

Self-operated Pressure Regulators

Type 2373 Pressure Reducing Valves for corrosive media



Application

Pressure regulators for set points from **0.8 to 16 bar** · Valve nominal sizes **DN 15 to 50¹⁾** · Nominal pressure **PN 40** · Suitable for gases and liquids up to **80 °C**

The valve **closes** when the downstream pressure **rises**.



The Type 2373 Pressure Reducing Valve regulates the downstream pressure to the adjusted set point within the range from 0.8 to 16 bar.

Special features

- Low-maintenance proportional regulators requiring no auxiliary energy
- All wetted parts free of non-ferrous metal
- Wide set point range and convenient set point adjustment using a nut
- Soft-seated plug for high shut-off requirements

Versions

Type 2373 Pressure Reducing Valve, consisting of:
Nominal size DN 15, 20, 25, 32, 40, and 50 · Actuator with rolling diaphragm made of EPDM, FPM or NBR · Valve with body made of corrosion-resistant steel 1.4470

ANSI version

Special version

With special materials for applications involving sea water:
1.4538, duplex steel 1.4469 · Nickel-base alloy: 9.4610
Flanges in higher pressure ratings · Other special materials on request · With metal cover (to protect the set point springs)

Accessories

Screw fitting for control line connection · Control line kit available for tapping the pressure directly at the valve body



Fig. 1: Type 2373 Pressure Reducing Valve

¹⁾ Larger valve sizes on request

Principle of operation

The medium flows through the valve (1) as indicated by the arrow. The position of the plug (3) determines the flow rate across the area released between plug and valve seat (2).

The set point springs (7) are loaded by the set point adjuster (6). When relieved of pressure ($p_1 = p_2$), the valve is opened by the force of the set point springs.

The downstream pressure p_2 to be controlled is tapped downstream of the valve and transmitted over the control line (14) to the operating diaphragm (12) where it is converted into a positioning force. This force is used to move the valve plug (3) according to the force of the set point springs (7). The plug stem (5) with the plug is connected to the actuator stem (11) of the actuator (10).

The spring force is adjustable at the set point adjuster (6). When the force resulting from the downstream pressure p_2 rises above the adjusted set point, the valve closes proportionally to the change in pressure.

Installation of the regulators

Normally, the valve is installed with the actuator on top. Install pipelines horizontally.

For further details on installation refer to Mounting and Operating Instructions ► EB 2534.

The following points must be observed:

- The direction of flow must match the arrow on the valve body.
- Install a strainer (e.g. SAMSON Type 2 NI) upstream of the valve.

