

Operating Instructions



Solar Control SC03-VAS-24 Praher

The VAS-24 solar temperature controlled electric actuator is designed to be mounted on all Praher OV3 type 3 way rotary valves. It will also fit on other anme brand valves with identical shaft deisgn and mounting bolt pattern

Red AIR sensor

Blue water sensor

Actuator with controler in one unit

18 ft power cord for 115VAC--optional

4 x #14-14x1.5" mounting screws to mount actuator to valve



2x 2.5" gear clamps (stainless) to clamp water sensor saddle to pipe

Instruction manual

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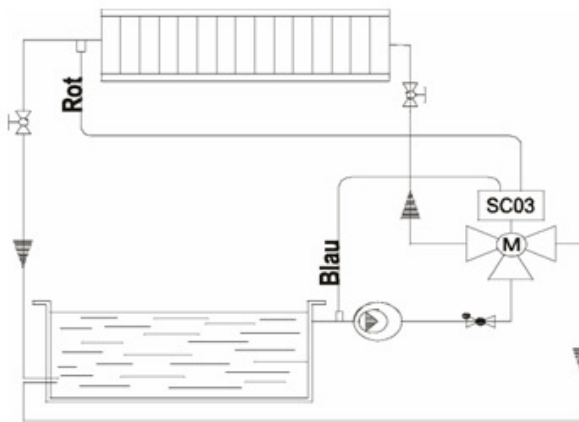
Installation:

We recommend to run power supply cable to the valve actuator and solar sensor cables in separate conduits. The supplied cables can be extended up to 50 meters if necessary as long as the slicing of the cables is done professionally and the wire cross section is at least 0.5mm. All installation must be in conformance with the local or state electrical codes. **Always install ground fault interrupters (GFI'S) for any out door equipment. Plug the power cable only into a GFI protected receptacle or circuit. Caution- even though the system has no power supplied to the controller, electrical hazard to humans may exist in the electronic components inside the controller (i.e. capacitors)**

Both temperature sensors are galvanic-ally separated from the supply voltage to the system. The controller works in any position but we do not recommend to install it upside down.

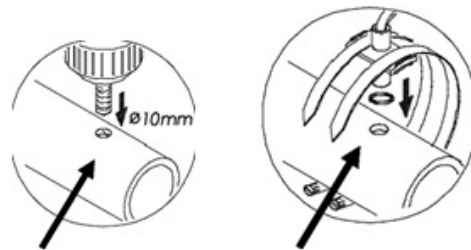
Always secure your ladder when climbing up on the roof to work on your solar panels.

Schematic Illustration:



Installation of the BLUE pool sensor

Install sensor as close as possible to the pool. Depressurize and drain the piping system before installation



Installation of RED solar sensor

Install the solar sensor as close as possible to the solar panel return line on the roof, but ensure that the location has sufficient direct sunlight (be aware of trees that may create shade during part of the day).



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Note:

The pool water temperature may be slightly different than the temperature selected on the controller. This is normal as the controller measures the temperature only by the two sensors, which are not directly in the pool water.

Start Up:

After the valve and controller are installed, plug in the power supply cable. The green LED(1) will light up. The system is ready now. The valve actuator will drive the valve into position 1.

If the pool water temperature drops 1.5°C below the set temperature (set with dial on controller cover) and the solar panel temperature rises 4°C above the set temperature, then the system will switch to heating and the valve actuator will drive the valve into position 2.

Trouble Shooting:

Power LED is not lit: check if operating voltage is present.

Pool water temperature does not increase when sun is shining: check if filter pump or solar pump is switched off.

Controller does not switch to HEATING position: check if sensor is defective or if it is not installed in an optimum location.

Controller does not stop heating: check if sensor is defective or not installed in optimum location.

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Technical Data:

Voltages: 12-34VDC
12-230VAC 50/60Hz

Power consumption: max.1.5Watts 12-34VDC
max.60Watts 12-230VAC

Enclosure: IP54(Nema3S)

Ambient temperature: max 50°C

Pool water—solar panel temperature difference: 4°C

The controller will switch the valve actuator back to the heating position after the pool water temperature drops 1.5°C below the set temperature in the controller.

Caution: The red four armed knob on top of the actuator cover is only a position indicator for the valve and actuator, do not use it as a possible manual override handle in case of a power failure or system malfunctioning. If valve must be rotated and no power is available, merely unscrew the four mounting screws that hold the actuator to the valve body and rotate the complete top assembly.

