MOOV™
POOL PRODUCTS

MoovAiPumpMP10AIDV-MP15AIDV-MP165AIDV

-MP2AI

Inverter Pool Pump

Contents [hide]

MP2AI Ai Inverter Variable Speed Pool Pump

A little note from our side!

Thank you for trusting us!

We know how much your time is important and we wish you enjoy as much as possible your pool season. By choosing Moov Pool Products, you are selecting one of the most cutting-edge companies in the industry.

For over 30 years, pool pumps have known very little innovation until recently. The Moov Ai Pumps allies silence, performance, and ease of maintenance.

Please read this manual in real time and operate the product as detailed hereafter. Not following said indications could result in harm for individuals or damage to the product. For any question, feel free to reach out to Moov for technical support.

Welcome to Moov!

INSULATED WET END PUMP.

USE COPPER CONDUCTORS ONLY.

FOR USE WITH SWIMMING POOLS, HOT TUBS, AND SPAS.

CAUTION: CONNECT ONLY TO GROUNDING TYPE RECEPTACLE PROTECTED BY A CLASS A GROUND FAULT CIRCUIT INTERRUPTER.

CAUTION: TO ENSURE CONTINUED PROTECTION AGAINST SHOCK HAZARD, USE ONLY IDENTICAL REPLACEMENT PARTS WHEN SERVICING.

CAUTION: THIS PUMP IS FOR USE WITH PERMANENTLY-INSTALLED POOLS ONLY – DO NOT USE WITH STORABLE POOLS.

IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

1. READ AND FOLLOW ALL INSTRUCTIONS

2. WARNING – To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
3. WARNING – Risk of Electric Shock. Connect only to a branch circuit protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the circuit is protected by a GFCI.
4. The unit must be connected only to a supply circuit that is protected by a ground-fault circuit interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of an electric shock. Do not use this pump. Disconnect the pump and have the problem corrected by a qualified service representative before using it.
5. WARNING – To reduce the risk of electric shock, replace the damaged cord immediately.
6. CAUTION – This pump is for use with permanently-installed pools and may also be used with hot tubs and spas if so marked. Do not use it with storable pools. A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.
7. Do not install within an outer enclosure or beneath the skirt of a hot tub or spa.
8. A solid copper bonding conductor not smaller than 8 AWG (8.4 mm2) shall be connected from the accessible wire connector on the motor to all metal parts of the swimming pool, spa, or hot tub structure and to all electrical equipment, metal conduit, and metal piping within 5 feet (1.5 m) of the inside walls of a swimming pool, spa, or hot tub, when the motor is installed within 5 feet of the inside walls of the swimming pool, spa, or hot tub.
9. For Use With Swimming Pools, Hot Tubs, and Spas.
10. CAUTION: This Pump is for Use with Permanently-Installed Pools Only – Do Not Use with Storable Pools.
11. CAUTION: To reduce the risk of electric shock, install at least 6 feet from the inside walls of a pool. Do not use an extension cord.
12. CAUTION: To ensure continued protection against shock hazard, use only identical

replacement parts when servicing.

13. This pump is for use with permanently installed in-ground or above-ground swimming pools and may also be used with hot tubs and spas with a water temperature under 50℃. Due to the fixed installation method, this pump is not suggested to be used on above-ground pools that can be readily disassembled for storage.
14. The pump is not submersible.
15. Never open the inside of the drive motor enclosure.
16. SAVE THESE INSTRUCTIONS.

WARNING:

- Fill the pump with water before starting. Do not run the pump dry. In case of dry run, mechanical seal will be damaged and the pump will start leaking.
- Before servicing the pump, switch OFF power to the pump by disconnecting the main circuit to the pump and release all pressure from pump and piping system.
- Never tighten or loosen screws while the pump is operating.
- Ensure that the inlet and outlet of the pump are unblocked with foreign matter.

TECHNICAL SPECIFICATIONS

Model	Power (THP)	Amperage (A)	Voltage (V)	Frequency (Hz)	Qmax (US GPM)	Hmax (Ft)
MP10AIDV	0.85 THP	7.0A	115V	50/60	106	62
		3.5A	230V		106	
MP15AIDV	1.25 THP	8.3A	115V		110	66
		5.2A	230V		123	
MP165A1DV	1.65 THP	9.6A	115V		119	69
		6.5A	230V		132	
MP2AI	2.00 THP	8.0A	220-240V		178	75

OVERALL DIMENSION (mm)

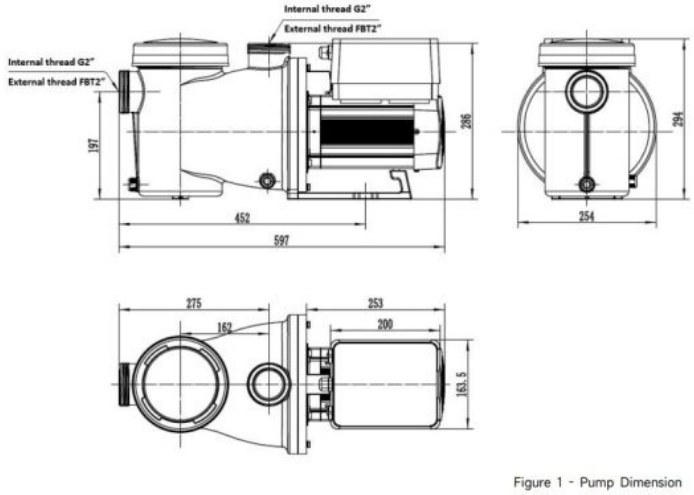


Figure 1 - Pump Dimension

INSTALLATION

4.1. Pump Location

1. Install the pump as close to the pool as possible, to reduce friction loss and improve efficiency, use short, direct suction and return piping.
2. To avoid direct sunshine, heat or rain, it is recommended to place the pump indoors or in the shade.
3. DO NOT install the pump in a damp or non-ventilated location. Keep pump and motor at least 150mm away from obstacles, pump motors require free circulation of air for cooling.
4. The pump should be installed horizontally and fixed in the hole on the support with screws to prevent unnecessary noise and vibration.

