Upstream Pressure Relief Valve - E3116-10 / E4116-10

E3116-10 / E4116-10 hydraulically operated automatic valve installed on a main line branch, relieves the upstream pressure when it exceeds an adjustable set point.

Equipped with a visual position indicator in the standard version, and constructed entirely of stainless steel and epoxy coated ductile iron using FBT (fluid bed technology), the valve is designed to reduce pressure drops, vibrations and cavitation-related damage. The extremely versatile E3116-10 / E4116-10 valve can be used for a wide range of applications.

		PN 10		PN 16	
Version	**DN (mm)**	**Mass (kg)**	**References**	**Mass (kg)**	**References**
E3116-10	80	26.00	E36A8016P10	26.00	E36A8016P10
E3116-10	100	32.00	E36B1016P10	32.00	E36B1016P10
E3116-10	125	48.00	E36B1216P10	48.00	E36B1216P10
E3116-10	150	55.00	E36B1516P10	55.00	E36B1516P10
E3116-10	200	97.00	E36B2010P10	97.00	E36B2016P10
E3116-10	250	172.00	E36B2510P10	172.00	E36B2516P10
E3116-10	300	288.00	E36B3010P10	288.00	E36B3016P10
E3116-10	400	496.00	E36B4010P10	496.00	E36B4016P10
E3116-10	500	862.00	E36B5010P10	862.00	E36B5016P10
E3116-10	600	1002.00	E36B6010P10	1002.00	E36B6016P10

		PN 10		PN 16	
Version	**DN (mm)**	**Mass (kg)**	**References**	**Mass (kg)**	**References**
E4116-10	40/50	20.00	E46A5016P10	20.00	E46A5016P10

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		PN 10		PN 16	
Version	DN (mm)	Mass (kg)	References	Mass (kg)	References
E4116-10	65	21.00	E46A6516P10	21.00	E46A6516P10
E4116-10	80	26.00	E46A8016P10	26.00	E46A8016P10
E4116-10	100	40.00	E46B1016P10	40.00	E46B1016P10
E4116-10	150	84.00	E46B1516P10	84.00	E46B1516P10
E4116-10	200	138.00	E46B2010P10	138.00	E46B2016P10
E4116-10	250	248.00	E46B2510P10	248.00	E46B2516P10
E4116-10	300	421.00	E46B3010P10	421.00	E46B3016P10
E4116-10	400	784.00	E46B4010P10	784.00	E46B4016P10
E4116-10	600	2250.00	E46B6010P10	2250.00	E46B6016P10

Applications

- Downstream of pumps to protect the system from uncontrolled pressure increases when switching on or off.
- As protection of industrial and civil plants from uncontrolled pressure increases.
- Downstream of pressure reduction or modulation devices to avoid unwanted pressure fluctuations.

Accessories

- The position indicator with 4-20 mA output.
- The open-close indicator.
- Manometers.
- Self-cleaning high capacity filter.

Notes to the designer

- Inlet and outlet pressure, flow rate and application are required for cavitation sizing and analysis.
- Recommended flow rates and working conditions are given in the E3000 - E4000 valve catalogue.
- When the valve discharges to atmosphere, the anti-cavitation system is recommended.

Optional configurations

- Upstream pressure relief valve with anti-return system.
- Pressure relief valve with solenoid control valve.
- To improve the reaction time of the valve it can be supplied without the control unit

Operating conditions

- Fluid: treated water.
- Minimum pressure: 0,7 bar.

