# CVS-AAP (Automation Adapter Panel)

Installation Manual and User's Guide

The Automation Adapter panel allows the ability to operate a motor with a 3rd party automation system. The panel is compatible with most pool automation systems on the market. This allows the user to control and experience the full variable speed capability of the pump through a new or existing automation system.

⚠ WARNING

Access to the connections referenced in the diagrams below could be in close proximity to mains connections which carry line voltage capable of causing personal injury or damaging the equipment if contact is made. Power should be turned off when accessing these areas.

System

AUTOMATION ADAPTER PANEL
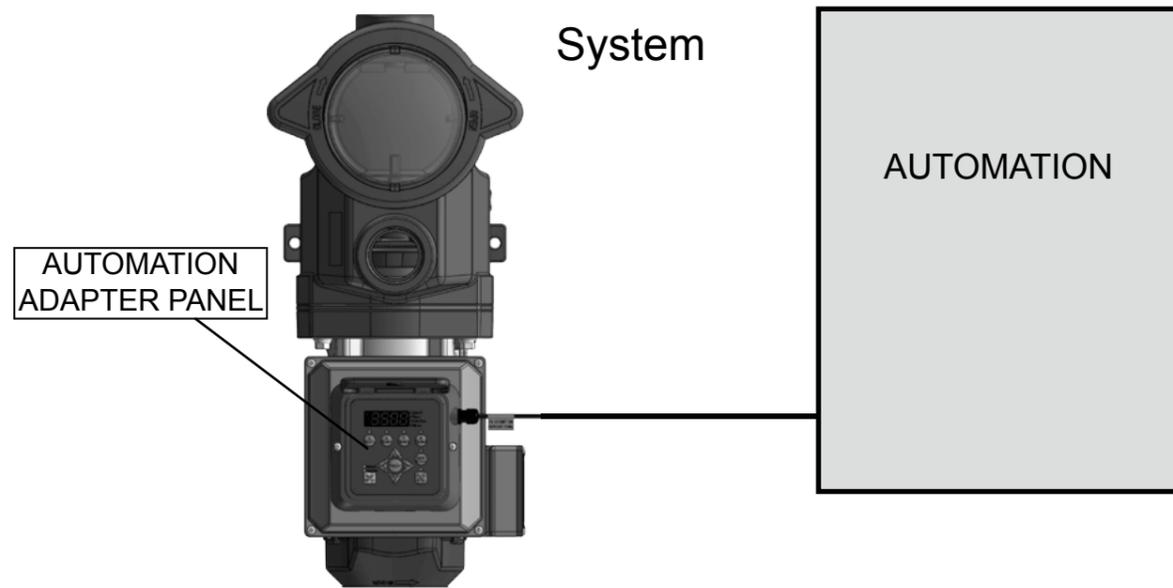
AUTOMATION

CONECTING TO A VARIABLE MOTOR

⚠ WARNING

The automation adapter must be wired according to the locally adopted version of the NEC or CEC. A licensed, qualified electrician should complete the wiring for this product. Failure to comply with this may result in death, serious personal injury or property damage.

External Relay Speed Control Wiring (For remote selection of pump speed)
Note: 1.For third party controls that are NOT software compatible.

2.All setting should be based on "manual or Schedule"mode.


Remote control scheme 1
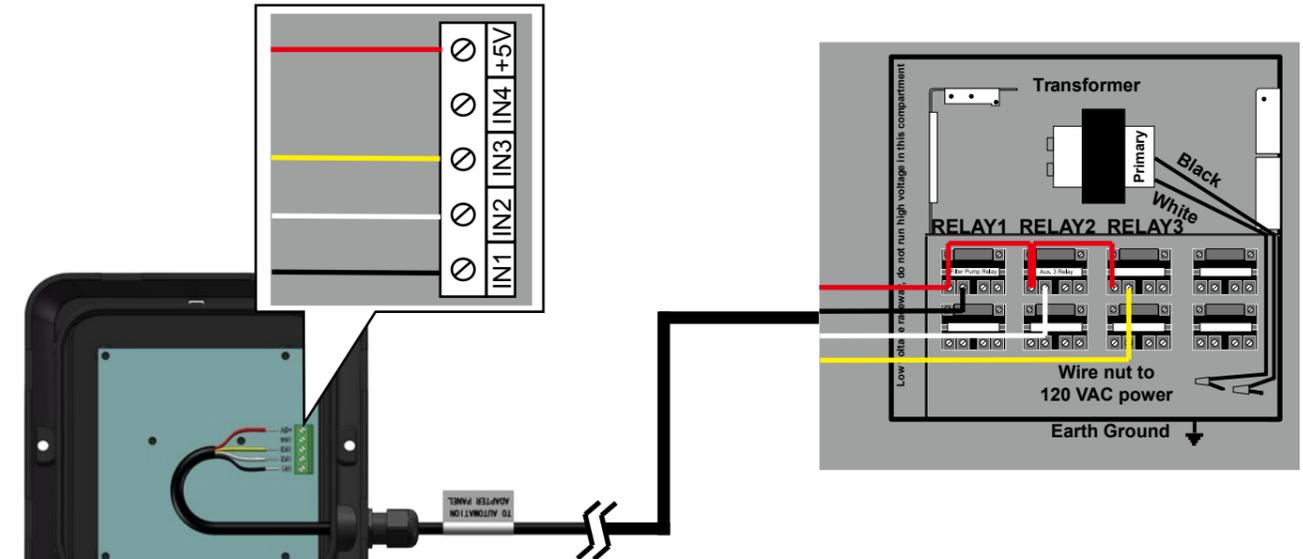
Mode	RELAY	IN1	IN2	IN3		Default Speed(RPM)
manual or Schedule	1	ON	OFF	OFF	SPEED1	3000
	2	OFF	ON	OFF	SPEED2	1500
	3	OFF	OFF	ON	SPEED3	2500