Power LED green



RED KNOB with flow pattern

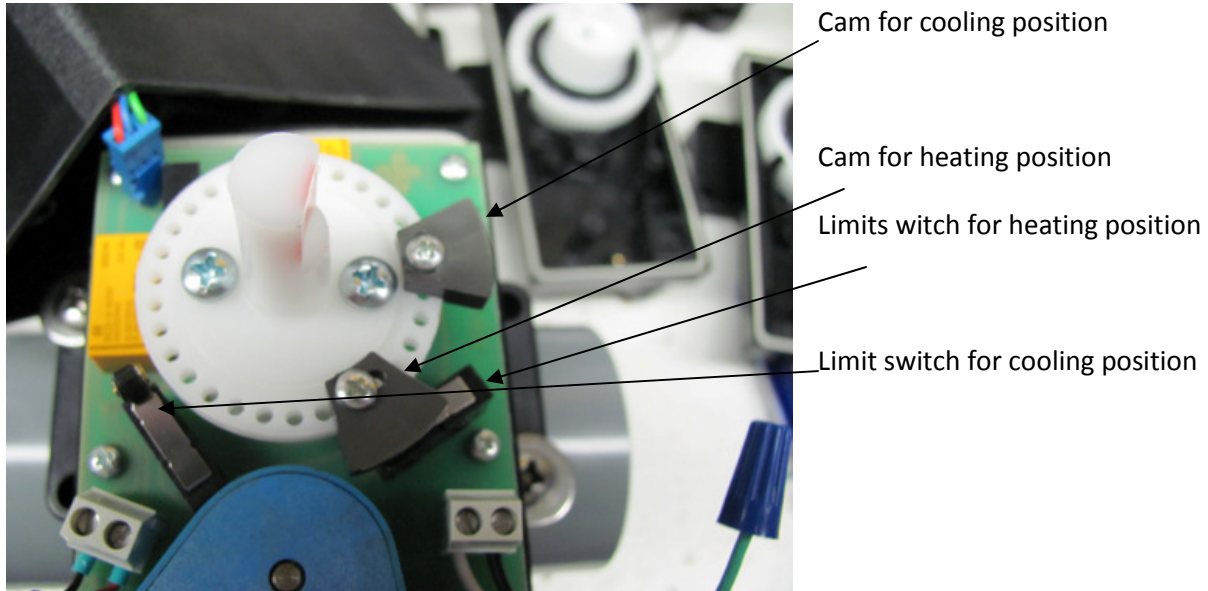
Heating LED RED

Temperature control knob

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Disconnect power before setting the cams.

The Actuator will turn clockwise (looking from same vantage point as in this picture) when the control is calling for heat and will stop when the grey cam activates the limit switch lever arm.

The cam can be easily field adjusted by using a small Phillips screw driver and repositioning the cam in a different mounting hole on white carrier disc or sliding it in the micro adjustment slot.

Be careful when retightening the screw---do not strip the threads in the plastic part.

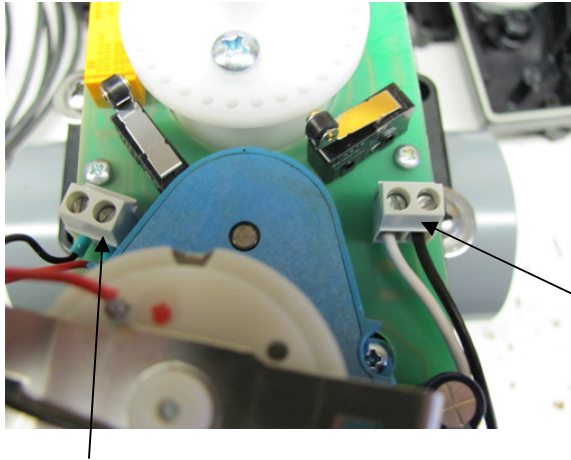
Moving the cam farther clockwise will move the valve paddle farther clockwise. Moving the cam anticlockwise will stop the paddle sooner.

The same procedure applies for the cooling limit switch and cam. The actuator will drive in counter clockwise direction in order to reach the cooling limit switch.

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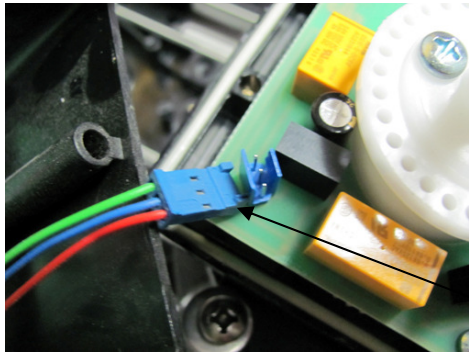


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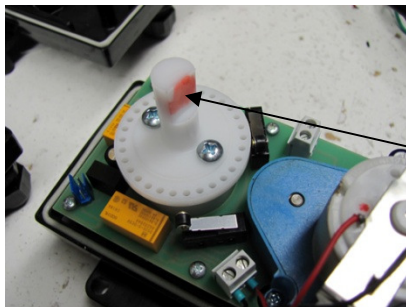


Power connection to circuit board—Field wiring

Motor connection DC-motor to circuit board—red closest to motor, black on outer edge



3 wire plug for temperature circuit board connection to main board—must be connected and plugged into main board



Red colored flat on shaft of cam disc carrier must be matching up in alignment with small tooth of actuator shaft coupler shown in next picture

RED colored flat

Small tooth of drive shaft at bottom of actuator

