01/07/2026
VPPCV21SPD616

Flow Rate Automatic Control Valve - E3114-00 / E4114-00

It is a globe pattern hydraulically operated automatic control valve that limits the flow to a pre-set value, regardless of pressure variations.

In case of flow rate lower than the required set point the valve will be fully opened.

The valve is supplied with an orifice plate assembly, needed for the proper functioning and connected to the pilot.

Normally equipped with visual position indicator and entirely made in ductile cast iron with FBT (fluid bed technology) epoxy coating and stainless steel, the valve is designed to reduce head loss, throttling noise and cavitation damage.

		PN 10		PN 16	
Version	**DN (mm)**	**Mass (kg)**	**References**	**Mass (kg)**	**References**
E3114-00	80	30.00	E34A8016P00	30.00	E34A8016P00
E3114-00	100	37.00	E34B1016P00	37.00	E34B1016P00
E3114-00	125	56.00	E34B1216P00	56.00	E34B1216P00
E3114-00	150	63.00	E34B1516P00	63.00	E34B1516P00
E3114-00	200	109.00	E34B2010P00	109.00	E34B2016P00
E3114-00	250	187.00	E34B2510P00	187.00	E34B2516P00
E3114-00	300	304.00	E34B3010P00	304.00	E34B3016P00
E3114-00	400	515.00	E34B4010P00	515.00	E34B4016P00
E3114-00	500	862.00	E34B5010P00	862.00	E34B5016P00
E3114-00	600	1002.00	E34B6010P00	1002.00	E34B6016P00

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		PN 10		PN 16	
Version	**DN (mm)**	**Mass (kg)**	**References**	**Mass (kg)**	**References**
E4114-00	40/50	24.00	E44A5016P00	24.00	E44A5016P00
E4114-00	65	26.00	E44A6516P00	26.00	E44A6516P00
E4114-00	80	31.00	E44A8016P00	31.00	E44A8016P00
E4114-00	100	48.00	E44B1016P00	48.00	E44B1016P00
E4114-00	150	96.00	E44B1516P00	96.00	E44B1516P00
E4114-00	200	153.00	E44B2010P00	153.00	E44B2016P00
E4114-00	250	264.00	E44B2510P00	264.00	E44B2516P00
E4114-00	300	440.00	E44B3010P00	440.00	E44B3016P00
E4114-00	400	784.00	E44B4010P00	784.00	E44B4016P00
E4114-00	600	2250.00	E44B6010P00	2250.00	E44B6016P00

Applications

- Downstream of pumps to prevent overload and for cavitation protection.
- On the inlet supply lines of tanks to prevent excessive flow.
- In distribution networks and on the supply lines of residential and industrial districts to limit the flow during peak hours.
- In filtration systems to prevent excessive flow avoiding damages and malfunctioning.

Accessories

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

Note to the engineer

- Inlet and outlet pressure, flow rate are required for the proper sizing.
- Anti-cavitation low flow stability plugs are recommended to provide an accurate regulation in case of low flow conditions.
- For the best accuracy leave 5 DN between the valve and the orifice plate and 3 DN downstream of it (picture in the next page).

Additional features

- E3114-00-FR flow rate control valve with back-flow prevention.
- E3114-00-H flow rate control valve with high sensitivity pilot.

Working conditions

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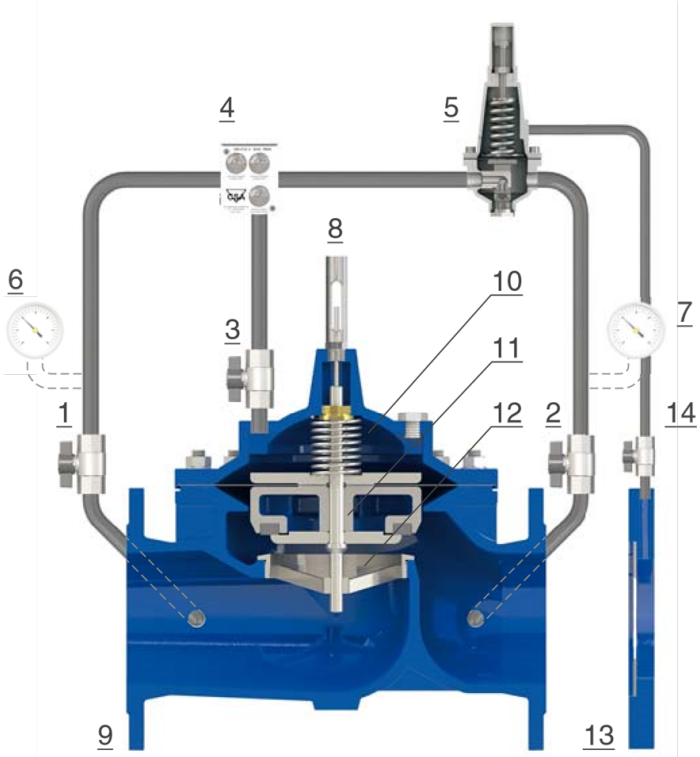
- Fluid: treated water.
- Minimum operating pressure: 1,2 bar.
- Maximum operating pressure: 16 bar. Higher on request.
- Maximum temperature: 70 °C.

Flow rate control pilot adjustment range

- The orifice plate assembly is calculated and machined according to the maximum flow rate. An adjustment range of the value is possible according to the regulation flow chart supplied with the valve.

Operating principle



It is operated by a two 2 ways pilot (5), for flow control, with pre-set set and adjustable values, sensing the drop in pressure produced by the orifice plate (13), where a stainless steel disk is inserted inside a flange and connected to the pilot with a sensing line (14) non supplied.

Should the flow exceed the maximum value the differential pressure will increase, and pilot (5) will throttle and limit the flow to direct inlet pressure to the main chamber (10), to generate the head loss required through the seat (12) for the valve (9) to control the flow.

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Should the flow remain below the pilot's set point, the differential pressure across the orifice plate (13) will be less than the pilot's (5) spring force, therefore the valve will remain fully open.

Pressure in and out of the main chamber (10) is controlled by the regulation device with filter (4), needed for the valve's response time and accuracy.

Installation layout

The picture shows the recommended lay-out of the valve. The flange orifice (8), calculated and machined according to the project's requirements, is connected to the valve's pilot (9).

Sectioning devices (1, 2) and by-pass are very important for maintenance operations, as well as the filter (3) to prevent dirt from reaching the control valve.

Anti-surge combination air valves (6, 7) are recommended, as well as a pressure relief valve, like DRVD (5) to prevent rise in pressure on the main line.

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