4.2. Piping

1. The pump inlet/outlet union size: optional with metric (48.3 or 60.3mm) or imperial (1.5” or 2”).
2. For optimization of the pool plumbing, a larger pipe size should be used. It is recommended to use a pipe with size of 2”.
3. When installing the inlet and outlet fittings (joints) with the pluming, use the special sealant for PVC material.
4. The dimension of suction line should be the same or larger than the inlet line diameter, to avoid pump sucking air, which will affect the pump’s efficiency.
5. To reduce friction loss and improve efficiency, plumbing on the suction and return side

should be short and direct.

6. Flooded suction systems should have valves installed in both the pump suction and return line, which is convenient for routine maintenance. A valve, elbow, or tee installed on the suction line should be no closer to the front of the pump than seven times the suction line diameter.
7. Use a check valve in the return line where there is a significant height between the return line and the outlet of the pump to prevent the pump from the impact of medium recirculation and pump-stopping water hammer.

4.3. Valves and Fittings

1. Elbows should be no closer than 350mm to the inlet. Do not install 90° elbows directly into the pump inlet/outlet. Joints must be tight.
2. Joints must be tight.

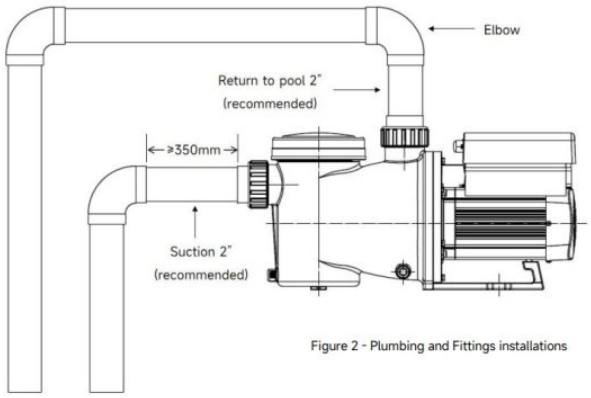


Figure 2 - Plumbing and Fittings installations

* The pump inlet/outlet union size: optional with metric (48.3 or 60.3mm) or imperial (1.5” or 2”)

3. Use the UNION KIT supplied by the pump manufacturer (Refer to Figure 3). Do not use other fittings to connect the pump inlet/outlet, in case the fittings are not match and damage the pump body.

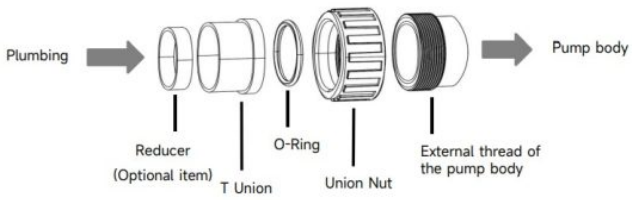


Figure 3 - Union Kit

4.4. Check before initial startup

1. Check whether pump shaft rotates freely;

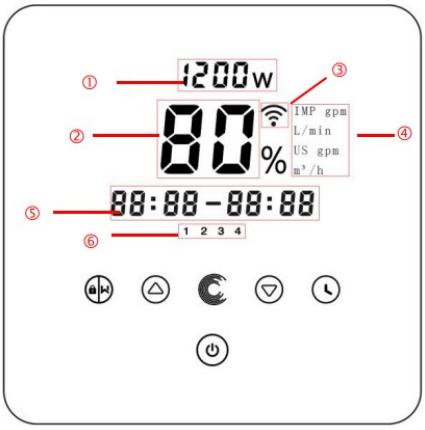
2. Check whether power supply voltage and frequency conform to the nameplate;
3. Facing the fan blade, the direction of motor rotation should be clockwise;
4. Do not run without water. Will the basket initially before starting the product.

4.5. Application conditions

Ambient temperature	Temperature range: -10~42℃
Maximum water temperature	50℃
Salt pools	Salt concentration up to 3.5%, i.e 35g/l
Humidity	≤90% RH, 20℃±2℃
Installation	The pump can be installed max. 2m above water leve l
Protection	Class F, IP55

SETTING AND OPERATION

5.1. Display on control panel



1. Power consumption
2. Running capacity / Flow rate
3. WIFI indicator
4. Unit of flow
5. Timer period
6. Timer 1/2/3/4

Backwash/unlock

Up/down: to change the value (capacity/flow/time)

Switch between Manual-Inverter Mode and Auto-Inverter Mode

Manual-Inverter Mode: The running capacity will be set manually between 30%-120%. Will be shown in percentage.

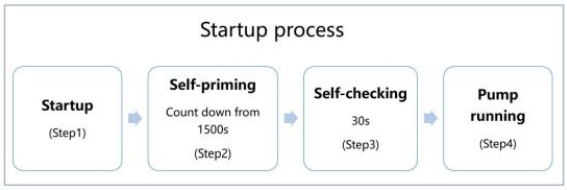
Auto-Inverter Mode: The running capacity will be automatically adjusted between 30%-120% according to the preset flow rate.

The default mode is Manual-Inverter mode.

Timer setting

On/off

5.2. Startup process overview



1. **Step 1 Startup**

   Press and hold for more than 3 seconds to unlock the screen.

   Press to startup the pump.

