

## PRESSURE CONTROL

# Back pressure regulators RP 824

Valve for high to very high flow rates



### Technical data

Connection DN	100 - 800
Nominal pressure PN	10 - 25
Inlet pressure	2 - 20 bar
Differential pressure	min. 2 bar
$K_{vs}$ value	60 - 2100 m <sup>3</sup> /h
Temperature medium	130 °C liquids

### 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 824 back pressure regulator are pilot-controlled control valves of tubular design consisting of a main valve, a pilot valve connected with the main valve via pipes and a restrictor assembly with built-in strainer. The valve cone is fitted with a metallic seal.

When the inlet pressure is above the set pressure the pilot valve is kept open by its control mechanism. Restrictor D1 produces a pressure drop causing the outlet pressure to be almost equal to the pilot pressure in the main valve. 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 in which opening and closing forces are in balance.

When the inlet pressure falls below the set pressure the pilot valve closes. The pilot pressure is equal to the inlet pressure, the forces acting on the piston are in equilibrium and the main valve is kept closed by its spring.

The restrictors are used to optimise the control characteristics. The bypass line around D2 which is fitted with a non-return valve, ensures quick closing. 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 stainless steel
- » Throttle block with integrated strainer and throttle valves completely made of stainless steel
- » Internal piping made of stainless steel

### Options

- » Nominal pressure level
- » Special connections: Aseptic, ANSI or JIS flanges, welding ends, other connections on request
- » Special versions on request

### Product



Picture similar

### Technical specification

#### $K_{vs}$ values [m<sup>3</sup>/h]

nominal diameter DN

100	125	150	200	250	300
60	100	120	180	250	400

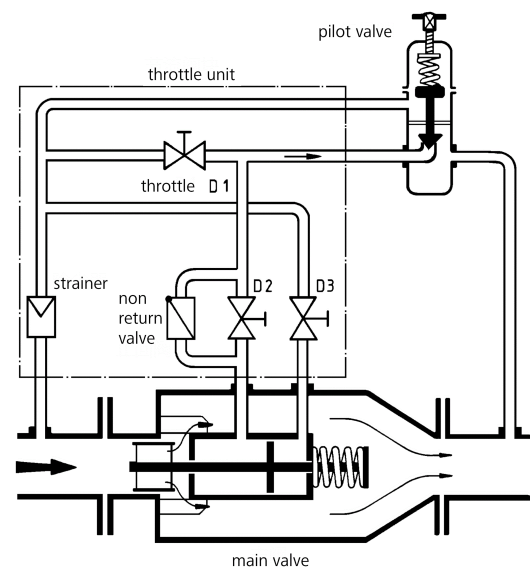
#### $K_{vs}$ values [m<sup>3</sup>/h]

nominal diameter DN

350	400	450	500	600	700	800
600	800	1100	1200	1800	2000	2100

#### Setting ranges [bar], nominal pressure

2 - 5	4 - 12	10 - 20
PN 10	PN 16	PN 25



## Materials

Materials		
Temperature	80 °C	130 °C
Body	steel optional stainless steel welded	
Internals	stainless steel	stainless steel
Valve seal	stainless steel	stainless steel
O-ring	NBR	EPDM
Pilot valve	stainless steel	stainless steel
Sence line		
Throttle unit		

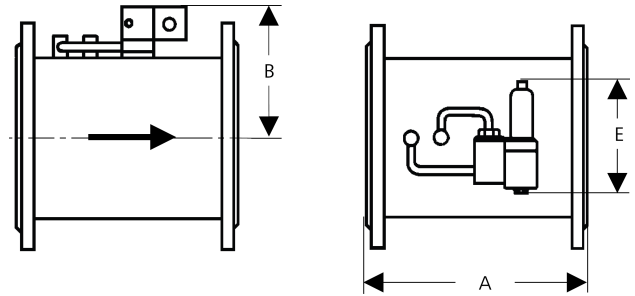
## Dimensions and weights

Dimensions [mm]													
size	nominal diameter DN												
	100	125	150	200	250	300	350	400	450	500	600	700	800
A*	300	325	350	400	450	500	550	600	650	700	800	900	1000
B max.	200	200	220	240	270	300	320	350	380	400	450	500	550
E max.	270	270	270	270	270	270	270	270	270	270	270	270	270

\*overall length tolerances in acc. with DIN EN 558

Weights [kg]													
nominal pressure	nominal diameter DN												
	100	125	150	200	250	300	350	400	450	500	600	700	800
PN 16	60	60	65	75	120	150	190	240	300	360	420	480	540
PN 25	75	75	80	90	135	165	220	280	360	400	460	580	720

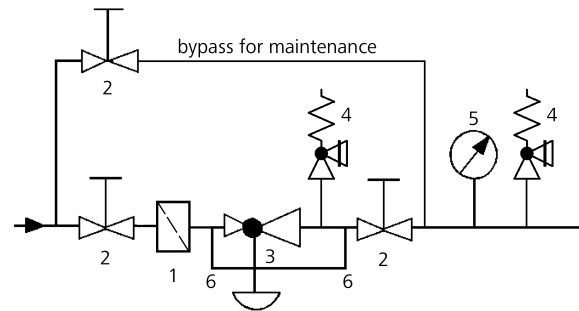
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## Recommended installation

- |                           |                  |
|---------------------------|------------------|
| 1 Strainer                | 4 Safety valve   |
| 2 Shut-off valves         | 5 Pressure gauge |
| 3 Back pressure regulator | 6 Sense line     |

Sense line connection 10 DN before and behind the valve



### Authorised Distributor:



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Please send us your enquiry and allow us to advise you. Special designs on request.  
The pressure has always been indicated as overpressure. Mankenberg reserves the right to alter technical specifications without notice.