# DATA SHEET

**T 2629 EN**

## Type 44-0 B Pressure Reducing Valve

Series 44 Self-operated Pressure Regulators · ANSI version

### Application

Set points from **3** to **290 psi** (0.2 to 20 bar) with valves **½ NPT** to **1 NPT** as well as **NPS ½** and **1**
Pressure rating Class 150/300 · Suitable for **steam** up to **390 °F** (200 °C)

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

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The regulators consist of a valve and an integrated actuator with an operating bellows and a set point adjuster.

### Special features

- Low-maintenance proportional regulators requiring no auxiliary energy
- Wide set point range and convenient set point adjustment
- Spring-loaded, single-seated valve without pressure balancing or plug balanced by a bellows
- Stainless steel operating bellows as operating element
- Compact design with particularly low overall height
- Any mounting position possible
- Stainless steel body

### Versions

**Type 44-0 B Steam Pressure Reducing Valve** (Fig. 1)

– Pressure regulators for set point ranges from 3 to 290 psi (0.2 to 20 bar)

– Body made of stainless steel (A351 CF8M) with screwed ends (½ NPT, ¾ NPT and 1 NPT female thread)

– Flanged valve body made of stainless steel (A351 CF8M) · NPS ½ and 1

– Regulator with valve Class 150/300 for steam up to 390 °F (200 °C).

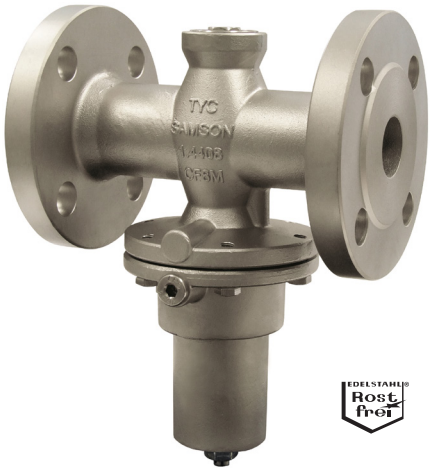
### Special versions

– Regulator prepared for pressure gauge or external control line connection (connecting thread ⅛ NPT)

– Version with electric set point adjustment for set points up to 150 psi (10 bar)

– Version with pneumatic set point adjuster

– Version functioning as differential pressure regulator




Version with flanged valve body




Body with screwed ends

**Fig. 1:** *Type 44-0 B Pressure Reducing Valve*

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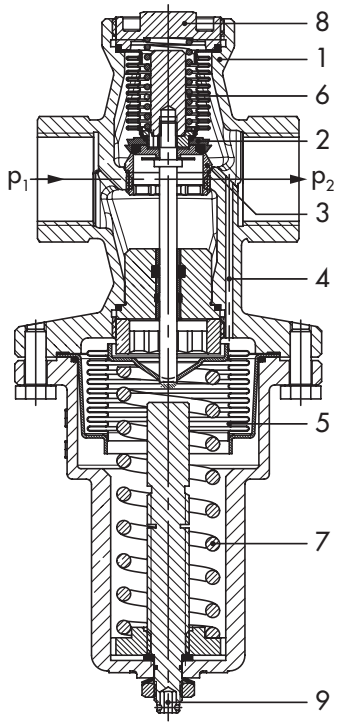
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**Principle of operation** (see Fig. 2)

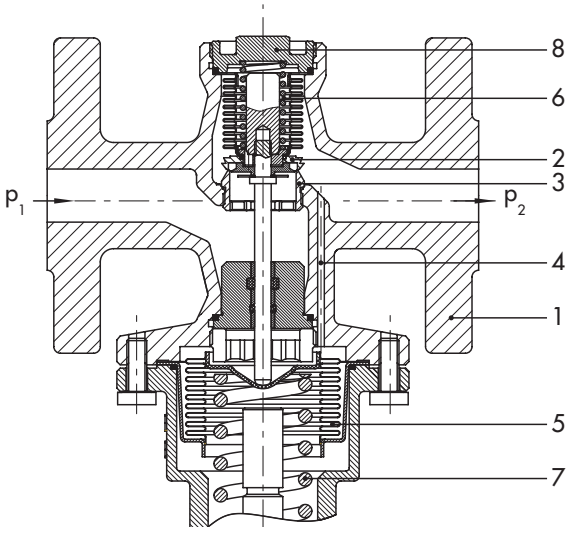
The medium flows through the valve in the direction indicated by the arrow. The position of the plug determines the flow rate across the area released between plug (2) and valve seat (3).