IN1/IN2/IN3 is controlled by 3 external relays. After the relay is pull-in in one of IN1/IN2/IN3, the running time corresponding to the speed can be realized. The speed is completed on the pump operation panel. Refer to the **"Programming a Custom Schedule 1-14"** for the specific operation steps.

EXAMPLE: Set start time and end time for every relay on external Automation panel:
IN1→RELAY1:Start AM 8:00-Stop AM10:00 Operating speed 3000RPM.
IN2→RELAY2:Start AM 11:00-Stop PM 1:00 Operating speed 1500RPM.
IN3→RELAY3:Start PM 2:00-Stop PM10:00 Operating speed 2500RPM.
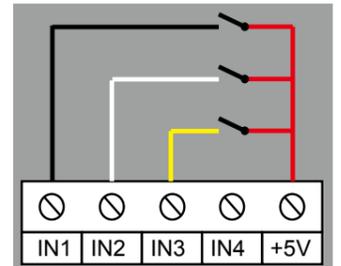
Remote control scheme 2
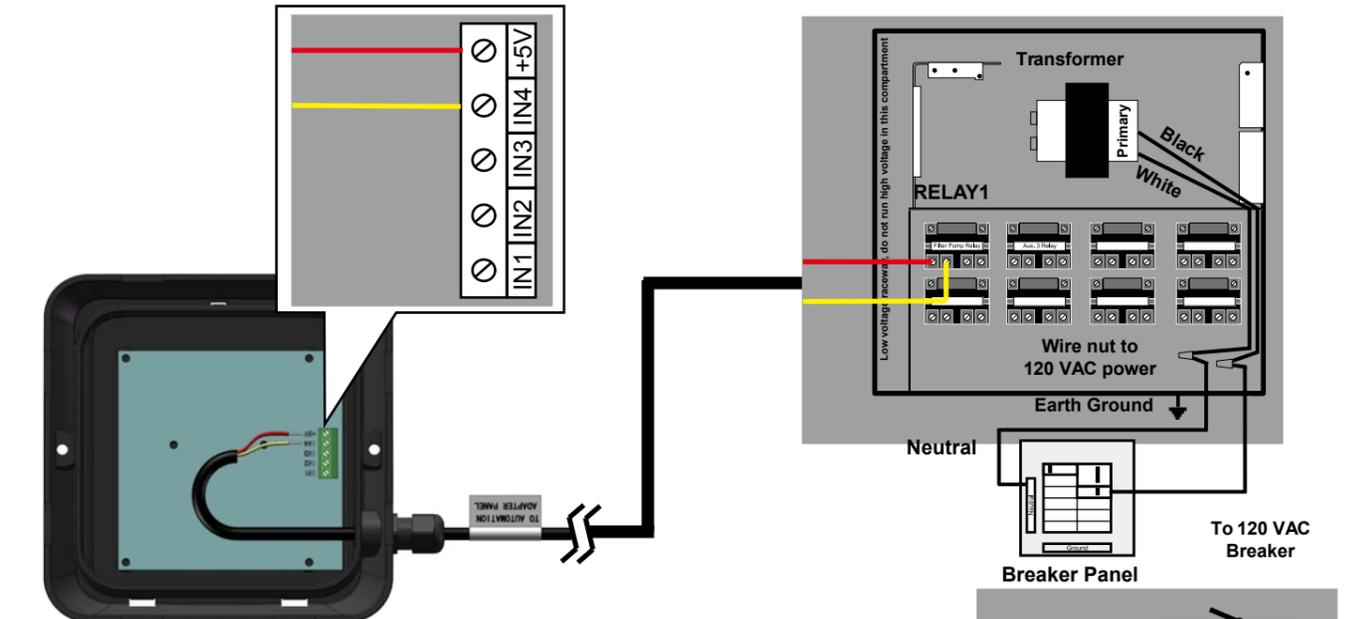
Mode Select	RELAY	IN4		Default Speed(RPM)	Default Duration(Hours)
Manual	1	ON	SPEED1	3000	2
			SPEED2	1500	10
			SPEED3	2500	2
			SPEED4	1000	4
Schedule	1	ON	Quick Clean	3450	/
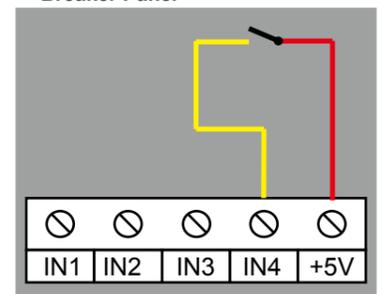
IN4 It is controlled by one relay of the external controller. After the relay is closed, four kinds of speeds can be realized corresponding to different running times. The time and speed are all completed on the pump operation panel. Refer to the Programming a Custom Schedule 1-14 for the specific operation steps.

