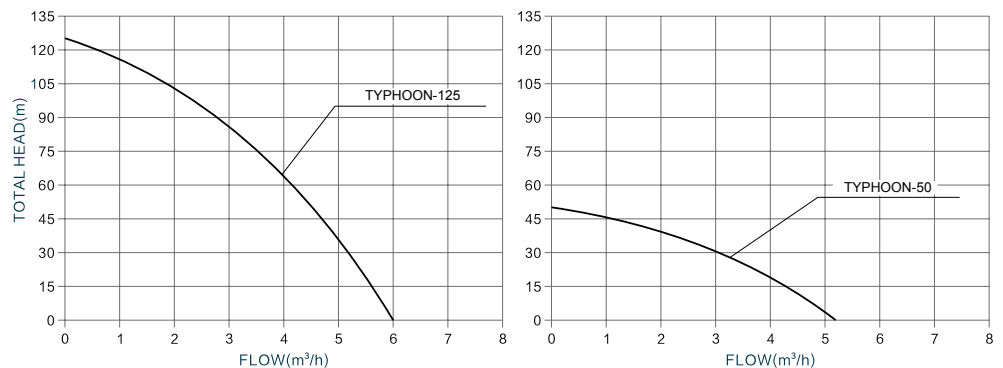


DC CONTROLLER

TECHNICAL DATA

ITEM	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage (VOC)	Power
TYPHOON-50	72V	90V-120V	600W	5.2m³/h	50m	1.5"	2m	<150V	≥ 1.3*PUMP POWER
TYPHOON-125	110V	110V-150V	1500W	6m³/h	125m	1.5"	2m	<200V	≥ 1.3*PUMP POWER

HYDRAULIC PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

TYPHOON-50: 330W x 3 | TYPHOON-125: 330W x 8

The Items Above Come Complete With An Installation Pack & 1 x Float Switch

PLEASE BE ADVISED A WEATHERPROOF DC ISOLATOR MUST BE INCLUDED TO ISOLATE PANELS FOR MAINTENANCE.

REFER TO ODD16 to 32D/E2/E4/E22 FOR SELECTION ACCORDING TO APPLICATION

SOLAR CENTRIFUGAL PUMPS

AQUA

DC BRUSHLESS CENTRIFUGAL SOLAR PUMP

NEW!



AQUA-6



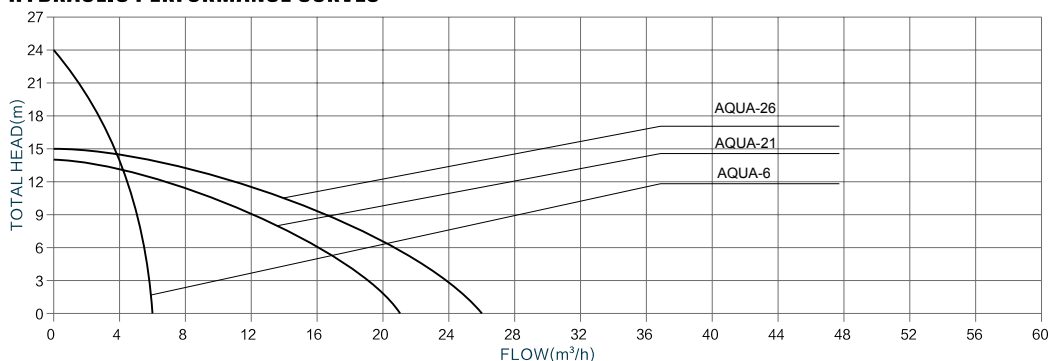
DC CONTROLLER

Portable Pump Unit

TECHNICAL DATA

ITEM	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage(VOC)	Power
AQUA-6	48V	60V-90V	550W	6m ³ /h	24m	1"	0.6m	<100V	≥1.3*PUMP POWER
AQUA-21	72V	90V-120V	750W	21m ³ /h	14m	2"	0.6m	<150V	≥1.3*PUMP POWER
AQUA-26	72V	90V-120V	1100W	26m ³ /h	15m	2"	0.6m	<150V	≥1.3*PUMP POWER

HYDRAULIC PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

AQUA-6: 330W x 2 | AQUA-21: 330W x 3 | AQUA-26: 330W x 6

The Items Above Come Complete With An Installation Pack & 1 x Float Switch

Pumps To Be Primed Before Use

SOLAR SURFACE PUMPS

HURRICANE

DC BRUSHLESS SURFACE SOLAR PUMP

NEW!



