Multi Step (Digital) Controlled Valve

Lines:

The electronic controlled control valve shall be a hydraulic control valve that combines electronic control with line pressure driven modulation. In response to signals from the electronic controller, the valve shall change its opening position per preset measurable characteristic values programmed into the controller (pressure, flow, level, temperature and others). Both the valve's opening and closing speeds should be controllable and on-site adjustable. This double chamber actuated valve shall be powered to fully open and close even at very low pressure.

1. Main Valve

1.1. The main valve shall be diaphragm actuated oblique ("Y") Globe pattern design.
1.2. The valve shall have an unobstructed flow path, with no stem guides, bearings, or supporting ribs.
1.3. The valve shall have a replaceable stainless steel seat ring.
1.4. The S.S seat ring shall be fitted on a specially designed raised ridge for improved cavitation resistance
1.5. The actuator assembly shall be double chambered with an inherent casted separating partition between the lower surface of diaphragm and the main valve.
1.6. The standard double chambered actuator assembly shall be capable of simple conversion to single chambered configuration and vice versa while maintaining the valve's overall dimensions: weight, height, length.
1.7. The valve shall be center guided by a bearing in the separating partition.
1.8. The diaphragm shall not be used as a sealing surface.
1.9. The valve diaphragm shall be isolated from the flow through the main valve.
1.10. The valve shall be capable of accepting of:
- Flat type plug for high flow conditions
- V-Port type plug which changes the ratio of flow to stem travel allowing excellent performance in a wide range of working conditions
- Cavitation Cage type designed to operate under high differential pressure conditions eliminating cavitation damage

1.11. The valve shall be capable of accepting a visual valve position indicator for observing its seal disk opening level.
1.12. The valve shall be capable of accepting an electric limit (on-off) switch and position transmitter (0-100% opening)
1.13. The valve pressure rating shall be PN16; 250 psi.
1.14. Valve flange shall be with flats for vertical support.
1.15. Valve "flange to flange" length shall be according to EN 558-1.

2. Construction Materials

The main Valve Construction Material shall be:
2.1. Body, cover and separating partition: Cast Ductile Iron.
2.2. Internal parts: Stainless Steel, Bronze and Epoxy coated Steel
2.3. Diaphragm: nylon fabric-reinforced synthetic rubber.
2.4. Seals: Synthetic rubber.
2.5. Bolts and nuts: Stainless Steel.

3. Coating

Valve body, cover and separating partition shall have a protective fusion bonded epoxy coating.
3.1. Coating type shall be Fusion Bonded Epoxy.
3.2. Coating material shall create an effective barrier against wide range of fluids.
3.3. Coating color shall be Dark Blue.
3.4. Coating thickness shall be 250-500µm.
3.5. Coating shall be certified for all major drinking water standards.

4. Control System

4.1. The solenoids valves should be a "Dry type" with no wetted mechanical moving parts, build with elastomeric seal, which is the only part contacted with the fluid.
4.2. Normally Open (N.O.), Normally Closed (N.C.) or Last Position (L.P) models and a variety of operating currents shall be available.
4.3. Tubing and fittings shall be made of Stainless Steel 316 (1.5" - 12"; DN40- 300), Copper & Brass (14"; DN350 and above).
4.4. Control accessories including: regulating pilot, filter, needle valves, cock valves etc. shall be made of Bronze, Brass by standard.
4.5. The control system shall be equipped with an external "Y" shape filter. Cleaning the filter shall not require isolating the main valve.
4.6. Isolating cock valve shall be installed on the upstream port of the main valve.

5. Service

5.1. All valve components shall be accessible and serviceable without removing the valve from the pipeline

5.2. The entire actuator assembly (seal disk to top cover) shall be removable from the valve as one integral unit to reduce downtime

6. Testing

6.1. The valve manufacturer shall have hydraulic test laboratory in his premises, capable of performing both dynamic and static tests of all manufactured valves.

6.2. Prior to shipment the valve shall be tested a complete functional test performed under dynamic conditions similar to the project specification

7. Approvals And Certifications

7.1. The valve manufacturer quality system shall be certified to ISO 9001-2015

7.2. The manufacturer shall be capable of supplying valves certified by major drinking water standards such as: NSF61 (USA), WRAS (UK), SAI (Australia), DVGW (Germany), ACS (France) and others.