Pressure management automatic control valve **Mod. XLC 310/410-T**

The CSA model XLC 310/410-T automatic control valve reduces and stabilizes the downstream pressure correlating the pilot setting with demand, regardless of changes and fluctuations of upstream pressure conditions, through signals supplied by a CSA controller or existing PLC either using a web interface or battery operated solutions. The CSA pressure reducing stabilizing valve XLC 310/410-T stands out as the ideal solution for pressure management, and water loss reduction, as it can be interfaced with any existing SCADA and remote control system in addition to pressure sensors installed at the critical nodes and supply inlets.

Applications

- A well-planned pressure management program will extend the life of the system increasing safety and reliability. The CSA XLC 310/410-T is designed to automatically optimize the downstream pressure with a real time adjustment as a function of demand, flow rate and pressure values at the critical nodes, obtained with CSA controllers and web interface. Setting can be easily changed from remote from any portable device with a powerful and intuitive programming interface.

Additional features

- XLC 310/410-T-FR pressure management valve with back-flow prevention.
- XLC 310/410-T-H pressure management valve with high sensitivity pilot.
- XLC 310/410-T-5 pressure management valve with solenoid control.

Accessories

- Linear position transmitter with 4-20 mA output Mod. CSA CSPL.
- On-off position transmitter Mod. CSA CSPO.
- Pressure measurement kit.
- Self-flushing and high capacity filter.

Working conditions

- Fluid: treated water.
- Minimum operating pressure: 0,7 bar.
- Maximum operating pressure: 16 bar.
- Maximum temperature: 70°C.

Note to the engineer

- Available with several CSA controllers namely DC1, DC2, DC3 designed to be either power supplied to guarantee real time communication through web interface, or provided with battery and if required turbines, depending on the project requirements and the level of informations exchanged back and forth to the valve.

Downstream pressure pilot adjustment range

- Blue spring: 0,7 to 7 bar.
- Red spring: 1,5 to 15 bar.
- Values lower than 0,7 available with high sensitivity pilots.

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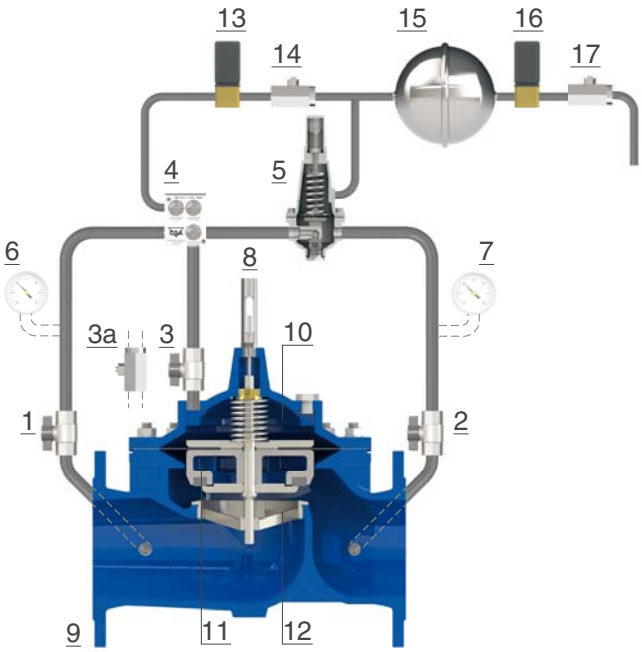
Operating principle



The CSA model XLC 310/410-T is an automatic control valve operated by a 2 ways pilot (5) whose cover receives pressure from a secondary line, onto which two solenoids (13 and 16) are acting through signals from a CSA controller linked to flow and pressure measurement devices. The purpose of this valve is to change the downstream pressure reduction set-point according to a flow rate curve that can be modified. Therefore should the system require an increase of the downstream pressure value the solenoid (13) will open in response to an impulse, vice-versa the 16 will decrease it by discharging pressure into atmosphere.
Needle valves (14, 17) and the buffer (15) are required to throttle the flow and improve the valve's stability. The flow in and out of the main chamber (10) is controlled by the CSA exclusive unit regulation device with filter called GR.I.F.O. (4) and provided with three needle valves and flow stabilizers, needed for the valve's response time and accuracy also in case of rapid variation in demand.

Installation layout

In the following installation lay-out the CSA valve XLC 310/410-T (1) receives impulses from the CSA controller (2), either power supplied or battery operated, working in combination with flow rate (3) and pressure measurement (4) devices (located near the valve or on critical points of the networks). Anti-surge combination air valves FOX 3F AS (6, 7) are recommended upstream and downstream as well as a pressure relief valve, like CSA direct acting model VSM (5) to prevent rise in pressure on the main line.

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