The steam pressure reducing valve is open when relieved of pressure. The valve closes when the downstream pressure ($p_2$) rises above the adjusted set point.

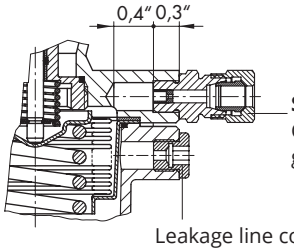
The pressure to be kept constant is transmitted through a borehole (4) in the valve body (1) to the operating bellows (5) where it is converted into a positioning force. It moves the valve plug depending on the spring rate of the set point springs (7) and the setting of the set point adjuster (9).




Body with screwed ends (female thread)




Flanged body




**Special version**
Connecting thread ⅛ NPT for a pressure gauge or external control line

Leakage line connection (standard)

| | | | |
|---|---|---|---|
| 1 | Valve body | 5 | Operating bellows |
| 2 | Plug | 6 | Balancing bellows |
| 3 | Seat | 7 | Set point spring |
| 4 | Borehole for control pressure | 8 | Stopper |
| | | 9 | Set point adjuster |

**Fig. 2:** *Functional diagram*

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

| Valve | Type 44-0 B Steam Pressure Reducing Valve |
|---|---|
| Pressure rating | Class 300 (body with screwed ends) [1] \| Class 150 (flanged body) |
| Connection | ½ NPT, ¾ NPT, 1 NPT female thread |
| | Flanges NPS ½ and 1 |
| Max. permissible temperature [1] | 390 °F (200 °C) |
| Max. perm. differential pressure Δp | 145 psi (10 bar) [2] · 230 psi (16 bar) |
| Leakage class according to IEC 60534-4 | ≤0.05 % of $K_{VS}$ coefficient |
| Conformity | CE |
| Set point range (continuously adjustable) | 3 to 30 psi · 15 to 60 psi · 30 to 90 psi · 60 to 150 psi · 120 to 290 psi |
| | 0.2 to 2 bar · 1 to 4 bar · 2 to 6 bar · 4 to 10 bar · 8 to 20 bar |
| Max. permissible ambient temperature | 140 °F (60 °C) |

1) Max. input pressure 275 psi (19 bar)
2) For Cv coefficient 1.2 · 1.9 · 2.4 · 2.9

**Table 2:** *Max. permissible pressure at actuator*

| Connection with screwed ends or flanges | | | ½ NPT · NPS ½ | ¾ NPT · – | 1 NPT · NPS 1 |
|---|---|---|---|---|---|
| $C_V$ and $K_{VS}$ coefficients | Standard version | $C_V$ | 1.9 [1) 2)] · 4.0 [3)] | 2.4 [1) 2)] · 5.0 [3)] | 2.9 [1) 2)] · 6.0 [3)] |
| | | $K_{VS}$ | 1.6 [1) 2)] · 3.2 [3)] | 2.0 [1) 2)] · 4.0 [3)] | 2.5 [1) 2)] · 5.0 [3)] |
| | Special version | $C_V$ | 1.2 [1) 3)] | | |
| | | $K_{VS}$ | 1.0 [1) 3)] | | |

1) Unbalanced
2) Soft seal. Seal material: PTFE
3) Metal seal

**Table 3:** *Materials · Material numbers according to ASTM and DIN EN*

| Body | Stainless steel A351 CF8M (1.4408) |
|---|---|
| Seat | A479 316L (1.4404) |
| Plug | A479 316L (1.4404) with PTFE soft seal |
| Balancing bellows | A479 316Ti (1.4571) |
| Set point spring | A479 302 (1.4310) |
| Operating bellows | A479 316Ti (1.4571) |
| Spring housing | A351 CF8M (1.4408) |
| Set point adjuster | Hexagonal socket head screw made of stainless steel A479 316Ti (1.4571) |

## Installation

The following applies:

- The direction of flow must match the direction indicated by the arrow on the body
- Any mounting position possible

Further details can be found in ▶ EB 2626-1.

**Sizing of Type 44-0 B Steam Pressure Reducing Valve**

To size the Type 44-0 B Steam Pressure Reducing Valve, the steam charts (sizing characteristics with valve characteristics) for saturated steam are provided.

This chart together with the additional specifications on the upstream pressure $p_1$, downstream pressure $p_2$ and the required steam flow rate can be used to find the right valve for the Type 44-0 B Regulator using the valve characteristics in the graph.