2. Step 2 Self-priming

   The pump will start counting down from 1500s; When the system detects the pump is full of water, it will stop counting down and exit priming automatically.

   Users can enter the parameter setting to disable the default self-priming function (see 5.10).

3. Step 3 Self-checking

   The pump will recheck for 30s again to make sure the self-priming Step2 is completed.

4. Step 4 Pump running

   The pump will run at 80% of the running capacity at the initial startup after the self-priming.

5.3. Startup

When the power is switched on, the screen will fully light up for 3 seconds, the device code will be displayed, and then it will enter the normal working state. When the screen

is locked, only the button will light up;

Press and hold for more than 3 seconds to unlock the screen. The screen will automatically lock up when there is no operation for more than 1 minute and the brightness of the screen will be reduced to 1/3 of the normal display. Short press to wake up the screen and observe the relevant operating parameters.

5.4. Self-priming

Each time the pump is started, it will start self-priming.

When the pump performs self-priming, it will count down start from 1500s and stop count down automatically when the system detects the pump is full of water, then the system will recheck for 30s again to make sure the self-priming is completed.

Users can cancel self-priming manually by pressing for more than 3 seconds. The pump will enter the default Manual Inverter mode at the initial startup.

Remark:

MP10AIDV, MP15AIDV, and MP165AIDV

The pump is delivered with self-priming enabled. Each time the pump restarts, it will perform self-priming automatically. Users can enter the parameter setting to disable the default self-priming function (see 5.10)

MP2AI

1. The pump is delivered with self-priming enabled. Each time the pump restarts, it will perform self-priming automatically. Users can enter the parameter setting to disable the default self-priming function (see 5.10)
2. If the default self-priming function is disabled, and the pump has not been used for a long time, the water level in the strainer basket may drop. Users can manually activate the self-priming function by pressing both for 3 seconds, the adjustable period is from 600s to 1500s (default value is 600s).
3. After the manual self-priming is completed, the pump will return to the previous state before activating the manual self-priming. If the pump has entered the Auto Inverter mode previously, the pump will perform self-learning for 180s to redefine the adjustable flow range after the manual self-priming.
4. Users can press for more than 3 seconds to cancel the manual self-priming, and the pump will run the same as the manual self-priming is completed.

5.5. Backwash

User can start the backwash or fast re-circulation in any running state by pressing

	Default	Setting range
Time	180s	Press or to adjust from 0 to 1500s with 30 seconds for each step
Running capacity	100%	MMOAIDV, MP15AIDV, and MP165AIDV: 60-100%, enter the parameter setting (see 5.10)
		MP2AI: 80-100%, enter the parameter setting (see 5.10)

Exit backwash:

When backwash mode is on, user can hold for 3 seconds to cancel it, the pump will return to the previous state before backwash. If a speed limit is set by the user, the running capacity of the backwash will not exceed the set speed limit.

5.6. Manual-Inverter Mode (Easiest operating mode)

1		Hold for more than 3 seconds to unlock the screen;
2		Press to start. The pump will run at 80% of the running capacity after self-priming.
3		Press or to set the running capacity between 30%~120%, each step by 5%
4		Press again to switch to Auto-Inverter mode.

Note:

1. When the pipeline resistance is too high, to maintain an adequate flow rate, users can set the running capacity to 105%-120%. The pump will run at a higher speed but will not exceed the rated power of each model.

2. If the pump has reached the rated power at 105% and users continues to increase the running capacity, the display will return to 105% when the motor speed is stabilized. again to switch to Auto-Inverter mode. or to set the running capacity between 30%~120%, each step by 5% to start. The pump will run at 80% of the running capacity after for more than 3 seconds to unlock the screen;

5.7. Auto-Inverter Mode (Advanced users)

Under Auto Inverter Mode, the pump can automatically detect the system pressure and adjust the speed of motor to reach the set flow.

1		Unlock the screen, press  to switch from the Manual-Inverter mode to Auto-Inverter mode.
2		The flow rate could be adjusted, by pressing  or  with 5 US GPM for each step.
3		The unit of flow rate could be changed to LPM, IMP GPM or m3/h, by pressing both  for 3 seconds
4		Press  to switch to Manual-Inverter mode

The default adjustable flow range for Moov Ai Pump is as below:

Model	**Default adjustable flow rate range**
MP10AIDV	35-90 US GPM
MP15AIDV	35-110 US GPM
MP165AIDV	35-130 US GPM
MP2AI	35-160 US GPM

Self-learning (Only suitable for MP2AI):

When first switching to the Auto Inverter mode, the system will perform the self-priming process (see 5.4) and then the self-learning process for 180s and redefine the

adjustable flow range of the pump by detecting the pipeline pressure.

eg: the default adjustable flow range of Moov Ai MP2AI is 35-160 US GPM, after self-learning, the range may be redefined to 35-130 US GPM. If the set flow is beyond the current adjustable range, the actual achievable flow rate will be displayed after the motor speed is stabilized.

Note:

1. After the first self-priming, the pump will redefine the adjustable flow range. The pipeline pressure will be recorded by the system after the pump runs at the set flow/capacity for 5 minutes without other operations.
2. During the pump running, if it is detected that the pipeline pressure changes beyond a certain range, the icon of % or m^3/h (or other flow units) symbol will flash for 5 minutes. If the change lasts for 5 minutes, the pump will perform a self-priming and self-learning process, and redefine the flow range accordingly.
3. After the redefinition of the flow range, the pump will automatically adjust the running capacity to reach the set flow.
4. Users can set the time interval to trigger the self-leaning automatically in the parameter setting (see 5.10) to ensure the accuracy of the flow rate.

5.8. Timer mode

The pump's on/off and running capacity could be commanded by timer, which could be programmed daily as needed.