Function description: In Manual mode, users are recommended to set Speed1-Speed4 duration time according to Relay(IN4) pulling time. Then the pump running as Speed1-Speed4.

In Schedule mode, Set start time and end time for IN4 relay on external Automation panel. Pump running as scheduled, when IN4 triggered, the pump running as (Quick Clean Speed) and to resume the Schedule as soon as the relay pull-out. Quick Clean Speed Setting refer to the "**Programming a Custom Schedule 9-12**" for the specific operation steps.

The following steps should be followed to connect the automation adapter to a variable motor.
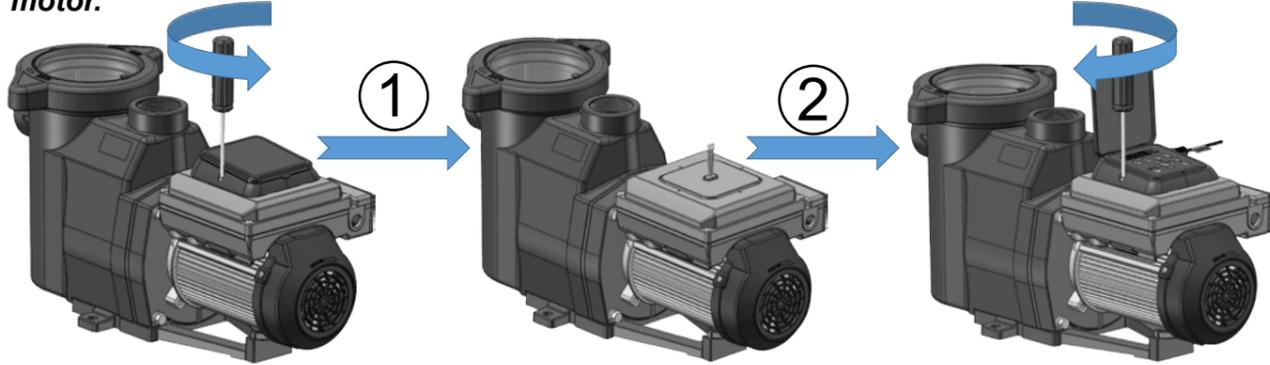
1. Remove the User Interface from the controller(2 screws).
   Disconnect the 6-pin communication connector
2. The 6-pin communication connector and Automation Adaplter Panel Installed.
   Assemble the Automation Adapter Panel (2 screws)

OPERATING AN AUTOMATION ADAPTER PANEL
Setting the Clock

When the pump is first installed,it is necessary to set the clock.Any daily schedule set by the user must be based on accurate time setting.

To Set the Clock:

1. When the pump is plugged in,the TIME led light is blinking. Entering clock setup by pushing Display Key.

Note:1.1 Time setup will be unavailable after 5 seconds' blinking.
1.2 If pump already in energizing,Meanwhile press"<" and" >" Key for about 3 seconds,the TIME led light is blinking. Entering clock setup by pushing Display Key.

2. Use the arrows to choose between a 12 or 24 hour time format.
3. Use the "+" and "-" arrows to change the time to the correct time of day. In the 12 hour time format AM/PM will display in the bottom left corner.
4. Press Display for about 3 seconds to exit the Clock Setup menu. The TIME led light is no blinking.The clock is now set. During a power outage, the drive will retain the clock setting in memory for as long as one day. If the power is out longer than one day the clock will have to be set again.

