

# Self-operated Pressure Regulators



## Type 36-3 · Safety Shut-off Valve with Pressure Reducing Valve (SSV)

## Type 36-8 · Safety Excess Pressure Valve (SEV)

TÜV-typetested - for water -

### Application

Pressure regulators for set points from **2 to 11 bar** · Valves sizes **DN 15 to DN 100** · Nominal pressures **PN 16 to PN 40** · Suitable for water and other liquids up to **150 °C** and for non-flammable gases up to **80 °C**

### Special features

- Low-maintenance proportional regulators requiring no auxiliary energy
- Tight-closing, spring-loaded, single-seated valve with balanced valve plug
- Frictionless plug stem seal with stainless steel bellows
- Actuator with two independent operating diaphragms, permitting continued operation should one diaphragm fail
- Especially suitable for applications in district heating plants designed in accordance with DIN 4747. The regulators comply with AGFW (German District Heating Association) regulations

### Versions

**Type 36-3** · Safety Shut-off Valve with Pressure Reducing Valve (SSV) (Fig. 1) · The regulator controls the downstream pressure  $p_2$  to the adjusted set point · The valve closes when the downstream pressure rises

**Type 36-8** · Safety Excess Pressure Valve (SEV) (Fig. 2) · The regulator controls the upstream pressure  $p_1$  to the adjusted set point · The valve opens when the upstream pressure rises

### Special version (not TÜV-typetested)

- With FPM (FKM) diaphragms for oil or air

### Typetesting

The devices have been typetested for water by the German Technical Inspectorate, TÜV. The test mark is available on request.

### Ordering text

Safety Shut-off Valve with **Pressure Reducing Valve Type 36-3**  
or

**Safety Excess Pressure Valve Type 36-8**

DN...

Body material ..., PN ...

Set point range ... bar

Optionally, special version ...



Fig. 1 · Type 36-3 Pressure Reducing Valve



Fig. 2 · Type 36-8 Excess Pressure Valve

### Principle of operation (Fig. 4)

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

The pressure to be controlled is transmitted to the operating diaphragm (9) over a control line (12) and converted into a positioning force. This force moves the plug stem (4) and the valve plug (3) with it, opposing the force of the positioning springs (7). The spring force (pressure set point) can be adjusted using the set point adjuster (6).

The regulators are equipped with two independent operating diaphragms. This permits continued operation even if one diaphragm fails. To recognize a ruptured diaphragm, a visual indicator or optionally a pressure switch is installed in the intermediate ring (10), for example, for indication in a control room.

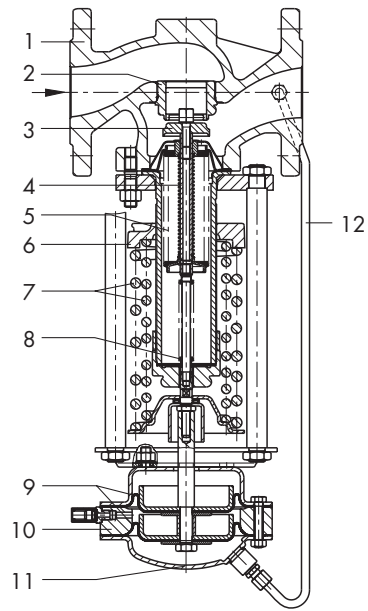
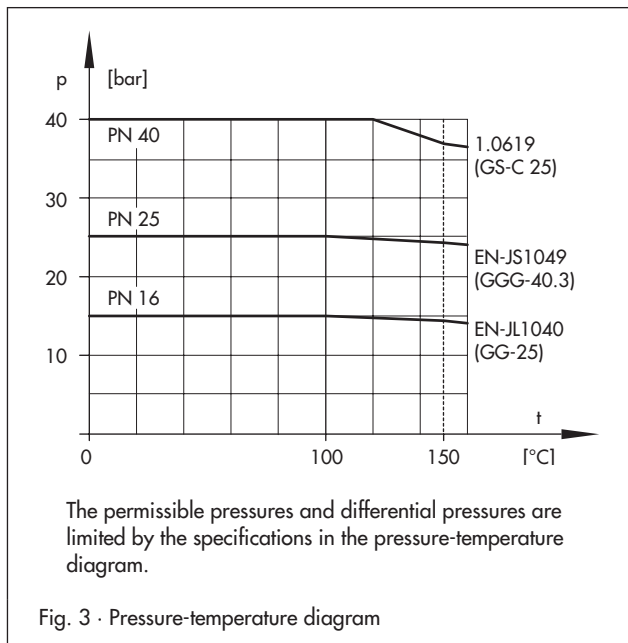
### Installation

The regulators are delivered ready for installation. They are only suitable for installation in horizontal pipelines. The following installation conditions must be kept:

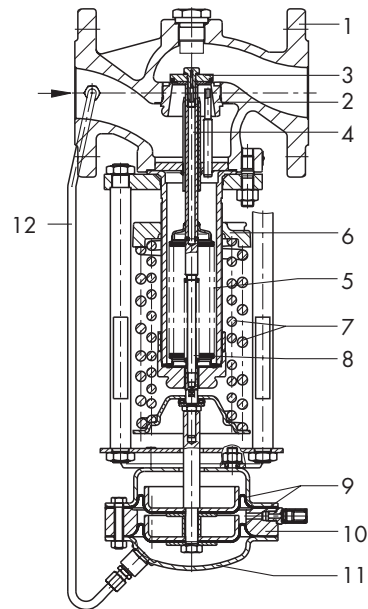
- The direction of flow must correspond with the arrow on the valve.
- The valve bonnet, including the actuator, must be vertically suspended.