1	Enter timer setting by pressing
2	Press or to set the local time.
3	Press to confirm and move to time-1 setting.
4	Press or to choose the desired running periods, running capacity or f low rate (when % icon is flashing, user can change to set the flow rate by pres sing).

5	Repeat above steps to set other 3 timers.
6	Hold 3 seconds to save setting and activate timer mode.
7	or Check 4 timers to make sure there is no invalid setting.

Note:

1. When timer mode is activated, if the set time period contains the current time, the pump will start running according to the set running capacity or flow rate. If the set time period does not contain the current time, the timer number 1 2 3 4 (or 1 or 2 or 3 or 4) that is about to start running will be displayed on the controller and flash, 88:88-88:88 will display the corresponding time period, indicating a successful timer setting.
2. During timer setting, if you want to return to the previous setting, hold both or for 3 seconds. If you don't need to set all 4 timers, you can hold for 3 seconds, the system will automatically save the current set value and activate the timer mode.
3. Users can cancel the timer mode by pressing C

5.9. Winterizing

In cold climate environments where the pools are closed for winter, the pump must be drained from the strainer and the pump housing. Both unions must be disconnected and the pump may be covered and protected from the snow fall or disconnected and kept indoor for protection. Warranty calls on unproperly winterization will not be covered by warranty.

5.10. Parameter Setting

Restore factory setting	Under off mode, hold both for 3 seconds
Check the software version	Under off mode, hold both for 3 seconds

Enter parameter setting as below	Under off mode, hold both  or  for 3 seconds; If current address does not need to be adjusted, hold both  or  press to next address  to next address

Parameter Address	**Description**	**Default Setting**	**Setting Range**
1	Dig (Digital input 2)	100%	MP10AIDV, MP15AIDV, and MP165AIDV: 1.Speed: 30-120%, by 5% increments; 2.Flow: MP10AIDV: 35-90 US GPM, MPI5AIDV: 35-110 US GPM. MP165AIDV: 35-130 US GPM, by 5 US GPM increments; Note: Press  to switch to flow rate setting. MP2AI: Speed: 30-120%, by 5% increments.
2	Di3 (Digital input 3)	80%	
3	Di4 (Digital input 4)	40%	

4	Backwash capacity	100%	MP10AIDV, MP15AIDV, and MP165AIDV: 1.Speed: 60-100%. by 5% increments: 2.Flow: MPIOAIDV: 55-90 US GPM, MPI5AIDV: 65-110 US GPM, MP165AIDV: 80-130 US GPM. by 5 US GPM increments: Note: Press  to switch to flow rate setting. MP2AI: Speed: 80-100%, by 5% increments.
5	Control mode of Analog Input	0	0: Current control 1: Voltage control

6	Enable or disable the self-priming at each start	25	25: enables 0: disables
7	Reserved	0	Not editable
8	System time	0:00	00:00 – 23:59

9	Preset 1 of the skimmer mode (skimmer cycle. skimmer duration. skimmer speed or flow)	01:00 00:03 100%	‘Skimmer cycle: 1-24h. lh for each step; ‘Skimmer duration: 1-30min, 1min for each step: ‘Skimmer speed: 30%-100% by 5% increments: ‘Skimmer flow (only the following models can adjust): MPlOAIDV: 35-90 US GPM. MPISAIDV: 35-110 US GPM. MP165AIDV: 35-130 US GPM. by 5 US GPM increments; Note: Press  to switch to flow rate setting
10	Time period of the preset 1 of the skimmer mode	7:00- 21:00	Start time: 00:00-24:00 End time: 00:00-24:00
11	Speed limit	100%	MPlOAIDV, MPISAIDV, and MP165AIDV: 1.Speed: 60%-100%. by 5% increments (100% means no speed limit) 2.Flow: MPlOAIDV: 55.90 US GPM. MP15AIDV: 65-110 US GPM. MP165AIDV: 80-130 US GPM. by 5 US GPM increments: Note: Press  to switch to flow rate setting. MP2AI: Speed: 60%-100%. by 5% increments (100% means no speed limit)
12	RS485 address	170(0xAM	160-190 (OxA0-0x8F). each step by 1.

13	Reserved (Suitable for MPIOAIDV, MP15AIDV, MP165AIDV)	0	Not editable
	Time intervals to trigger the self-learning automatically (Suitable for MP2A1)	0	0, 1. 3. 5. 7. 14. 21. 28 (day) (.0′ means will not trigger the self-learning automatically)

For example: How to Enable/Disable Self-Priming Function?

1. Enter parameter setting: Under off mode, hold both or for 3 seconds;
2. Select parameter address: Press to address 6;
3. Enable or disable the self-priming at each start: Adjust by pressing or 25= Enables,
   0=Disables.

