Pressure Control Valves

Pilot-operated Control Valves RP 820 Eck

Pilot-operated Back Pressure Regulator

Technical Data

Connection DN	40 - 150
Nominal Pressure PN	10 - 100
Inlet Pressure	2 - 63 bar
Differential Pressure	minimum 2 bar
Outlet Pressure	up to 61 bar
K_{vs}-Value	20 - 250 m³/h
Temperature	130 °C
Medium	liquids and gases

Description

Self-acting back pressure regulators are simple control valves offering accurate control while being easy to install and maintain. They control the pressure upstream of the valve without requiring pneumatic or electrical control elements.

The RP 820 back pressure regulator is a pilot-controlled control valve consisting of a main valve, a pilot valve complete with restrictor assembly and built-in strainer mounted on the cover of the main valve, non-return valve and restrictor valves. The valve cone can be fitted with a soft or metallic seal.

When the pipeline is depressurised the main valve is kept closed by a preloaded spring.

When the inlet pressure is above the set pressure the pilot valve is kept open by a piston. The control medium can flow towards the valve outlet. Restrictor D1 produces a pressure drop causing the outlet pressure to be almost equal to the pilot pressure in the main valve piston. The inlet pressure overcomes the pilot pressure and closing force of the spring and opens the main valve.

When the inlet pressure has reached the set pressure, the pilot valve restricts the flow. This causes the pilot pressure to rise and push the main valve piston into a controlling position. The restrictors D1 and D2 are used to optimise the control characteristics. The bypass fitted with a non-return valve ensures quick closing.

When the inlet pressure falls below the set pressure the pilot valve closes. The pilot pressure is equal to the inlet pressure. The main valve closes as the piston diameter is greater than the valve seat. The spring also forces the valve to close.

The valve is piped internally. The pulse lines must be installed on-site.

These valves are no shut-off elements ensuring a tight closing of the valve. In accordance with DIN EN 60534-4 and/or ANSI FCI 70-2 they may feature a leakage rate in closed position in compliance with the leakage classes III or V.

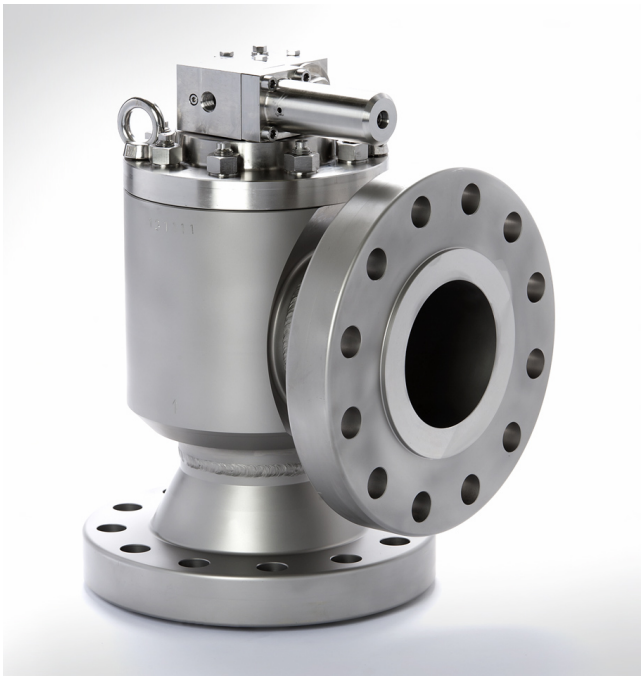
Standard

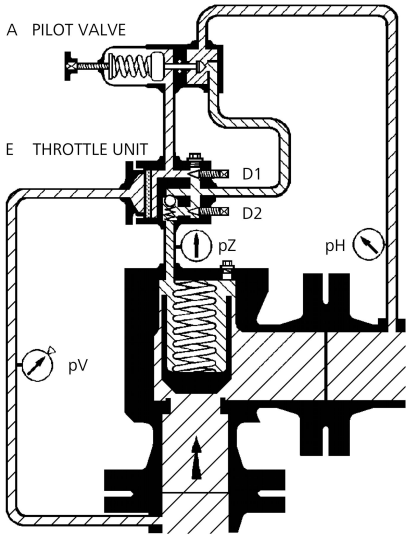
- Pilot valve made of CrNiMo steel
- Throttle block with integrated strainer and throttle valves completely made of CrNiMo steel
- Internal piping made of CrNiMo-steel