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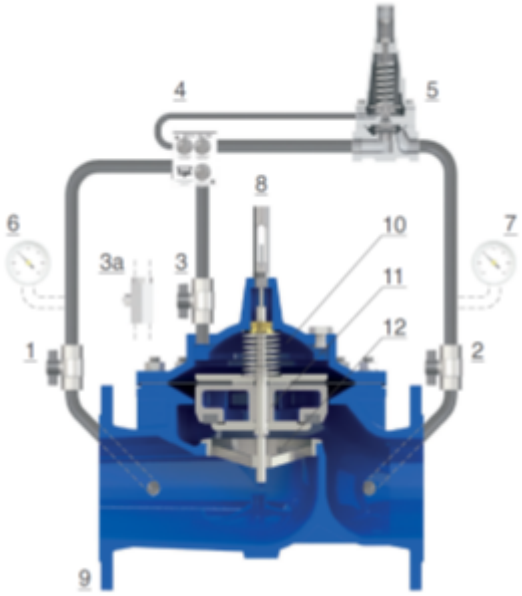
- Maximum pressure: 25 bar. Higher on request.
- Maximum temperature: 70 °C.

Pilot relief adjustment field

- Blue spring: 0.7 to 7 bar.
- Red spring: 1.5 to 15 bar.
- Higher values up to 25 bar on request

How it works



The valve is controlled by a high capacity two-way pilot (5) with adjustable calibration which, through the regulation unit (4), receives the upstream pressure value.

If the latter exceeds the calibration value, the pilot opens, discharging pressure from the control chamber (10) with consequent rise of the shutter (11) and flow through the seat (12) to protect the system.

When the upstream pressure drops below the set threshold, the pilot modulates the flow in the circuit, therefore the pressure in the valve chamber increases, bringing the shutter towards the closed position, which stops the flow through the main valve.

The pressure entering and exiting the main chamber (10) is controlled by the exclusive regulation unit (4), equipped with a filter and three adjustable needle valves, necessary to ensure stability and make the opening and closing speeds of the valve independent of each other.

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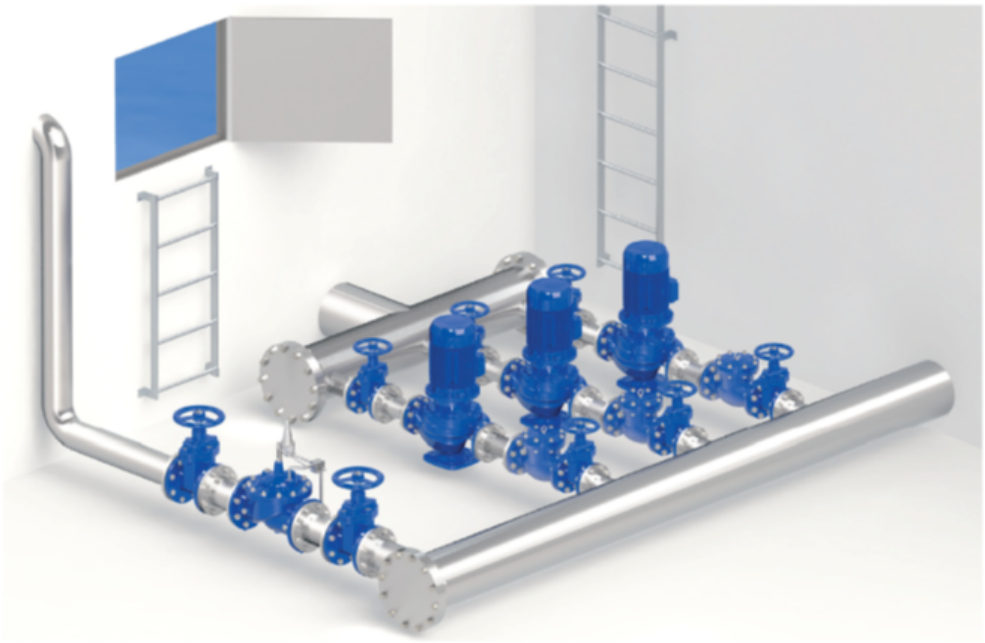
Installation diagram



The following figure shows the recommended installation scheme of the E3116-10 / E4116-10 valve, used as a relief valve on a branch of the main line to protect a group of pumps.

The gate valve is required for maintenance operations; where possible, a filter is also recommended, to prevent impurities from reaching the control valve. The pilot setting value must be set at least 0.5-1 bar above the maximum dynamic pressure.

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