WIFI OPERATION

Download MOOV POOL APP

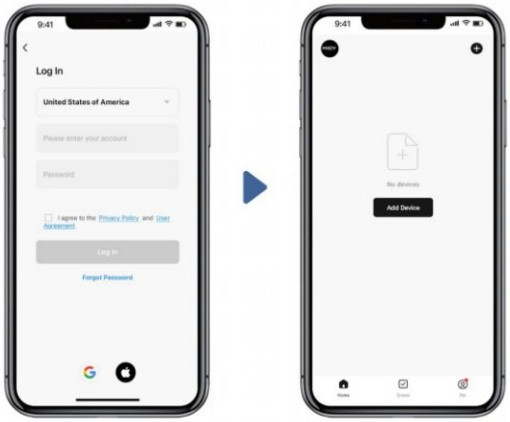
Android

iOS

Account Registration

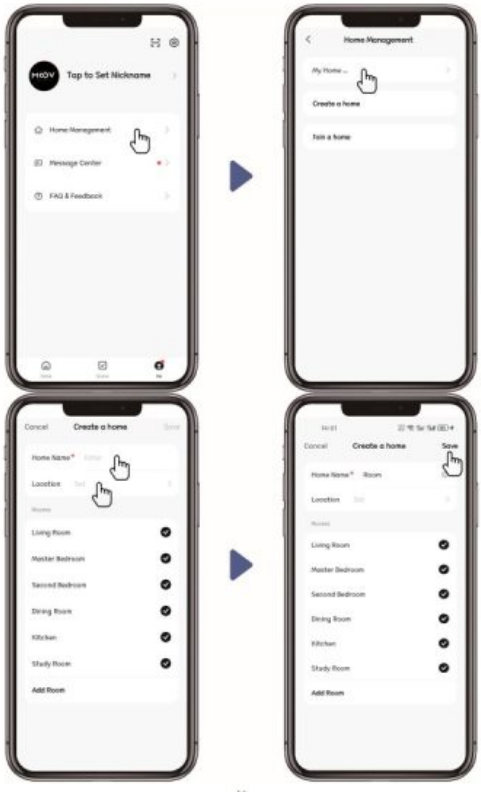
Register by e-mail or third-party application.

a. Email/iOS Registration



Create Home

Please set home name and choose the location of the device. (It is recommended to set the location so the weather can be shown in the App for your convenience)



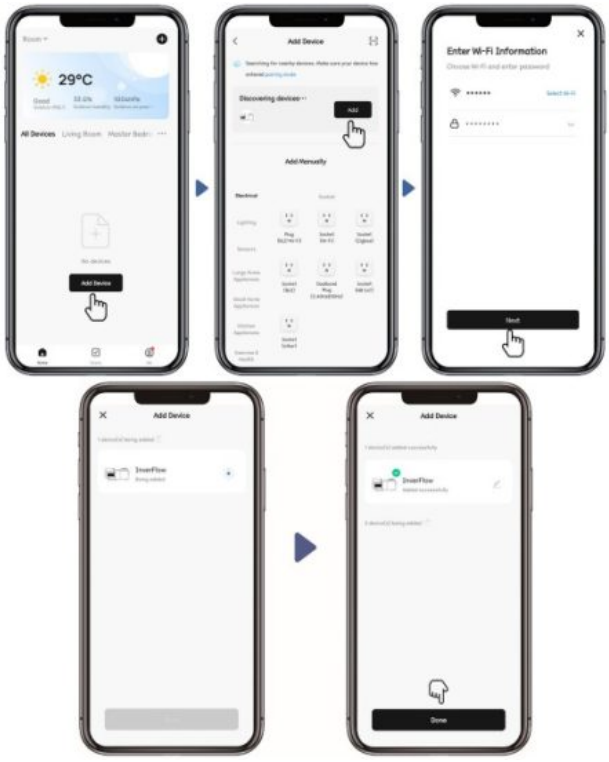
App pairing

Please make sure your pump is turned on before you start.

Option 1 (Recommended): With Wifi and Bluetooth

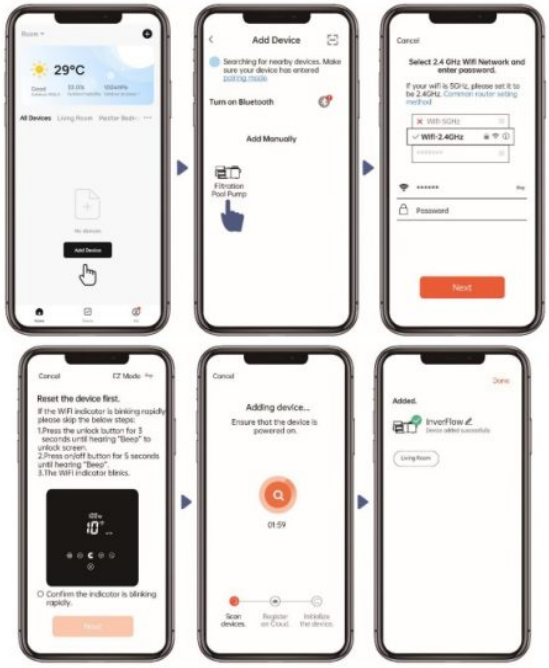
(Network requirement: 2.4GHz; 2.4Ghz and 5GHz into one SSID; but no separate 5GHz network)

1. Please confirm that your phone is connected to Wifi and your Bluetooth is on.
2. Press for 3 seconds until hearing “Beep” to unlock the screen. Press for 5 seconds until hearing “Beep” then release. Will flash.
3. Click “Add Device”, and then follow the instructions to pair device.



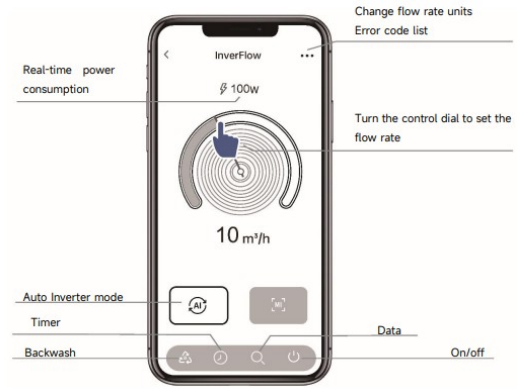
Option 2: With Wifi (Network requirement: 2.4GHz only)

1. Please confirm that your phone is connected to Wifi.
2. Press for 3 seconds until hearing “Beep” to unlock the screen. Press for 5 seconds until hearing “Beep” then release. Will flash.
3. Click “Add Device”, and then follow the instructions to pair device.