HURRICANE-30

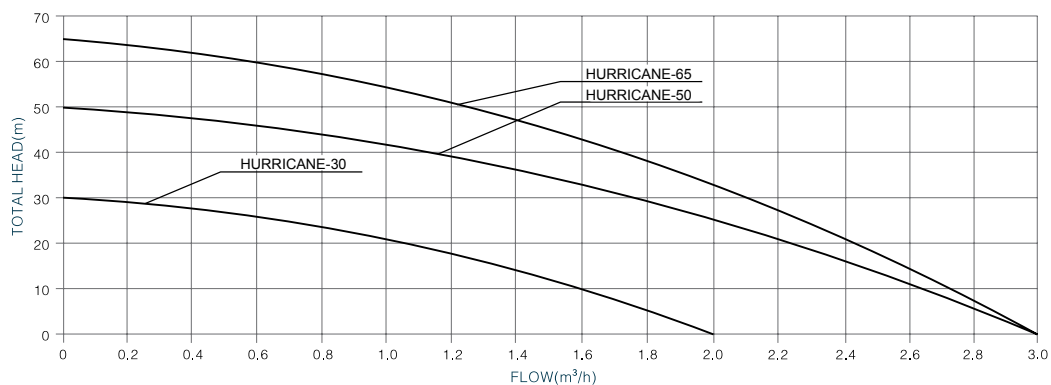


DC CONTROLLER

TECHNICAL DATA

ITEM	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage(VOC)	Power
HURRICANE-30	24V	30V-48V	280W	2m ³ /h	30m	1 x 1"	2m	<50V	≥1.3*PUMP POWER
HURRICANE-50	48V	60V-90V	550W	3m ³ /h	50m	1 x 1"	2m	<100V	≥1.3*PUMP POWER
HURRICANE-65	72V	90V-120V	750W	3m ³ /h	65m	1 x 1"	2m	<150V	≥1.3*PUMP POWER

HYDRAULIC PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

HURRICANE-30: 330W x 1 | HURRICANE-50: 330W x 2 | HURRICANE-65: 330W x 3

The Items Above Come Complete With An Installation Pack & 1 x Float Switch

Pumps To Be Primed Before Use

PLEASE BE ADVISED A WEATHERPROOF DC ISOLATOR MUST BE INCLUDED TO ISOLATE PANELS FOR MAINTENANCE.

REFER TO ODD16 to 32D/E2/E4/E22 FOR SELECTION ACCORDING TO APPLICATION

SOLAR POOL PUMPS

AZURE

DC BRUSHLESS SWIMMING
POOL SOLAR PUMP

NEW!



AZURE-15



AZURE-20



AZURE-27

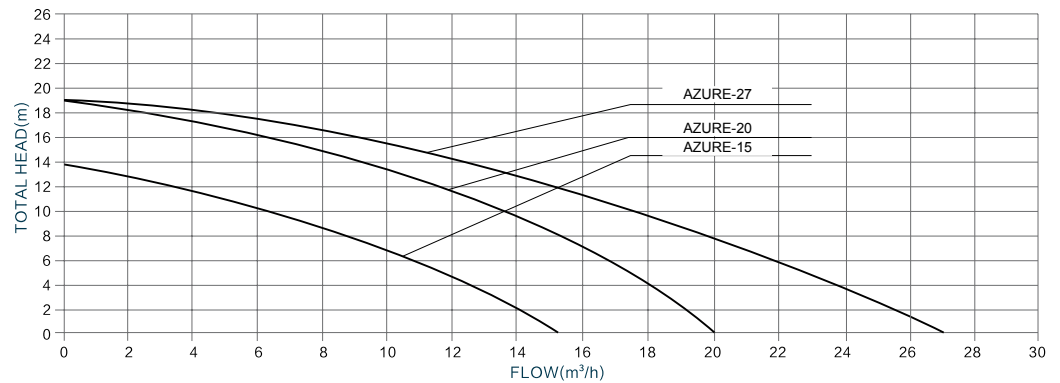


DC CONTROLLER

TECHNICAL DATA

ITEM	Voltage (DC ONLY)	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage(VOC)	Power
AZURE-15	48V	60V-90V	500W	15m³/h	14m	2X2"	2m	<100V	≥1.3*PUMP POWER
AZURE-20	72V	90V-120V	900W	20m³/h	19m	2X2"	2m	<150V	≥1.3*PUMP POWER
AZURE-27	110V	110V-150V	1200W	27m³/h	19m	3X3"	2m	<200V	≥1.3*PUMP POWER

PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

AZURE-15: 330W x 2 | AZURE-20: 330W x 3-6 Panels <50-150V | AZURE-27: 330W x 3-6 Panels <50-150V

The Items Above Come Complete With Pipe Fittings & An Installation Pack

Pumps To Be Primed Before Use

AZURE-DUO

AC/DC BRUSHLESS SWIMMING
POOL SOLAR PUMP

NEW!



