

VANCS Series AUTOMATIC OPERATION: A and W Control System

Tsurumi offers the "A" and "W" System in accordance with our goal of offering the most advanced design features available in submersible pumps. This built in control system allows for automatic operation of Simplex units, Parallel and Automatic Alternation of Duplex units. **All without the need of costly control panels or additional wiring*.**

TYPE "A" UNIT DESIGN FEATURES

The Tsurumi "A" unit is a stand alone automatic unit and features two built in level controls, 24V step down control transformer, pilot relay, (magnetic starter in 3 phase units) and a CTP (thermal and amperage sensing motor protector). All that is required for totally automatic operation, is a fused disconnect or circuit breaker above the sump.

TYPE "W" UNIT DESIGN FEATURES

The "W" unit features three built in level controls, 24V step down control transformer, pilot relay, (magnetic starter in 3 phase units), solid state alternating circuitry and a CTP, (thermal and amperage sensing motor protector). All that is required for totally automatic duplex operation, is a fused disconnect or circuit breaker above the sump.

Automatic Model (A)

The float type automatic model has an integral control circuit and two float switches that operate at a low voltage. It operates automatically in response to the change in water levels.

This model can be identified by the suffix "A" and is available in all motor output ranges of the PU, PN, PSF , and TM Series.



The cylindrical float type automatic model is available only for the OM Series.

Adoption of the unique float switch has made even the automatic model very compact and enables it to be installed in a limited space. Automatic operation is possible with a simple power panel.



Auto-Alternation Model (W)

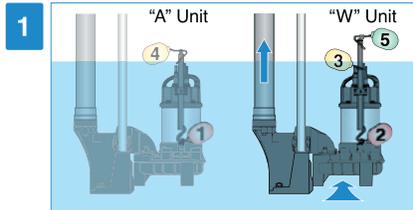
The auto-alternation model is used along with an automatic model for duplex operation. The combinational use of these two pumps enables each pump to operate alternately without control panel.

The auto-alternation model has three floats and can be identified by the suffix "W". Refer to model selection for availability and model



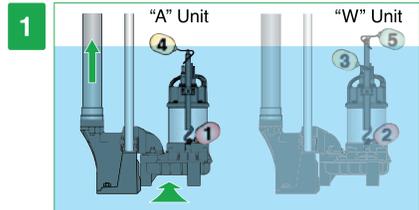
How the Auto-alternation Model Works

Primary Operation

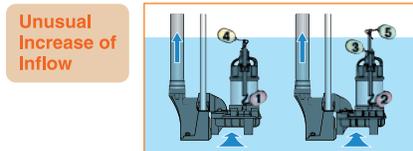


Water level rises and turns the Float #2 up. The Float #2 is activated but the pump does not start. When water level rises to Float #3 and the float is activated, the "W" unit starts.

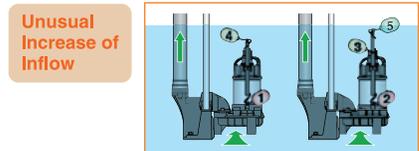
Secondary Operation



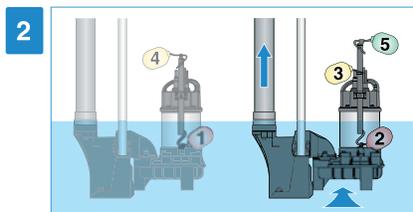
The next time the water level rises, Float #1 on the "A" unit is activated but the unit does not start until Float #4 is activated.



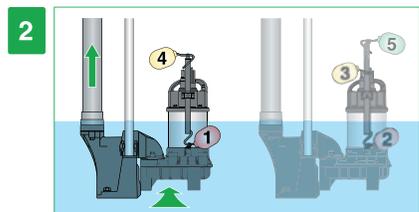
If inflow exceeds the capacity of "W" unit and the water level rises to Float #4, "A" unit starts.



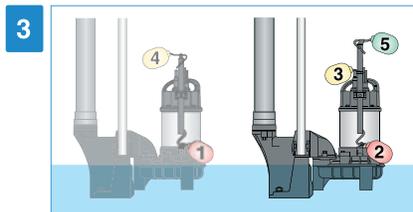
If inflow exceeds the capacity of "A" unit and the water level rises to Float #5, "W" unit starts.



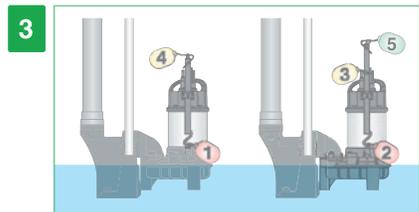
The "W" unit is discharging water (Water level falls).



The "A" unit is discharging water (Water level falls).



When water level falls to Float #2, the float is activated, and the "W" unit stops. The alternating circuitry deactivates the "W" unit for the next level rise.



When water level falls and Float #1 is activated, the "A" unit stops. At the same time, "W" unit becomes ready for operation for the next level rise.