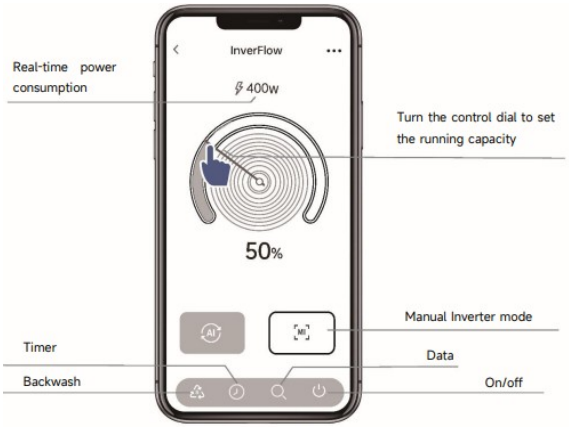


Operation

1. Using Auto Inverter mode:



2. Using Manual Inverter mode:



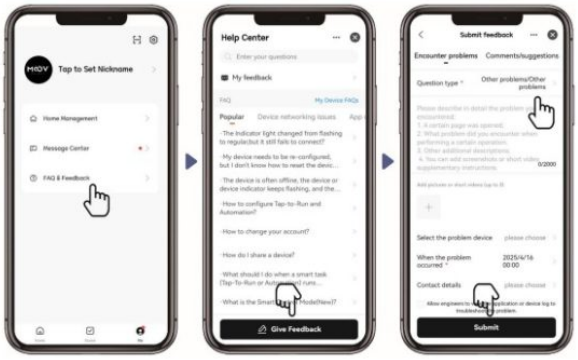
Sharing Devices with your family members

After pairing, if your family members also want to control the device, please let your family members register “InverFlow” first, and then the administrator can operate as

below:

Feedback

If you have any problem while using, welcome to send feedback.



Notice:

1. Weather forecast is just for reference;
2. The power consumption data is for reference only, as it may be affected by network problems and imprecision of the calculation;
3. App is subject to updates without notice.

EXTERNAL CONTROL

External control can be enabled via following contacts. If more than one external control is enabled, the priority is as below: Digital Input > RS485 > Panel control.

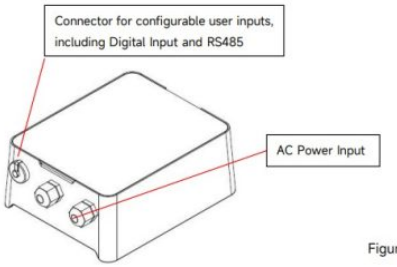


Figure 4 - Connector port location

1. AC power input-Power cord connection

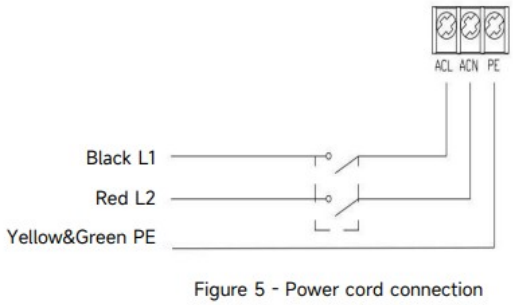


Figure 5 - Power cord connection

2. Digital input and RS485 connection

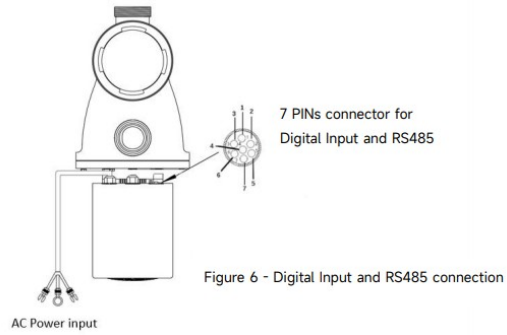


Figure 6 - Digital Input and RS485 connection

External Control	Color	Description
Digital Input	Red	Di4 (Digital Input 4)
	Black	Di3 (Digital Input 3)
	White	Di2 (Digital Input 2)
	Grey	Di1 (Digital Input 1)
	Yellow	Digital Ground (COM)
RS485	Green	RS485-A
	Brown	RS485-B

a. Digital input

Running capacity is determined by the state of digital input,

1. When Di1(Grey) connects with COM(Yellow), the pump will be mandatory to stop; if disconnected, the digital control will be invalid;
2. When Di2(White) connects with COM(Yellow), the pump will be mandatory to run at

100%; if disconnected, the control priority will be back on panel control;

3. When Di3(Black) connects with COM(Yellow), the pump will be mandatory to run at 80%; if disconnected, the control priority will be back on panel control;
4. When Di4(Red) connects with COM(Yellow), the pump will be mandatory to run at 40%; if disconnected, the control priority will be back on panel control;
5. The capacity of inputs (Di2/Di3/Di4) could be modified according to the parameter setting.

b. RS485

To connect with RS485-A(Green) and RS485-B(Brown), the pump could be controlled via Modbus 485 communication protocol.

PROTECTION AND FAILURE

8.1. High Temperature Warning and Speed Reduction

In “Auto Inverter/Manual Inverter Mode” and “Timer mode” (except backwash/self-priming), when the module temperature reaches the high-temperature warning trigger threshold (81℃), it enters the high-temperature warning state; when the temperature drops to the high-temperature warning release threshold (78℃), the high-temperature warning state is released. The display area alternately displays AL01 and running speed or flow.

If AL01 is displayed for the first time, the running capacity will be automatically reduced as below:

1. If current operating capacity is higher than 100%, the running capacity will be automatically reduced to 85%;
2. If current operating capacity is between 85% and 100%, the running capacity will be automatically reduced by 15%;
3. If current operating capacity is between 70% and 85%, the running capacity will be automatically reduced by 10%;
4. If current operating capacity is lower than 70%, the running capacity will be automatically reduced by 5%.