AZURE-DUO-20



AZURE-DUO-27

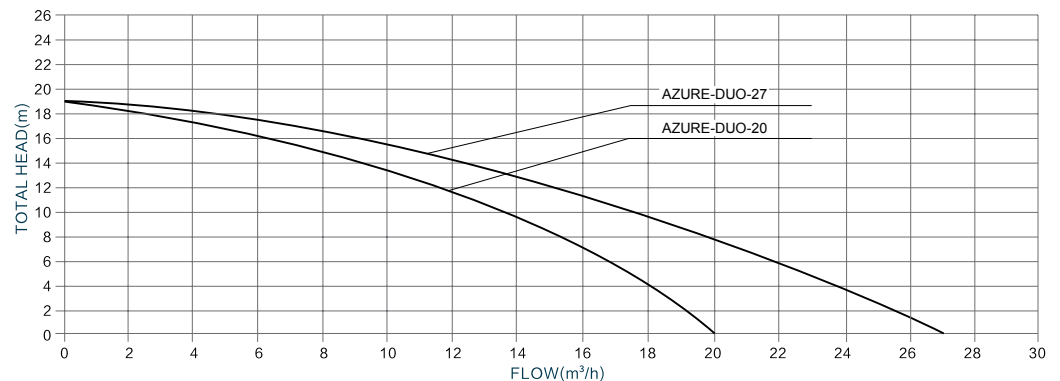


**AC/DC AUTO SWITCHING
CONTROLLER**

TECHNICAL DATA

ITEM	(AC) Voltage	(DC) Voltage	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage(VOC)	Power
AZURE-DUO-20	85V-280V	80V-420V	900W	20m³/h	19m	2X2"	2m	<420V	≥1.3*PUMP POWER
AZURE-DUO-27	85V-280V	80V-420V	1200W	27m³/h	19m	3X3"	2m	<420V	≥1.3*PUMP POWER

PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

AZURE-DUO-20: 330W x 4-7 Panels <420V | AZURE-DUO-27: 330W x 5-7 Panels <420V

The Items Above Come Complete With Pipe Fittings & An Installation Pack

Pumps To Be Primed Before Use

PLEASE BE ADVISED A WEATHERPROOF DC ISOLATOR MUST BE INCLUDED TO ISOLATE PANELS FOR MAINTENANCE.

REFER TO ODD16 to 32D/E2/E4/E22 FOR SELECTION ACCORDING TO APPLICATION



REPLACEMENT DC PUMP CONTROLLER

HBB-24

(24VDC) Controller Box - **Used With 24VDC Pumps**

CBB-36

(36VDC) Controller Box - **Used With 36VDC Pumps**

HBB-48

(48VDC) Controller Box - **Used With 48VDC Pumps**

TCB-50

(72VDC) Controller Box - **Used With 72VDC Pumps**

TCB-125

(110VDC) Controller Box - **Used With 110VDC Pumps**



PRESSURE SWITCH

SP-2A

- Pressure setting: 20-40 psi - (1.3 - 2.7 Bar)
- Rated current: 12A
- Rated voltage: 110V-240V
- Frequency: 50/60Hz
- Maximum ambient temperature: 40 C
- Maximum Medium Temperature: 60 C
- Protection Level: IP20

**Ideal To Use With Cyclone Borehole Pumps
For Stock Watering Applications.**

**Ensure That A Non-Return Valve Is Installed At The Inlet
Of The Borehole Pump To Keep The Pipe Pressurised.**





CYCLONE, TYPHOON, AQUA, HURRICANE & AZURE DC SOLAR PUMP CONTROLLER INSTRUCTIONS

DC SOLAR PUMP CONTROLLER



LED Indicator lights

- Voltage Light (V): Illuminates in Voltage Display mode
- Speed Light (RPM): Illuminates in Speed display mode
- Current Light (A): Illuminates in Current display mode
- Power Light (W): Illuminates in power mode
- Full water Light (Tank): Illuminates when tank is full
- Low Water Light (WELL): Illuminates when water supply is low
- Solar Mode light (MPPT): Illuminates when Solar is main Power Supply
- Power and Running Mode (POWER): Flashes When Not Working, Light Stays On Whilst Working.

