

Electronic-Control Valve

(Sizes 1½-14"; DN40-350)

Description

The Model 718-03 Electronic-Control Valve combines the advantages of an excellent modulating, line-pressure driven, and hydraulic control valve with the advantages of electronic control. The valve responds to signals from a controller BERMAD SUPER-BE (optional) according to the set values programmed into the controller.

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. It is highly recommended to install a strainer Bermad model 70F upstream from the level control valve, to prevent debris from damaging valve operation.
5. 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.
6. For best performance, it is recommended to install the valve horizontally and upright. For different valve positions – consult Bermad.
7. Crosscheck solenoid specifications with design requirements and solenoid/coil label.
8. Electric design/wiring must be carried out by authorized electrical engineer/electrician and comply with Electrical Codes.
9. Pull and connect two 3-wired cables, from the control panel to the valve, for the solenoids actuation. Ensure approved cable protection. Confirm that the wires data meet solenoid specifications.
Note: Energizing the solenoid coil when it is not fixed in its place, is dangerous and might burn the coil.
10. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.

Commissioning & Calibration

1. Confirm that cock valves [1]+[3] are open (handle parallel to cock-valve body).
2. Confirm that speed control needle valves [5A] & [5B] are open two turns.
3. According to solenoid type - Confirm that solenoids manual override operator (if exists) are on automatic mode or confirm that solenoids bypass cock valves (optional) are closed.
4. The model 718-03 is available in three different configurations:

| Main Valve Configuration | Solenoid [S1] | Solenoid [S2] |
|--------------------------|------------------------|------------------------|
| L.P. – Last Position | N.C. – Normally Closed | N.C. – Normally Closed |
| N.C. – Normally Closed | N.O. – Normally Open | N.C. – Normally Closed |
| N.O. – Normally Open | N.C. – Normally Closed | N.O. – Normally Open |

4.1. L.P. – Last Position Configuration

- 4.1.1. When neither of the solenoids is energized the main valve remains in its last position.
- 4.1.2. Energizing solenoid [S1] intermittently causes the main valve to close respectively until valve shuts drip tight.
- 4.1.3. Energizing solenoid [S2] intermittently causes the main valve to open respectively until fully open.

4.2. N.C. – Normally Closed Configuration

- 4.2.1. When neither of the solenoids is energized the main valve is closed drip tight.
- 4.2.2. Energizing solenoid [S1] continually causes the main valve to remain in its last position.
- 4.2.3. De-energizing solenoid [S1] periodically causes the main valve to close respectively.
- 4.2.4. Energizing solenoid [S2] intermittently, while energizing solenoid [S1] continually causes the main valve to open respectively until fully open.

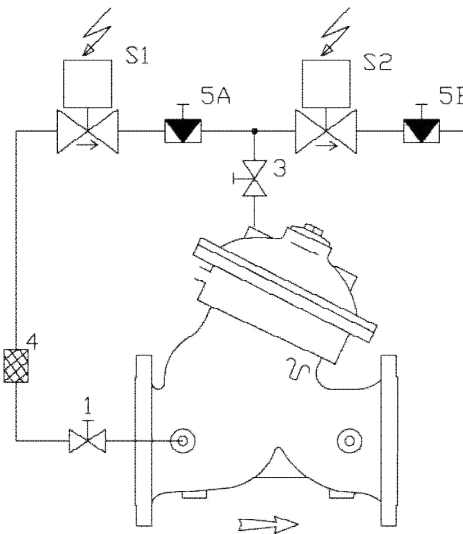
4.3. N.O. – Normally Open Configuration

- 4.3.1. When neither of the solenoids is energized the main valve is fully open.
- 4.3.2. Energizing solenoid [S2] continually causes the main valve to remain in its last position.
- 4.3.3. De-energizing solenoid [S2] periodically causes the main valve to open respectively.
- 4.3.4. Energizing solenoid [S1] intermittently, while energizing solenoid [S2] continually causes the main valve to close respectively until valve shuts drip tight.

Control Drawing

PARTS LIST

| | |
|---|----------------|
| 1 | 2W Cock Valve |
| 3 | 2W Cock Valve |
| 4 | Control Filter |
| 5 | Needle Valve |
| S | 2W NC Solenoid |



Trouble-Shooting

- Valve fails to Open:** Check for sufficient inlet pressure, create demand/flow, check cock valves status, confirm power supply to solenoid & confirm solenoid coil is not burned.
- Valve fails to Close:** Create demand/flow, confirm pilot setting, check needle & cock valves status, clean control filter & detect for clogged ports or fittings, confirm power supply to solenoid & confirm solenoid coil is not burned, check if any debris trapped in the main valve, confirm diaphragm is not leaking.

Preventative Maintenance

- System operating conditions that effect on the valve should be checked periodically to determent the required preventative maintenance schedule.
- Maintenance instructions:
 - Tools required:
 - Metric and imperial wrenches
 - Anti seize grease
 - Visual inspection to locate leaks and external damages
 - Functional inspection including: closing, opening and regulation.
 - Close upstream and downstream isolating valves (and external operating pressure when used).
 - Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
 - Open the stud nuts and remove the actuator as one unit from the valve body. Disassemble necessary control tubs and wires.
 - It is highly recommended to stock a reserve solenoid and an actuator assembly for each size. This allows disassemble the actuator and examine its parts carefully for signs of wear, corrosion, or any other abnormal conditions.
 - 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.

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appliceng@bermad.com • www.bermad.com

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