



DNS Downstream

PRESSURE REDUCING & STABILISING CONTROL VALVE

DATA SHEET

DNS XLC Downstream Pressure Reducing & Stabilising Control Valve

DNS XLC 310 Reduced Bore

DNS XLC 410 Full Bore

The DNS XLC 310 & 410 models are globe-pattern hydraulically operated automatic control valves that reduce and stabilise the downstream pressure to a constant value, regardless of variation in demands and upstream pressure conditions. Normally equipped with visual position indicator and entirely made in ductile cast iron with FBT epoxy coating and stainless steel, the valve is designed to reduce head loss, throttling noise and cavitation damage. The DNS pressure reducing stabilising valves XLC 310 & 410 are extremely versatile and can be used for a wide range of applications.



Product Codes

Size [mm]	Trim	0.7 Bar – 7 Bar Product Codes	1.5 Bar – 15 Bar Product Codes
80	Reduced Bore	DNS-80R-310-0.7/7-PN16-PRV	DNS-80R-310-1.5/15-PN16-PRV
100	Reduced Bore	DNS-100R-310-0.7/7-PN16-PRV	DNS-100R-310-1.5/15-PN16-PRV
150	Reduced Bore	DNS-150R-310-0.7/7-PN16-PRV	DNS-150R-310-1.5/15-PN16-PRV
200	Reduced Bore	DNS-200R-310-0.7/7-PN16-PRV	DNS-200R-310-1.5/15-PN16-PRV
300	Reduced Bore	DNS-300R-310-0.7/7-PN16-PRV	DNS-300R-310-1.5/15-PN16-PRV
50	Full Bore	DNS-50F-410-0.7/7-PN16-PRV	DNS-50F-410-1.5/15-PN16-PRV
65	Full Bore	DNS-65F-410-0.7/7-PN16-PRV	DNS-65F-410-1.5/15-PN16-PRV
80	Full Bore	DNS-80F-410-0.7/7-PN16-PRV	DNS-80F-410-1.5/15-PN16-PRV
100	Full Bore	DNS-100F-410-0.7/7-PN16-PRV	DNS-100F-410-1.5/15-PN16-PRV
150	Full Bore	DNS-150F-410-0.7/7-PN16-PRV	DNS-150F-410-1.5/15-PN16-PRV
200	Full Bore	DNS-200F-410-0.7/7-PN16-PRV	DNS-200F-410-1.5/15-PN16-PRV
250	Full Bore	DNS-250F-410-0.7/7-PN16-PRV	DNS-250F-410-1.5/15-PN16-PRV
300	Full Bore	DNS-300F-410-0.7/7-PN16-PRV	DNS-300F-410-1.5/15-PN16-PRV



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Applications

Downstream of pumps to reduce the pressure on the main supply line.

Installed in derivation from the main line to stabilise the pressure of secondary line and water users.

As a protection against rise in pressure of industrial equipment and civil installations.

On the inlet supply line of storage tanks to stabilise pressure and flow required for the level control.

Accessories

Linear position transmitter with 4-20 mA output Mod. DNS CSPL.

On-off position transmitter Mod. CSA CSPO.

Pressure measurement kit.

Self-flushing and high capacity filter.

Note to the engineer

Inlet and outlet pressure and flow rate are required for proper sizing.

DNS anti-cavitation low flow stability plugs are recommended to provide an accurate regulation in case of low flow conditions.

A minimum length of 3 DN downstream of the valve is recommended for the best accuracy.

Additional Features

XLC 310/410-FR downstream pressure reducing with back-flow prevention.

XLC 310/410-H downstream pressure reducing with high sensitivity pilot.

XLC 310/410-G downstream pressure reducing with over pressure guard.

Working Conditions

Fluid: Treated water.

Minimum operating pressure: 0.7 Bar.

Maximum operating pressure: 25 Bar.

Maximum temperature: 70°C.

Downstream pressure pilot adjustment range

Blue spring: 0.7 to 7 Bar.

Red spring: 1.5 to 15 Bar.

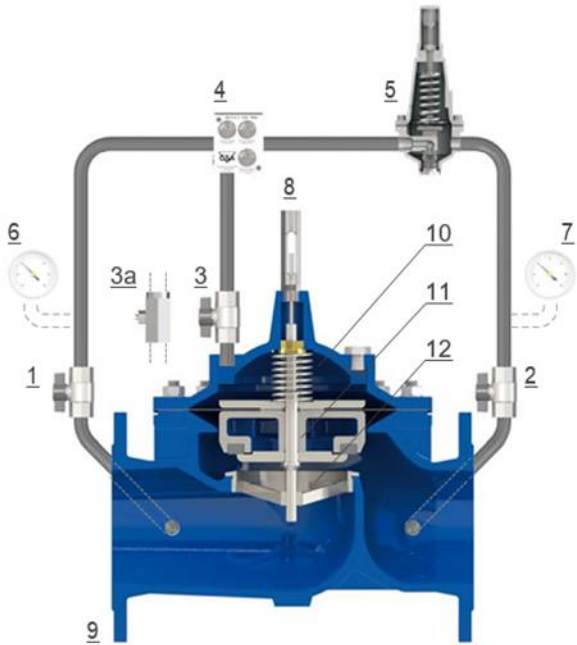
Higher values up to 25 Bar on request.

Values lower than 0.7 available with high sensitivity pilots.



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Operating Principle



The DNS models XLC 310/410 are automatic control valves operated by a 2-ways pilot (5) with pre-set set and adjustable value.

Should the downstream pressure rise above the pilot set point, the latter will throttle and limit the flow to direct inlet pressure to the main chamber (10), thus pushing down the obturator (11) to generate the head loss required for the valve (9) to reduce and stabilise the downstream pressure to a constant value.

Should the downstream pressure fall below the pilot set point, the obturator (11) will raise increasing the passage through the seat (12), thus reducing the head loss followed by the rise in pressure.

The flow in and out of the main chamber (10) is controlled by the DNS unit regulation device with filter GR.I.F.O. (4) provided with three needle valves and flow stabilisers, needed for the valve's response time and accuracy also in case of rapid variation in demand.

Thanks to the isolation ball valves (1-2-3) the control circuit and its components can be maintained without interrupting the flow through the main line.

