



# TWO-WAY FLOW ALTITUDE VALVE with SOLENOID OVERRIDE FEATURE

01/05

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## Classic Series

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F127-31 (Globe)  
F1127-31 (Angle)

### Operation

The Watts ACV Two Way Flow Altitude Valve with Solenoid Override Feature is designed to open, allowing flow into a reservoir or elevated storage tank (tank fill), and close drip tight when high water level is achieved. The valve will also open allowing return flow (tank discharge), when upstream pressure falls below reservoir head pressure. The Altitude Pilot remotely senses static tank head pressure (water level) through a field installed sensing line, and directs pressure into and out of the cover chamber of the 3-way Accelerator Pilot. When the cover of the Accelerator Pilot is pressurized, the main valve cover chamber is vented downstream (dry drain) or to atmosphere (wet drain), causing the valve to open fully. When the cover of the Accelerator Pilot is de-pressurized, the main valve cover chamber is connected to upstream pressure, causing the valve to close drip tight.

As water level decreases, static tank head pressure falls below the adjustable setpoint of the Altitude Pilot, causing it to pressurize the cover of the Accelerator Pilot, opening the valve. As water level increases, static tank head exceeds the adjustable setpoint of the Altitude Pilot, causing it to depressurize the cover of the Accelerator Pilot, closing the valve drip tight. Valve opening and closing speeds are separately adjustable. The Position Indicator with Air Bleed Petcock allow for visual indication of valve position, and allows easy venting of air entrapped in the main valve cover chamber.

When upstream pressure falls below reservoir head pressure, a Check Valve installed in the pilot control system "Return Flow Line" opens, connecting the main valve cover chamber to the upstream pressure zone, causing the valve to open allowing reservoir pressure to return into the upstream pressure zone (Tank Discharge).

The Solenoid Override Feature provides remote electrical, or local manual closure of the valve. When the Solenoid Pilot is energized, it vents the cover of the Accelerator Pilot, causing the main valve to close regardless of water level. Engaging the Solenoid Manual operator simulates power to the solenoid, manually closing the main valve. Disengaging the Solenoid Manual operator returns the valve to normal on-off service.

**Specify Tank height and Solenoid voltage PRIOR to ordering.**



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### Installation Guidelines

- Prior to installation, flush line to remove debris.
- Install valve horizontally “in line” (cover facing UP), so flow arrow matches flow through the line. Avoid installing valve 6” and larger vertically. Consult factory **prior** to ordering if installation is other than described.
- Install inlet and outlet isolation valves. **NOTE:** When using butterfly valves, insure disc does not contact control valve. Damage or improper valve seating may occur.
- Provide adequate clearance for valve servicing and maintenance.
- Install pressure gauges to monitor valve inlet, outlet, and static head pressure.
- Provide adequate drain for cover chamber discharge if “wet drain” option is selected. Consult “Valve Cover Capacity” chart on appropriate main valve Engineering Bulletin.
- **Install static tank head sense line. For optimum control, sense line should be:** 1) Installed with an upward angle (towards reservoir) to avoid air accumulation, 2) Connected no further than forty-five pipe diameters from the reservoir, and 3) A minimum of 1/2” diameter.
- Connect Solenoid Pilot to appropriate power source in compliance with local electrical codes.

### Other Watts ACV Altitude Control Valves

F127-1 / F1127-1	One Way Flow Altitude Valve
F127-2 / F1127-2	Two Way Flow Altitude Valve
F127-8 / F1127-8	One Way Flow Altitude Valve with Pressure Sustaining Feature
F127-11 / F1127-11	One Way Flow Altitude Valve with Delayed Opening Feature
F127-32 / F1127-32	One Way Flow Altitude Valve with Solenoid Override Feature