Note:Same operation as 1.2

Programming a Custom Schedule:

Note: When programming, the LED light next to the parameter ("Speed", "Time" and "Duration") you are setting will blink.
1. Stop the pump if it is running by pressing the Start/Stop button.
2. Press the "1" button. The LED above the selected SPEED will begin to blink and the "Speed" parameter LED will blink while editing.See Figure 1.
3. Use the "+" and "-" arrows to adjust the speed in RPM for SPEED 1.

Note: Speed is adjusted up or down by increments of 10 RPM.
4. Press the "1" button again and the display will change to SPEED 1 start time. The "Time"parameter LED will begin to blink. See Figure 2.
5. Use the "+" and "-" arrows to adjust the daily start time for SPEED 1.
6. Press the "1" button again and the display will change to SPEED 1 duration. The "Duration"parameter LED will begin to blink. See Figure 3.
7. Use the "+" and "-" arrows to adjust the duration for SPEED 1 in hours and minutes.

Note: The duration parameter is adjusted in 1 minute increments.
8. Pressing the "1" button will continue to cycle through these parameters, but the changes are immediately saved as they are adjusted.

9. Press the "2" button. The LED above SPEED 2 will begin to flash and the corresponding parameter LED will flash while editing.
10. Use the "+" and "-" arrows to adjust the speed in RPM for SPEED 2.
11. Press the "2" button again and the display will change to SPEED 2 duration.

Note: SPEEDS 2,3 and 4 do not have a start time,as they begin their duration immediately after the previous SPEED finishes.
12. Use the "+" and "-" arrows to adjust the duration for SPEED 2 in hours and minutes.
13. Repeat steps 9-12 to program SPEED 3-4 and QUICK CLEAN.

Note: Remember that the duration allowed for SPEED 3 will be limited to the remaining time in a 24 hour day. Any time in the 24 hour day not programmed into SPEEDs 1-4, the pump will remain in a stationary state.[SPEED 1 + SPEED 2 + SPEED 3 +SPEED 4 < 24 Hours]
14. Press the Start/Stop button and ensure the LED is lit. The pump is now on and will run the custom user-programmed schedule.

Note: If the pump has been stopped via the Start/Stop button, the pump will not run until the pump is turned back on by the Start/Stop button. If the Start/Stop LED is illuminated then the pump is on and will run the programmed schedule.

Freeze Protection Program
This pump comes equipped with an automatic freeze protection circuit that will power the pump on if surrounding air reaches the freeze protection temperature setting. The circuit provides continual, moderate flow through plumbing to protect pool equipment.

This feature is disabled by default. To enable Freeze Protection:
◆ Ensure the pump is in STOP mode by cycling the START/STOP button until the red LED above it is not lit.
◆ Press and hold the "+" and "-" arrows simultaneously to enter the freeze protection settings.
◆ While in this menu, use the "<" and ">" arrows to cycle between options.
◆ The default freeze protection speed is 1000 RPMs. Use the "+" and "-" arrows to set this to your desired speed between 750-3450 RPMs.
◆ Next, use the "+" and "-" arrows to set the duration in hours the pump runs once freeze protection is triggered.
◆ Set duration to 0 to deactivate freeze protection.
◆ Lastly, use the "+" and "-" arrows to set the activation temperature between 40°F and 50°F.
◆ The MODE SELECT button will cycle between Fahrenheit or Celsius.

The freeze protection minimum activation temperature is 40°F due to the pump's proximity to the warmer ground and its own latent/stored heat after running during the day. When the pump sensor detects temperatures in this range, it is often already near or below freezing in other areas of the pool equipment pad.

Priming Program
The default setting for Priming is ENABLED.
◆ Ensure the pump is in STOP mode by cycling the START/STOP button until the red LED above it is not lit.
◆ Press **Display** button for 5 seconds simultaneously to enter the priming settings.
◆ While in this menu, use the "<" and ">" arrows to cycle between options.
◆ The default **Priming speed** is 3450 RPMs. Use the "+" and "-" arrows to set this to your desired speed between 2400-3450 RPMs.
◆ Next, the default **priming time** 5 minutes. use the "+" and "-" arrows to set the duration in minutes the pump runs once priming is triggered. (Priming time can be set from 0 - 10 minutes)
◆ Set duration to 0 minutes to deactivate priming protection.
◆ Press **Display** button for about 3 seconds to exit the priming Setup menu.

Figure1   Figure2   Figure3

AQUASCAPE
POOL TECHNOLOGIES