Solenoid Controlled Hydrometer

(Sizes 2-10"; DN50-250)

Description

The Model 910 solenoid Controlled Hydrometer integrates a vertical turbine Woltman-type water meter, with a diaphragm actuated hydraulic control valve. This model either opens fully or shuts off in response to electric signals.

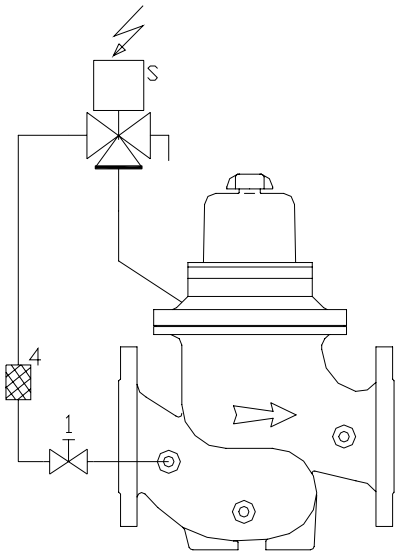
Installation

1. Ensure enough space around the hydrometer for future maintenance and adjustments.
2. Prior to installation, flush the pipeline to insure flow of clean fluid through the hydrometer.
3. For future maintenance, install Isolation gate valves upstream and downstream from the hydrometer.
4. Install the hydrometer in the pipeline with the flow direction arrow in the actual flow direction. Use the lifting ring provided on the hydrometer cover.
5. For best performance, it is recommended to install the hydrometer horizontally and upright. For different positions – consult Bermad.
6. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.
7. System power connections, control cabinet, controller, sensors & wiring must be carried out by authorized electrical engineer / electrician and comply with Electrical and Instrumentation Codes.
8. Cross-Check solenoid's specifications with design requirements and solenoids/coils label.
9. Pull and connect 3-wired cables, to the solenoid, according to electric diagram. Ensure approved cables protection. Confirm that the wires data meet specifications.
   Note: Energizing the solenoid coil when it is not fixed in its place, is dangerous and might burn the coil.
10. It is highly recommended to install a strainer Bermad model 70F upstream from the Solenoid Control Valve, to prevent debris from damaging valve operation.

Commissioning

1. Confirm that cock valve [1] is open (handle parallel to cock-valve body).
2. Confirm that the supply pressure is typical.
3. Open upstream and downstream isolating valves. Allow the Solenoid Control Hydrometer to open.
4. Vent air from the Hydrometer control loop:
   During opening, use solenoid manual override to manually switch position, forcing the Hydrometer to close and then to open. At each position, vent air from the Hydrometer control loop by loosening tube fitting at the highest point, allowing the air to bleed.
5. The Model 910 has three modes of operation:
   5.1. Normally Closed Valve, with a Normally Open Solenoid. Energizing the solenoid will cause the valve to open.
   5.2. Normally Open Valve, with a Normally Closed Solenoid. Energizing the solenoid will cause the valve to Close.
   5.3. Last Position Valve, with a Latch Solenoid. Each electric command will cause the valve to alternate between fully open and closed.

Control Drawing



PARTS LIST

1	2W Cock Valve
4	Control Filter
S	3-Way Solenoid

Trouble-Shooting

1. **Hydrometer fails to Open:** Check for sufficient inlet pressure, confirm solenoid is not jammed, confirm power supply to solenoid & confirm solenoid coil is not burned (N.C. valves), & check cock valve [1] status.
2. **Hydrometer fails to Close:** Check cock valve [1] status, confirm power supply to solenoid & confirm solenoid coil is not burned (N.O. valves), confirm solenoid is not jammed, clean control filter & detect for clogged ports or fittings, check if any debris trapped in the main valve, confirm diaphragm is not leaking on both the valve and the relay valve.

Preventative Maintenance

1. System operating conditions that effect on the hydrometer should be checked periodically to determent the required preventative maintenance schedule.
2. Maintenance instructions (also refer to 900-M0 ASSEMBLY INSTRUCTIONS WW.pdf):
   - 2.1. Visual inspection to locate leaks and external damages
   - 2.2. Functional inspection including: closing, opening and regulation.
   - 2.3. Close upstream and downstream isolating valves (and external operating pressure when used).
   - 2.4. Once the hydrometer is fully isolated vent pressure by loosening a plug or a fitting.
   - 2.5. Replace worn parts and all the Elastomers. Lubricate the bolts threads with Anti seize grease.

Spare parts

Bermad has a convenient and easy to use ordering guide for valve spare-parts and control system components.
For solenoid valves refer to model and S/N on solenoid tags.

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