8.2. Under voltage protection

MP10AIDV, MP15AIDV, and MP165AIDV

The device is compatible with both 230V and 115V AC power input.

1. AC Power Input 230V
   When the device detects that the input voltage is less than 198V, the device will limit the current running speed. The display area alternately displays AL02 and running speed or flow.
   1) When input voltage is less than or equal to 180V, the running capacity will be limited to 70%;
   2) When the input voltage range is within 180V – 190V, the running capacity will be limited to 75%;
   3) When the input voltage range is within 190V – 198V, the running capacity will be limited to 85%.
2. AC Power Input 115V
   When the device detects that the input voltage is less than 98V, the device will limit the current running speed.
   The display area alternately displays AL02 and running speed or flow.
   1) When the input voltage range is within 85V – 90V, the running capacity will be limited to 75%;
   2) When the input voltage range is within 90V – 98V, the running capacity will be limited to 85%.

Note If the input voltage is less than 85V, error code E001(Abnormal Input Voltage, see 8.4) will be displayed.

MP2AI

When the device detects that the input voltage is less than 197V, the device will limit the current running speed. The display area alternately displays AL02 and running speed or flow.

1. When input voltage is less than or equal to 180V, the running capacity will be limited to 70%;
2. When the input voltage range is within 180V – 190V, the running capacity will be limited to 75%;
3. When the input voltage range is within 190V – 197V, the running capacity will be limited to 85%.

8.3. Trouble shooting

Problem	Possible causes and solution
Pump does not start	•Power Supply fault, disconnected or defective wiring. •Fuses blown or thermal overload open. •Check the rotation of the motor shaft for free movement and lack of obstruction. •Because of long time lying idle. Unplug the power supply and manually rotate motor rear shaft a few times with a screwdriver.
Pump does not prime	•Empty pump/strainer housing. Make sure the pump/strainer housing is f illed with water and the 0 ring of cover is clean. •Loose connections on the suction side. •Strainer basket or skimmer basket loaded with debris. •Suction side clogged. •Distance between pump inlet and liquid level is higher than 2m, the inst allation height of pump should be lowered.
Low Water Flow	•Pump does not prime. •Air entering suction piping. •Basket full of debris. •Inadequate water level in pool.
Pump bein g noisy	•Air leak in suction piping, cavitation caused by restricted or undersized suction line or leak at any joint, low water level in pool, and unrestricted discharge return lines. •Vibration caused by improper installation, etc. •Damaged motor bearing or impeller (need to contact the supplier for re pair).

8.4. Error code

MP10AIDV, MP15AIDV, and MP165AIDV

When the device detects a failure, it will stop automatically and display the error code. After stopping for 15 seconds, check if the failure is cleared. If cleared, the pump will

resume working.

Item	Error Code	Details	
1	E001	Description	Abnormal input voltage: the power supply voltage is out of the range of 165V to 27W.
		Process	The pump will stop automatically for 15 sec and resume working if it detects the power supply voltage is within the range.
2	E002	Description	Output over current: The peak current of the pump is higher than the protection current.
		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for thrice continuously, the pump will shut down and need to be checked and restarted manually.
3	E102	Description	Heat sink error : The heat sink temperature reaches 91°C for 10sec. Or the heat sink sensor detects an open or short circuit.
		Process	1.The pump will stop automatically for 30 sec and resume working if it detects the heat sink temperature is less than 81°C. 2.The pump will stop automatically for 15 sec and resume working if it detects the heat sink sensor is not open or short circuit.
4	E103	Description	Master driver board error: The Master driver board is faulty.

		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for thrice continuously, the pump will shut down and need to be checked an d restarted manually.
5	E104	Description	Phase-deficient protection: Motor cables are not plugged into the master drive board.
		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for thrice continuously, the pump will shut down and need to be checked an d restarted manually.
6	E201	Description	Circuit board error: When the pump power off, the bi as voltage of the sampling circuit is out of the range of 2.4V-2.6V.
		Process	The pump needs to be powered off and restarted m anually.
7	E203	Description	RTC time reading error: Reading and writing the info rmation of timer clock is incorrect.
		Process	The pump needs to be powered off and restarted m anually.
8	E204	Description	Display Board EEPROM reading failure: Reading an d writing the information of display board EEPROM i s incorrect.
		Process	The pump needs to be powered off and restarted m anually.
9	E205	Description	Communication Error: The communication between display board

			and master driver board is failure lasts 15 sec.
		Process	The pump will stop automatically for 15 sec and resume working if it detects the communication between display board and master driver board lasts 1 sec.
10	E207	Description	No water protection: The pump is lack of water.
		Process	Stop the pump manually, fill up the pump with water and restart it. If this occurs for twice continuously, the pump will shut down and need to be checked manually.
11	E209	Description	Loss of prime: The pump cannot self-priming due to the reasons such as exceeding the suction range or the pipeline is too complicated.
		Process	Check the pump or pipeline that there is no leakage, and then fill up the pump with water and restart it.

MP2AI

When the device detects a failure, it will stop automatically and display the error code. After stopping for 15 seconds, check if the failure is cleared. If cleared, the pump will resume working.

Item	**Error Code**	**Details**	
1	E001	Description	Abnormal input voltage: the power supply voltage is out of the range of 16W to 275V.
		Process	The pump will stop automatically for 15 sec and resume working if it detects the power supply voltage is within the range.