Test Running the Pump:

Before testing the Pump The Control Box switch must be in the OFF position. If it is a submersible pump it must be under water at ALL TIMES and should have been Pre-conditioned for at least 15 minutes. The water is the lubrication for the pump and if it is not pre conditioned properly, the bearings will not be adequately lubricated. DO NOT attempt to start the Pump if it is not submerged in water as this will also permanently damage the pump and void the warranty. You will need a large Container/ Drum of suitable size to test the Pump correctly, as well as ensuring that it does not run dry so the pump outlet should be recycled back into the container to prevent this. NEVER use the Power cable to raise or Lower the pump. Rather attached a Durable Rope or Stainless steel cable to the top of the pumps using the mounting hole provided. Also Ensure the Rope/Cable is longer than the depth at which you wish to install the pump. Use this to raise and lower the pump, never the power cable.

ATTENTION

ALWAYS keep the submersible pumps under water at all times.

Ensure all electrical connections are correct.

Should the pump not be used for a long while it should be removed from the Well/Tank /Reservoir and the body and Screw should be wiped with a vegetable oil.

Ensure that the pump has adequate water around it during pumping.

NEVER run without water or run the pump out of the water, this will void the warranty.

Make sure to place your PV panels in a sunny position facing true north (In the Southern Hemisphere) or true South (in The Northern Hemisphere) and on the correct horizontal plane. If the panel angle is fixed than an angle equal to your current latitude will be a good compromise.

Pumps are made for Clear water Pumping only. Not to be used for Dirty water or Sewerage. Premature wear or Blockages will not be covered by the warranty

Do not disassemble the Pump or Control box as this will also void the warranty. Return it to the Supplier for inspection.

PUMP OPERATION MODE

Pump Start

- Power on - If no float switch is present the system starts by default, with a Float Switch connected the pump will operate according to the Float Switch Signal.
- Button to Start - If no Float Switch is present in the system, press the RUN Key. If there is a float switch connected the Pump will operate according to the Float Switch level.
- Low Tank Water Start - If there is no signal between WELL and COM and TL is closed the pump will start immediately. If there is no TL closure wait for 15 min.
- High Tank Water Start - If there is no signal between TH and COM and TL is getting a signal the Pump will start. Without Signal to TL wait 15 mins.

Pump Stop

- Float Switch Signal • Filling: When float switches full contact closes Pump will stop.
- Emptying: When Float Switch low signal contact closed pump will stop.
- Dry Pump Shutdown - If the current is less than the set current for 20 sec the motor will stop and Show Error P48. This will reset after 10 min of the fault being cleared.
- Stop Button - Pressing the ON/OFF Button will stop or start the motor.

Pump Operation

- On start up the unit check for DC (Battery) and PV (Solar) for 20 Sec then switches to relevant mode to run.
- DC Mode (Battery)
In DC (Battery) mode, the speed is adjustable and the range is 1 000 – 4 000 RPM. The default setting is 4 000 RPM. The speed can be set by the UP and DOWN Key. When DC voltage drops below the protection voltage it cuts off pump.

PV Mode

- PV mode is also adjustable same as the DC Mode (Max Speed 4 000 RPM). The running speed of the pump is determined by the output current of the Solar panel/s. The system tracks the output of the Solar panels in Real time (MPPT).
Sunny Day = High output | Cloudy day = Low output

The MPPT indicator flashes at a high frequency when the PV output is high and flashes Slowly when the PV Output is low. If the speed of the pump drops below 600 RPM the pump will stop and bring up P46 Error. The Unit will try and restart 5 times every 10 sec and then every 10 min.

When the PV voltage drops below Low voltage for 10 Sec, a PL Fault will be displayed. The unit will try to restart for 5 times every 10 sec and then every 10 min.

- DC Reverse Polarity Protection: If DC Supply polarity is reversed the Main Board and operation Panel indicators will not light up.
- Speed Setting: Start up Speed can be adjusted in Factory mode, but on power Down it reverts to Default setting.

