## Hydrometer with Magnetic Drive
(Sizes 1.5''- 10''; DN40-250)

Description:
The BERMAD Hydrometer with Magnetic Drive integrates a Vertical turbine Woltman-type water meter with a diaphragm actuated hydraulic control valve. The impeller drive is magnetically coupled to a vacuum-sealed meter register in the control head. As the system's Flow Meter and Main Valve, it controls system irrigation together with the irrigation controller. The BERMAD Model IR-900-M0-Z opens or shuts in response to remote pressure commands while continuously and accurately transmitting flow data. Continuously and accurately transmitting flow data.
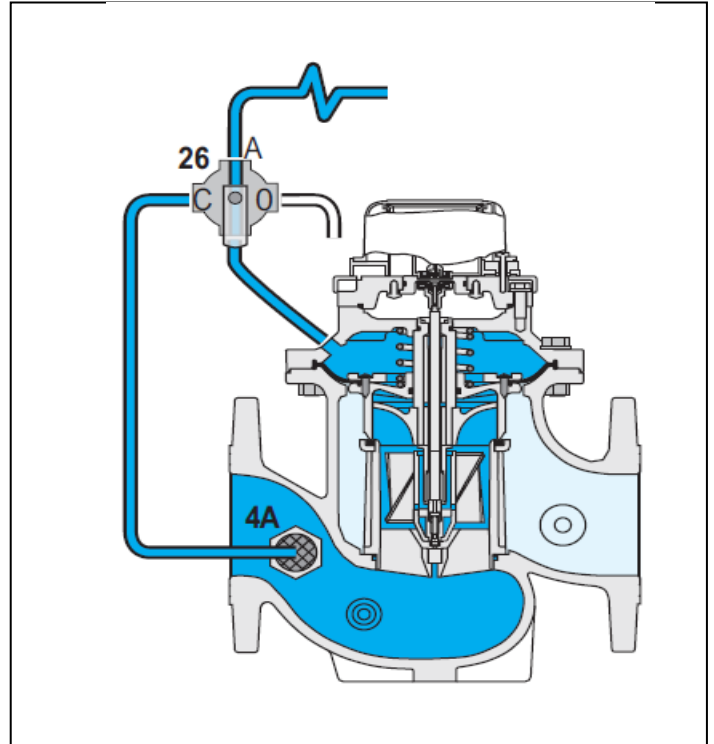
Installation:
1. Ensure enough space around the valve assembly for future maintenance and adjustments.
2. Prior to valve installation, flush the pipeline to insure flow of clean fluid through the valve.
3. For future maintenance, install Isolation gate valves upstream and downstream from Bermad control valve.
4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction.
5. For best performance, it is recommended to install the valve horizontally and upright.
6. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.
7. It is highly recommended to install a strainer Bermad model 70F upstream from the pressure reducing hydrometer, to prevent debris from damaging valve operation.

Commissioning & Calibration:
1. Confirm that the In-line filter arrow [4A] direction is in the valve flow direction.
2. Allow the valve to open by turning the cock valve (26) handle to open.
3. Open fully the upstream isolating valve and slowly open the downstream isolating valve, to fill-up, carefully, the consumers' line downstream from the Valve.
4. Vent air from the valve's control loop by loosening cover tube fitting at the highest point, allowing all air to bleed. Then Retighten the tube fitting.

Trouble-Shooting:

Symptoms	Cause	Remedy
Valve fails to open	1. Cock valve (26) position. 2. Not sufficient inlet pressure. 3. Not sufficient flow.	1. Confirm cock valve handle is point to open. 2. Check for sufficient inlet pressure. 3. Create demand/flow.
Valve fails to close	1. Cock valve (26) position. 2. Control circuit is clogged. 3. Debris. 4. Diaphragm.	1. Confirm cock valve handle is point to close. 2. Check for any debris trapped in the valve control circuit. 3. Check for any debris trapped in the valve body. 4. Check diaphragm is not leaking.

Preventive Maintenance:

1. System operating conditions that effect on the valve should be checked periodically to determent the required preventative maintenance schedule.
2. Maintenance instructions:
    2.1. Tools required:
        2.1.1. Metric and imperial wrenches
        2.1.2. Anti-seize grease
        2.1.3. 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 valve is fully isolated vent pressure by loosening a plug or a fitting.
    2.5. Open the screw nuts and remove the cover unit from the valve body. Disassemble necessary control tubs.
    2.6. It is highly recommended to stock a reserve parts assembly for each size. This allows minimum system field work. And system down time.
    2.7. Disassemble the cover and examine the inside parts carefully for signs of wear, corrosion, or any other abnormal conditions.
    2.8. Replace worn parts and all the Elastomers. Lubricate the bolts and screws threads with Anti seize grease.
    2.9. Winterizing /freezing prevention: drain the valve & the valve accessories (pilot, solenoid) on time.

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.