

T 2534 EN

Type 2373 Pressure Reducing Valve

Self-operated Pressure Regulators for corrosive media



Application

Pressure regulators for set points from **0.8** to **16 bar** · Valve sizes **DN 15** to **50**¹⁾ · Pressure rating **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 strict shut-off requirements

Versions

Type 2373 Pressure Reducing Valve, consisting of:
Valve size DN 15, 20, 25, 32, 40 and 50 · Actuator with rolling diaphragm²⁾ made of EPDM or FKM · Valve with body made of corrosion-resistant steel 1.4470

ANSI version

Special version

With special materials for applications involving seawater:
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

²⁾ NBR 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.

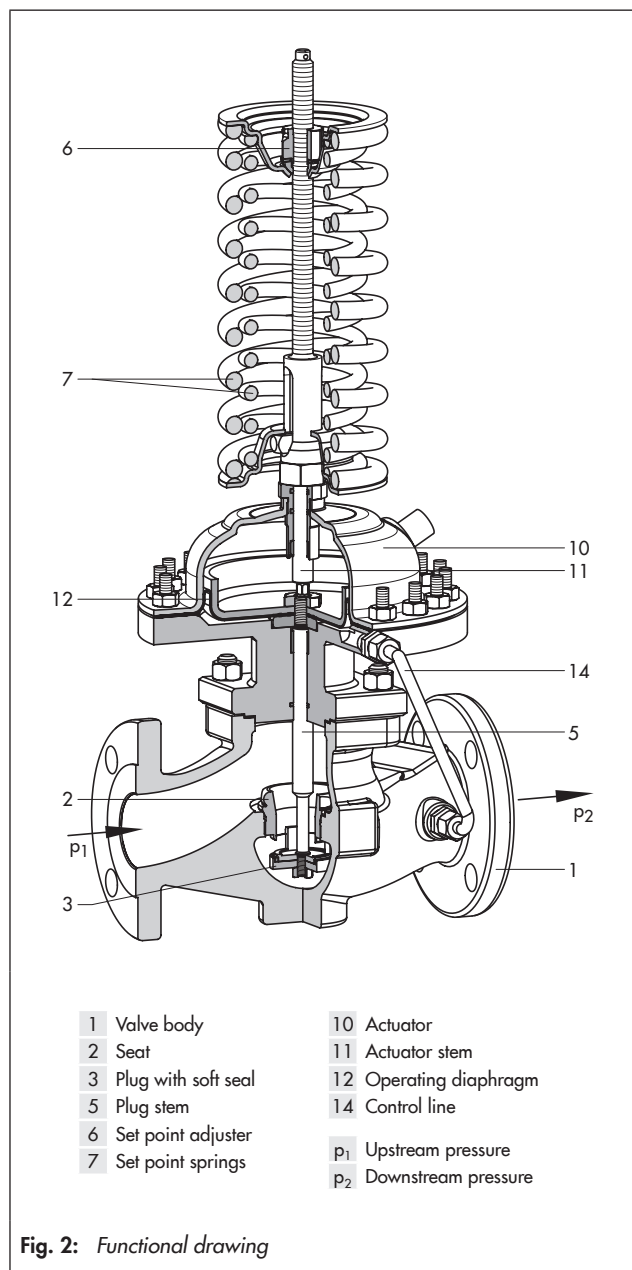


Fig. 2: Functional drawing

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

| | |
|---|--|
| Valve size | DN 15 to 50¹⁾ |
| Pressure rating | PN 40 |
| Max. permissible temperature | 80 °C ²⁾ |
| Max. permissible differential pressure Δp | Refer to 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 | Refer to 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 seawater (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 ¹⁾ | EPDM, FKM or PTFE |
| Seal | Graphite on metal core |
| Actuator | |
| Diaphragm case | 1.4301 |
| Diaphragm ¹⁾ | EPDM or FKM |

¹⁾ NBR on request

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

| Valve size | K_{VS} coefficients | | Max. permissible differential pressures Δp | |
|------------|-----------------------|---------|--|---------|
| | Standard | Reduced | Standard | Reduced |
| 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

