

Double chamber proportional pressure reducing valve XLC 300/400-DC-PR



The CSA double chamber proportional pressure reducing valve is a globe pattern hydraulically operated automatic control valve that, installed in-line, will reduce and stabilize the upstream pressure to a lower downstream value according to a fixed ratio. Equipped with double chamber technology the valve is extremely reactive, increasing the safety and reliability of the line. Produced in compliance with PN 16/25 bar pressure standards and entirely made in ductile cast iron FBT epoxy painted and stainless steel, the valve is provided with anti-cavitation low flow stability system.

Applications

- To perform a double pressure reduction stage in combination with other CSA reducing control valves.
- The valve is used on the inlet supply line of storage tanks to stabilize pressure upstream of CSA valves for level control either mechanical or pilot operated.
- On gravity fed supply lines and long downhill slopes to dissipate high differences in elevation, with multiple installations.

Accessories

- Pressure measurement kit.
- Self-flushing and high capacity filter.
- Mechanical flow limiter.
- Double cage CP for high differential pressures and reduced noise.

Note to the engineer

- Inlet and outlet pressure, and flow rate are required for the proper sizing.
- A minimum length of 3 DN downstream of the valve is recommended for the best accuracy.
- The downstream pressure will change depending on the inlet pressure and following a fixed ratio.

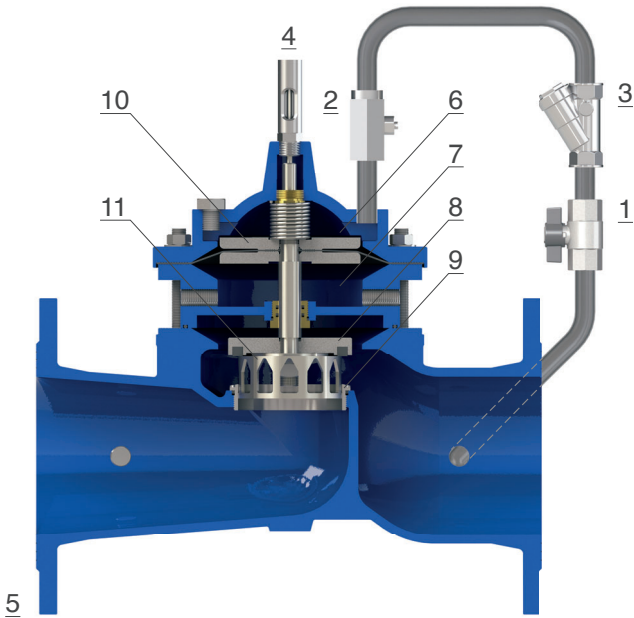
Additional features

- XLC 300/400-DC-PR-FR double chamber proportional pressure reducing valve with back-flow prevention.
- XLC 300/400-DC-PR-5 double chamber proportional pressure reducing valve with solenoid control.

Working conditions

- Fluid: treated water.
- Minimum operating pressure: 0,7 bar.
- Maximum operating pressure: 25 bar.
- Maximum temperature: 70°C.

Operating principle



The CSA Model XLC 300/400-DC-PR is an automatic control valve with double chamber technology, operated by means of the downstream pressure force (1) acting on the upper part of the control chamber (6) that separates the lower part with fluid flow from the intermediate chamber (7), in communication with the atmosphere. Due to the difference between the areas of the seal disks of the upper chamber (10) and the obturator (8), the valve will reduce the upstream pressure following a fixed ratio even in static conditions. This is due to the net force resulting from the downstream pressure acting on two difference surfaces.

The AC system (11) the valve is equipped with, allows for low flow stability and a higher resistance to cavitation compared with the standard design.

The flow in and out of the upper control chamber is regulated by the CSA high sensitivity needle valve (2) in stainless steel, needed to regulate the response time of the valve and to guarantee accuracy also in case of rapid variation in demand.

Installation layout

The installation lay-out of the XLC 300/400-DC-PR, in combination with a downstream pilot operated pressure stabilizing control valve XLC 310/410, includes sectioning devices and by-pass for maintenance operations along with a filter to prevent dirt from reaching the control valves. Anti-surge combination air valves FOX 3F AS are recommended upstream and downstream of the installation, as well as direct acting pressure relief models VSM between the two pressure reducing units and further downstream.