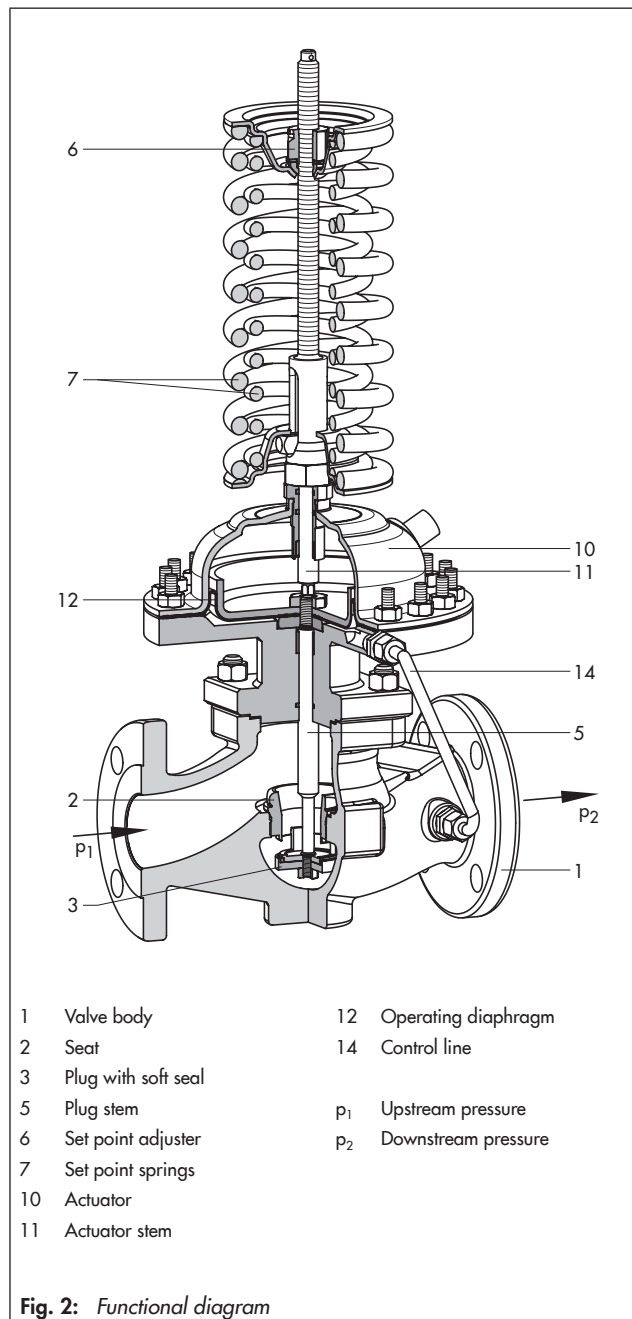


Table 1: Technical data · All pressure stated as gauge pressure

Type 2373 Pressure Reducing Valve	
Nominal size	DN 15 to 50 ¹⁾
Nominal pressure	PN 40
Max. permissible temperature	80 °C ²⁾
Max. permissible differential pressure Δp	See Table 3
Leakage class according to IEC 60534-4	
Metal seal	≤ 0.05 % of K_{VS} coefficient (Class I)
Soft seal	≤ 0.01 % of K_{VS} coefficient (Class IV)
Compliance	CE · EAC
Actuator	
Set point ranges	0.8 to 2.5 bar · 2 to 5 bar · 2.4 to 6.3 bar · 4.5 to 10 bar · 8 to 16 bar
Actuator area	See Table 4
Max. perm. pressure at actuator	
40 cm ²	25 bar
80 cm ²	25 bar
160 cm ²	16 bar

¹⁾ Larger valve sizes on request

²⁾ 20 °C for sea water (approx. 3.5 % salt content) with duplex 1.4462/1.4470 or 40 °C with super duplex 1.4410/1.4469

Table 2: Materials · Material numbers according to DIN EN

Valve	
Valve body	Cast stainless steel 1.4470
Seat and plug	Stainless steel
Soft seal	EPDM, FPM, NBR or PTFE
Seal	Graphite on metal core
Actuator	
Diaphragm case	1.4301
Diaphragm	EPDM, FPM or NBR

Table 3: K_{VS} coefficients and max. permissible differential pressures Δp

Nominal size	K_{VS} coefficients		Max. permissible differential pressures Δp	
	Standard version	Special version	Standard version	Special version
DN 15	4	1 · 2.5	10 bar	14 bar
DN 20	6.3			
DN 25	8			
DN 32	16	10	4 bar	10 bar
DN 40	20			
DN 50	32	16		8 bar

Dimensions

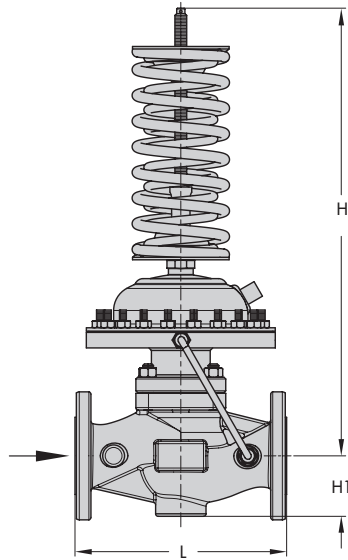


Fig. 3: Dimensions of Type 2373

Table 4: Dimensions in mm and weights in kg

Type 2373 Pressure Reducing Valve								
Nominal size		DN	15	20	25	32	40	50
Valve dimensions	Length L		130 mm	150 mm	160 mm	180 mm	200 mm	230 mm
	Height H1		55 mm			72 mm		
Set point ranges	0.8 to 2.5 bar	Height H	560 mm			575 mm		
		Actuator housing	ØD = 225 mm, A = 160 cm ²					
	2 to 5 bar	Height H	560 mm			575 mm		
		Actuator housing	ØD = 170 mm, A = 160 cm ²					
	2.4 to 6.3 bar	Height H	560 mm			575 mm		
		Actuator housing	ØD = 170 mm, A = 80 cm ²					
	4.5 to 10 bar	Height H	560 mm			575 mm		
		Actuator housing	ØD = 170 mm, A = 80 cm ²					
	8 to 16 bar	Height H	560 mm			575 mm		
		Actuator housing	ØD = 170 mm, A = 40 cm ²					
Weight ¹⁾ , approx.			19 kg	20 kg	20 kg	23 kg	26 kg	29 kg

¹⁾ The weights are based on the weight of the regulator with actuator area A = 80 cm². Add 4 kg for A = 160 cm².

Ordering text

Type 2373 Pressure Reducing Valve

DN ..., PN ...

Set point range ... bar

Optionally, accessories ...

Special version ...

Specifications subject to change without notice



SAMSON AG · MESS- UND REGELTECHNIK
 Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany
 Phone: +49 69 4009-0 · Fax: +49 69 4009-1507
 samson@samson.de · www.samson.de

T 2534 EN

2016-11-23 · English