Level Control Valve with Modulating Altitude Pilot

(Sizes 1½-14"; DN40-350)

Description

The Model 750-82 Level Control Valve with Modulating Altitude Pilot is a hydraulically operated, diaphragm actuated control valve that hydraulically controls reservoir filling to maintain constant water level, as sensed by the 2-Way altitude pilot mounted on the main valve.

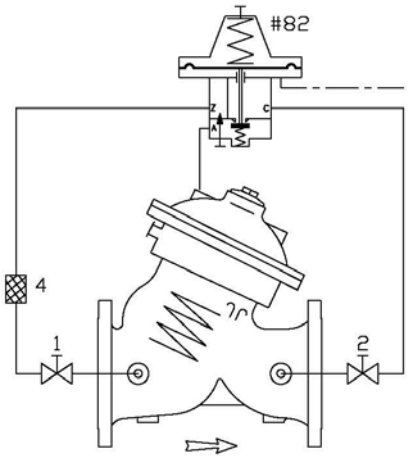
Installation

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. Use the lifting ring provided on the main valve cover for installing the valve.
5. For best performance, it is recommended to install the valve horizontally and upright. For different valve positions – consult Bermad.
6. It is highly recommended to install a strainer Bermad model 70F upstream from the pressure reducing valve, to prevent debris from damaging valve operation.
7. Prepare a 1" female treaded "level sensing port"; consist of a cock-valve and a filter, at a "still-point" at the bottom of the reservoir.
   Note: The drainage pipe might provide this "still-point", a location not influenced by flow velocity as in filling and outflow pipes.
8. Pull a ½" sensing tube, from the "level sensing port" at the bottom of the reservoir, to the valve. Install a ½" female thread adaptor at the valve-side end of the sensing tube. Ensure tube protection by a covered cable-canal. Apply a fixed effective tubes route.
9. Connect the control tube end, using ⅜" copper or reinforced plastic tube, to the valve and to the "level sensing port", according to control drawing below.

Commissioning & Calibration

1. Confirm that cock valves [1] and [2] are open (handle parallel to cock-valve body).
2. Open fully the upstream and the downstream isolating valves.
3. Confirm that the supply pressure is typical.
4. Fill up the reservoir until the level reach its desired shut-off level.
   Note: simulation of shut-off and opening can be performed by temporary connecting a transparent plastic tube to the pilot sensing chamber. Locating the end of this tube at the reservoir roof, filling it with water to the shut-off level and emptying it to the opening level, can simulate reservoir levels changing while saving the water and the time involved with filling and emptying the reservoir.
5. Vent air from the valve's control loop & the pilot sensing chamber by loosening tube fittings at the highest points, allowing all air to bleed. Retighten the tube fittings eyebolts.
6. The Model 750-82 is factory set according to the design level request. The set level is marked on the pilot's label. Confirm the water level in the reservoir is at the desired shut-off level, and allow the valve to close.
7. If the set level is either different from the design or the requirements have been changed, unlock the pilots locking nut and slowly turn the pilot adjusting screw Clock-Wise to increase set level and Counter-Clock-Wise to decrease it. Allow the 750-82 to react.
   Note: Opening the 750-82 to decrease pilot set-level requires to cause the water level to drop by consuming from the reservoir or by draining it.
8. Allow the water level to drop by consuming from the reservoir or by draining it. This will cause the valve to open.
9. After the level is set, lock the pilot locking nut.
10. The pilot integral needle valve enables the 2-Way control and controls valve closing speed. It should be set between 1 to 2 turns open, according to valve size and the desired closing speed.
11. Cock valve [2] enables manual closing.

Control Drawing



PARTS LIST

1	2W Cock Valve
2	2W Cock Valve
4	Control Filter
#82	2W Altitude & PRV
- - - -	Not Supplied By BERMAD

Trouble-Shooting

1. **Valve fails to Open:** Check for sufficient inlet pressure, confirm pilot setting & reservoir level, check cock valve [2] status, check needle valve opening rate, detect for clogged ports or fittings between valve & reservoir.
2. **Valve fails to Close:** Confirm pilot setting & reservoir level, check cock valve [1] & needle valve status, clean control filter & detect for clogged ports or fittings, check if any debris trapped in the main valve, confirm diaphragm is not leaking.
3. **Valve fails to Regulate:** Check cock valves & needle valve status, release air trapped in the 750-82 control chamber .

Preventative 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
   - 2.2. Visual inspection to locate leaks and external damages
   - 2.3. Functional inspection including: closing, opening and regulation.
   - 2.4. Close upstream and downstream isolating valves (and external operating pressure when used).
   - 2.5. Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
   - 2.6. Open the stud nuts and remove the actuator as one unit from the valve body. Disassemble necessary control tubs.
   - 2.7. It is highly recommended to stock a reserve actuator assembly for each size. This allows minimum system field work and system down time.
   - 2.8. Disassemble the actuator and examine its parts carefully for signs of wear, corrosion, or any other abnormal conditions.
   - 2.9. Replace worn parts and all the Elastomers. Lubricate the bolts and studs 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.

appliceng@bermad.com • www.bermad.com