Options

- Damping for gas applications
- Hard-faced valve cone and seat
- Various O-ring and seal materials suitable for your medium
- Special materials such as Duplex, Superduplex, Hastelloy® or titanium, others on request
- Special connections: ANSI or JIS flanges, other connections on request
- Special versions on request

Operating instructions, know how and safety instructions must be observed. All the pressure has always been indicated as overpressure. We reserve the right to alter technical specifications without notice.





MAIN VALVE

K_{vs} values [m³/h]							
nominal diameter DN	40	50	65	80	100	125	150
K_{vs} value m³/h	20	32	50	60	70	150	250

Set Pressure Ranges [bar], Nominal Pressure				
2 - 5	4 - 12	10 - 20	15 - 40	45 - 63
PN 10	PN 25	PN 40	PN 63	PN 100

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Materials		
Temperature	80 °C	130 °C
Body	Steel optional CrNiMo-steel	
Cover	Steel optional CrNiMo-steel	
Innenteile	Cr-steel optional CrNi-steel or CrNiMo-steel	
Valve Seal	NBR or CrNiMo-steel	EPDM or CrNiMo-steel
O-ring	NBR	EPDM
Pilot Valve	CrNiMo-steel	CrNiMo-steel
Throttle Unit		

Dimensions [mm]								
nominal pressure PN	size	nominal diameter DN						
		40	50	65	80	100	125	150
10 - 16	A*	115	125	145	155	175	200	225
25 - 40	A*	115	125	145	155	175	200	225
63 - 100	A*	130	150	170	190	215	250	275
alle PN	B	200	210	210	230	260	290	300
alle PN	ø C	160	160	180	200	220	280	280

* Overall length tolerances in acc. with DIN EN 558

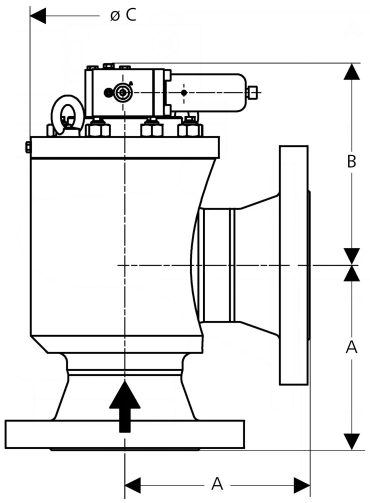
Weights [kg]							
nominal pressure PN	nominal diamter DN						
	40	50	65	80	100	125	150
10 - 16	*	*	*	70	*	*	*
25 - 40	*	40	*	*	100	*	*
63 - 100	35	*	50	*	*	180	200

* on request

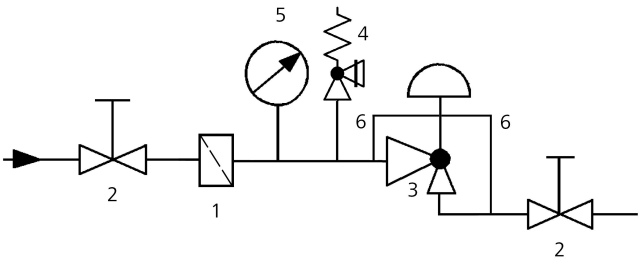
Customs Tariff Number
84811019

Special designs on request.
The pressure has always been indicated as overpressure.
Mankenberg reserves the right to alter or improve the designs or specifications of the products described herein without notice.

Dimensional Drawing



Recommended Installation



1 Strainer*
2 Shut-off Valves
3 Overflow Valve*
4 Safety Valves*
5 Pressure Gauge
6 Sense Line

Sense line connection 10 x DN before and behind the valve
*Use MANKENBERG-Products