2	E002	Description	Output over current: The peak current of the pump is higher than the protection current.
		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for three times continu ously, the pump will shut down and need to be check ed and restarted manually.
3	E101	Description	Heat sink overheat: The heat sink temperature reach es 91°C for lOsec.
		Process	The pump will stop automatically for 30 sec and resu me working if it detects the heat sink temperature is l ess than 81°C.
4	E102	Description	Heat sink sensor error: The heat sink sensor detects an open or short circuit.
		Process	The pump will stop automatically for 15 sec and resu me working if it detects the heat sink sensor is not open or short circuit.

5	E103	Description	Master driver board error: The Master driver board is faulty.
		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for three times continu ously, the pump will shut down and need to be checked and restarted manually.
6	E104	Description	Phase-deficient protection: Motor cables are not plugged into the master drive board.

		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for three times continuously, the pump will shut down and need to be checked and restarted manually.
7	E105	Description	AC current sampling circuit failure: When the pump power off, the bias voltage of the sampling circuit is out of the range of 2.4V-2.6V.
		Process	The pump needs to be powered off and restarted manually.
8	E106	Description	DC abnormal voltage: The DC voltage is out of the range of 210V to 420V.
		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for three times continuously, the pump will shut down and need to be checked and restarted manually.
9	E107	Description	PFC protection: PFC protection occurs on the Master driver board.
		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for three times continuously, the pump will shut down and need to be checked and restarted manually.
10	E108	Description	Motor power overload: Motor power exceeds the rated power by 1.2 times
		Process	The pump will stop automatically for 15 sec and then resume working, if this occurs for three times continuously, the pump will shut down and need to be checked and restarted manually.

11	E201	Description	Circuit board error: When the pump power off, the bi as voltage of the sampling circuit is out of the range of 2.4V-2.6V.
		Process	The pump needs to be powered off and restarted m anually.
12	E203	Description	RTC time reading error: Reading and writing the info rmation of timer clock is incorrect.
		Process	The pump needs to be powered off and restarted m anually.
13	E204	Description	Display Board EEPROM reading failure: Reading an d writing the information of display board EEPROM i s incorrect.
		Process	The pump needs to be powered off and restarted m anually.
14	E205	Description	Communication Error: The communication between display board and master driver board is failure lasts 15 sec.
		Process	The pump will stop automatically for 15 sec and resu me working if it detects the communication between display board and master driver board lasts 1 sec.
15	E207	Description	No water protection: The pump is lack of water.
		Process	Stop the pump manually, fill up the pump with water and restart it. If this occurs for twice continuously, th e pump will shut down and need to be checked man ually.

16	E209	Description	Loss of prime: The pump cannot self-priming due to t he reasons such as exceeding the suction range or t he pipeline is too complicated.
		Process	Check the pump or pipeline that there is no leakage, and then fill up the pump with water and restart it.

MAINTENANCE

Empty the strainer basket frequently. The basket should be inspected through the transparent lid and emptied when there is an evident stack of rubbish inside. The following instructions should be followed:

1. Disconnected the power supply.
2. Unscrew the strainer basket lid anti-clockwise and remove.
3. Lift up the strainer basket.
4. Empty the trapped refuse from the basket, rinse out the debris if necessary.
   Note: Do not knock the plastic basket on a hard surface as it will cause damage
5. Inspect the basket for signs of damage, replace it.
6. Check the lid O-ring for stretching, tears, cracks or any other damage.
7. Replace the lid, hand tightening is sufficient.
   Note: Periodically inspecting and cleaning the strainer basket will help prolong its life.

WARRANTY& EXCLUSIONS

Please note that the warranty begins at the time of purchase. If this purchase is delayed such as on a new pool build or installation will be delayed, the installation date must be proved with appropriate documentation to have the warranty start at the time of installation. Warranty is only valid upon first install.
Some claims will not be approved under any circumstances by Moov Pool Products. Such claims include and are not limited to:

- – Pump broken due to unproper winterization. Appropriate winterization can be found on Moov Pool Products website or on page 10 of this manual. Any other winterization default claims will be refused.

- Pump damaged by meteorological events such Hurricanes, Tornados, Hail, Earthquakes and any other act of god event.
- Units not installed by an appropriate technician. The trade job of these technicians will vary depending on the region of the install and can include HVAC technicians or electricians. Electrical wiring or product manipulations are included.

  Any unsatisfactory claim. Pumps efficiency will vary depending on various factors such as length of pipes, filters, internal pressure, pool size, and much more. Please always refer to your pool expert to select the right unit tailored to your needs or contact Moov Pool Products for a recommendation.

All warranty claims must be approved by an authorized Moov Pool Products employee. For more information on warranties or to submit a claim, contact Moov Pool Products.

Moov Pool Products

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www.moovsa.com

The factory reserves the final interpretation right and keep the right to stop or change product specification and design without prior notice at any time, no need to bear the resulting obligations.

DISPOSAL

 When disposing the product, please sort the waste products as electrical or electronic product waste or hand it over to the local waste collection system.

The separate collection and recycling of waste equipment at the time of disposal will help ensure that it is recycled in a manner that protects human health and the environment.

Contact your local authority for information on where you can drop off your water pump for recycling.

MOOV™
POOL PRODUCTS

Documents / Resources

	MOOV MP2AI Ai Inverter Variable Speed Pool Pump [pdf] Instruction Manual MP10AIDV, MP15AIDV, MP165AIDV, MP2AI, MP2AI Ai Inverter Variable Speed Pool Pump, MP2AI, Ai Inverter Variable Speed Pool Pump, Variable Speed Pool Pump, Speed Pool Pump, Pool Pump

References

- User Manual

MOOV

Ai Inverter Variable Speed Pool Pump, Moov, MP10AIDV, MP15AIDV, MP165AIDV, MP2AI, MP2AI Ai Inverter Variable Speed Pool Pump, Pool Pump, Speed Pool Pump, Variable Speed Pool Pump

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