How to set the Solar Pump RPM in memory

1. Firstly **Hold** the **Set** button until the controller shows **P0.0**
2. Then Press the **Enter** button & Press the **Up** or **Down** button until **12** is displayed
3. 3 Press Enter button then press **Up** from **P0.0** until **P0.9**, is achieved then press **Enter** again
4. Then use the Up and Down to set the desired pumps RPM required
5. Press **Enter** to lock your choice and then **hold** the **set** button until you exit the program.
The pump will then keep this RPM setting for every day and there will be no need to set everyday



AZURE DUO SOLAR POOL PUMP CONTROLLER INSTRUCTIONS

AC/DC SOLAR PUMP CONTROLLER



LED Indicator lights

- Voltage Light (V): Illuminates in Voltage Display mode
- Speed Light (RPM): Illuminates in Speed display mode
- Current Light (A): Illuminates in Current display mode
- Power Light (W): Illuminates in power mode
- Full water Light (Tank): Illuminates when tank is full
- Low Water Light (WELL): Illuminates when water supply is low
- Solar Mode light (MPPT): Illuminates when Solar is main Power Supply
- Power and Running Mode (POWER): Illuminated when running with DC, flashing means pump has stopped, and 5 sec Flashing is running on AC Power

PUMP OPERATION MODE

Pump Start

- Power on - If no float switch is present the system starts by default, with a Float Switch connected the pump will operate according to the Float Switch Signal.
- Button to Start - If no Float Switch is present in the system, press the RUN Key. If there is a float switch connected the Pump will operate according to the Float Switch level.
- Low Tank Water Start - If there is no signal between WELL and COM and TL is closed the pump will start immediately. If there is no TL closure wait for 15 min.
- High Tank Water Start - If there is no signal between TH and COM and TL is getting a signal the Pump will start. Without Signal to TL wait 15 mins.

Pump Stop

- Float Switch Signal • Filling: When float switches full contact closes Pump will stop.
- Emptying: When Float Switch low signal contact closed pump will stop.
- Dry Pump Shutdown - If the current is less than the set current for 20 sec the motor will stop and Show Error P48. This will reset after 10 min of the fault being cleared.
- Stop Button - Pressing the ON/OFF Button will stop or start the motor.

Pump Operation

- On start up the unit check for DC (Battery) and PV (Solar) for 20 Sec then switches to relevant mode to run.
- DC Mode (Battery)
In DC (Battery) mode, the speed is adjustable and the range is 1 000 – 4 000 RPM. The default setting is 4 000 RPM. The speed can be set by the UP and DOWN Key. When DC voltage drops below the protection voltage it cuts off pump.

PV Mode

- PV mode is also adjustable same as the DC Mode (Max Speed 4 000 RPM). The running speed of the pump is determined by the output current of the Solar panel/s. The system tracks the output of the Solar panels in Real time (MPPT).
Sunny Day = High output | Cloudy day = Low output

The MPPT indicator flashes at a high frequency when the PV output is high and flashes Slowly when the PV Output is low. If the speed of the pump drops below 600 RPM the pump will stop and bring up P46 Error. The Unit will try and restart 5 times every 10 sec and then every 10 min.

When the PV voltage drops below Low voltage for 10 Sec, a PL Fault will be displayed. The unit will try to restart for 5 times every 10 sec and then every 10 min.

- DC Reverse Polarity Protection: If DC Supply polarity is reversed the Main Board and operation Panel indicators will not light up.
- Speed Setting: Start up Speed can be adjusted in Factory mode, but on power Down it reverts to Default setting.

AC/DC SWITCHING STRATEGY

Independent Solar Power - When the PV (Solar) is above the minimum setting the unit switches to solar power

Simultaneous AC and DC Power Supply - When the PV (Solar) output is below the minimum setting, the unit switches to simultaneous AC and DC power.

Solar DC Power switches to simultaneous AC and DC - When in DC power status and the DC drops below set values for more than 60 sec the unit will switch to AC power

Simultaneous AC and DC switching to Solar DC Power Supply - When PV (Solar) output exceeds the set values for 15 min, the unit will switch back to solar DC power mode
When the AC power is off the unit switches to Solar DC.

AC Power incoming monitoring - When Solar is below running setting and AC power is off the unit will monitor for restoration of AC power in increments of first 5 min, then 15 min and lastly 30 min.

How to set the Solar Pump RPM in memory

1. Firstly **Hold** the **Set** button until the controller shows **P0.0**
2. Then Press the **Enter** button & Press the **Up** or **Down** button until **12** is displayed
3. 3 Press Enter button then press **Up** from **P0.0** until **P0.9**, is achieved then press **Enter** again
4. Then use the Up and Down to set the desired pumps RPM required
5. Press **Enter** to lock your choice and then **hold** the **set** button until you exit the program.

The pump will then keep this RPM setting for every day and there will be no need to set everyday