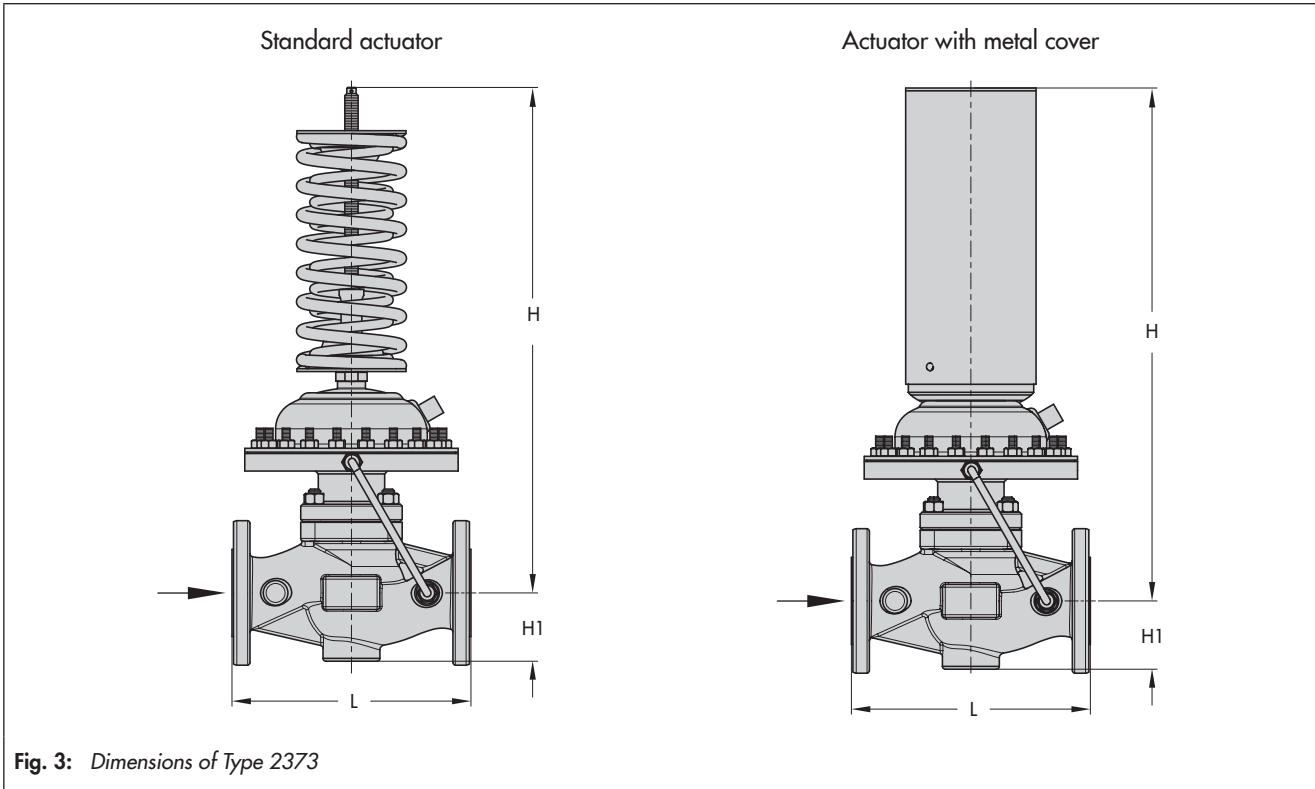


Fig. 3: Dimensions of Type 2373

Table 4: Dimensions in mm and weights in kg

| Valve 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 · 610 mm ²⁾ | | | 575 mm · 625 mm ²⁾ | | | |
| | | Actuator housing | ØD = 225 mm, A = 160 cm ² | | | | | | |
| | 2 to 5 bar | Height H | 560 mm · 610 mm ²⁾ | | | 575 mm · 625 mm ²⁾ | | | |
| | | Actuator housing | ØD = 170 mm, A = 160 cm ² | | | | | | |
| | 2.4 to 6.3 bar | Height H | 560 mm · 610 mm ²⁾ | | | 575 mm · 625 mm ²⁾ | | | |
| | | Actuator housing | ØD = 170 mm, A = 80 cm ² | | | | | | |
| | 4.5 to 10 bar | Height H | 560 mm · 610 mm ²⁾ | | | 575 mm · 625 mm ²⁾ | | | |
| | | Actuator housing | ØD = 170 mm, A = 80 cm ² | | | | | | |
| | 8 to 16 bar | Height H | 560 mm · 610 mm ²⁾ | | | 575 mm · 625 mm ²⁾ | | | |
| | | Actuator housing | ØD = 170 mm, A = 40 cm ² | | | | | | |
| | Weight ¹⁾ , approx. | | | 19 kg · 24 kg ²⁾ | 20 kg · 25 kg ²⁾ | 23 kg · 28 kg ²⁾ | 26 kg · 31 kg ²⁾ | 29 kg · 34 kg ²⁾ | |

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

2) For actuator with metal cover

Ordering text

Type 2373 Pressure Reducing Valve

DN ..., PN ...,

Set point range ... bar

Optionally, accessories ...

Special version ...