### Pressure-temperature diagram acc. to DIN EN 12516-1



Type 36-3 Pressure Reducing Valve



Type 36-8 Excess Pressure Valve

- 1 Valve body
- 2 Seat (replaceable)
- 3 Plug
- 4 Plug stem
- 5 Balancing bellows
- 6 Set point adjuster
- 7 Positioning springs
- 8 Bellows seal
- 9 Double diaphragm
- 10 Intermediate ring with diaphragm rupture indicator
- 11 Actuator case
- 12 Control line

The pillars in the diagrams are turned with the actuator into the plane of projection!

Fig. 4 · Sectional drawings

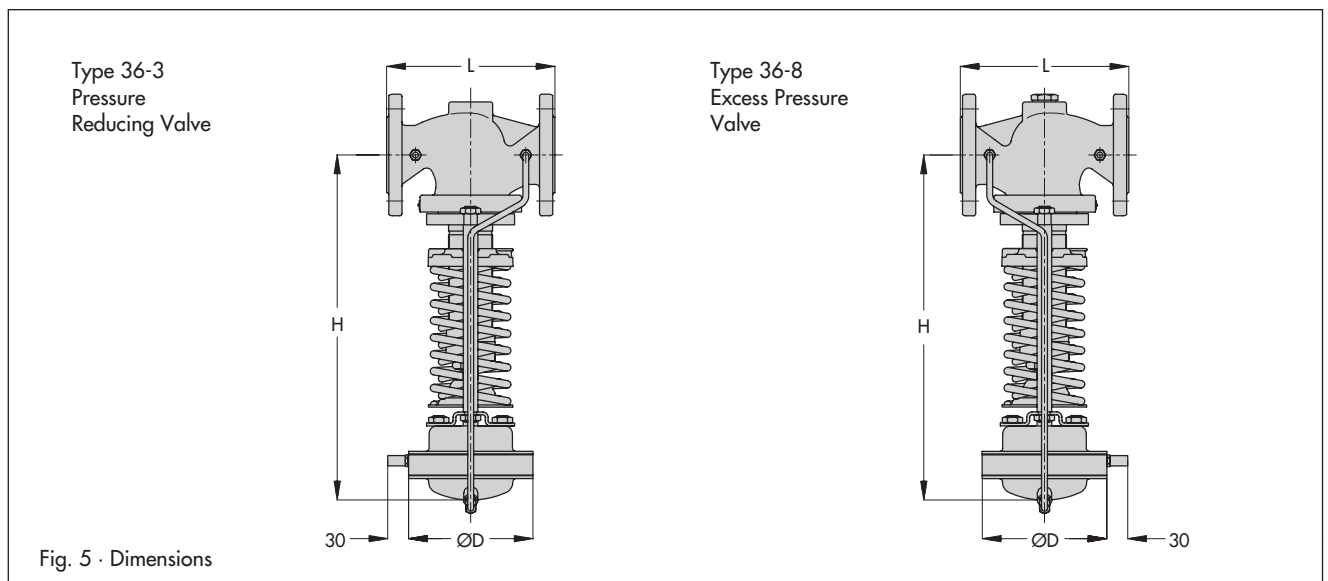
**Table 1 · Technical data** · All pressures in bar (gauge)

Nominal size	DN	15	20	25	32	40	50	65	80	100
$K_{VS}$		4	6.3	8.0	16	20	32	50	80	125
z value		0.60	0.60	0.55	0.55	0.50	0.45	0.40	0.35	0.35
Nominal pressure	PN	16, 25 or 40 (acc. to DIN EN 12516-1)								
Max. perm. differential pressure $\Delta p$ across the valve		25 bar						20 bar		16 bar
Excess pressure protection		12 bar on one side								
Max. perm. temperature		150 °C								
Set point ranges	Type 36-3	2.0 to 4.2 · 2.4 to 6.3 · 6.0 to 10.5								
	Type 36-8	2.0 to 4.4 · 2.4 to 6.6 · 6 to 11								

**Table 2 · Materials** · Material numbers according to DIN EN

Valve			
Nominal pressure	PN 16	PN 25	PN 40
Body	Cast iron EN-JL 1040 (GG-25)	Spheroidal graphite iron EN-JS 1049 (GGG-40.3)	Cast steel 1.0619 (GS-C25)
Seat	Stainless steel		
Plug with EPDM soft sealing	Stainless steel		
Balancing bellows/bellows seal	Stainless steel		
Actuator			
Diaphragm cases	Sheet steel S 235 JR (St 37-2)		
Diaphragm <sup>1)</sup>	EPDM with fabric reinforcement		

<sup>1)</sup> With special version for oils (ASTM I, II, III): FPM (FKM)

**Table 3 · Dimensions in mm and weights**

Nominal size DN	15	20	25	32	40	50	65	80	100
Installation length L	130	150	160	180	200	230	290	310	350
Height H	415			470			600		615
Diaphragm case $\varnothing D$	170								
Weight for PN 16 <sup>1)</sup> , approx. in kg	13	14	14.5	20	22	25.5	41.5	48.5	57.5

<sup>1)</sup> +10 % for spheroidal graphite iron EN-JS 1049 (PN 25) and cast steel 1.0619 (PN 40)

Specifications subject to change without notice.

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