To find the right valve, observe the diagrams on flow velocity (Fig. 3) and valve load (Fig. 4

Select the largest of the determined values as the nominal size for the Type 44-0 B Regulator.

All pressures stated in **psi** (gauge) · Steam flow rate in **kg/h**

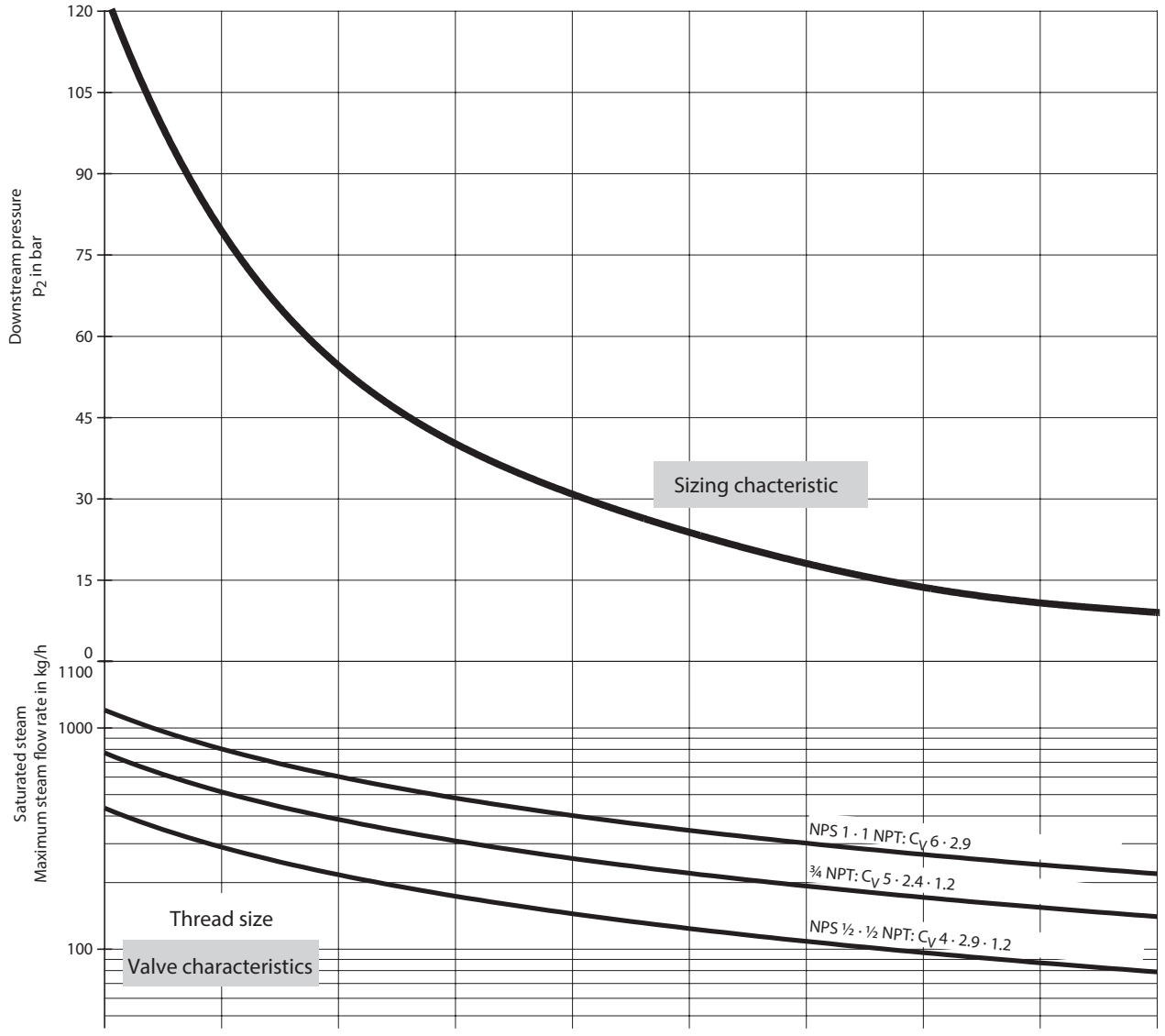



**Fig. 3:** *Diagram for sizing based on* **flow velocity**

All pressures stated in **psi** (gauge) · Steam flow rate in **kg/h**

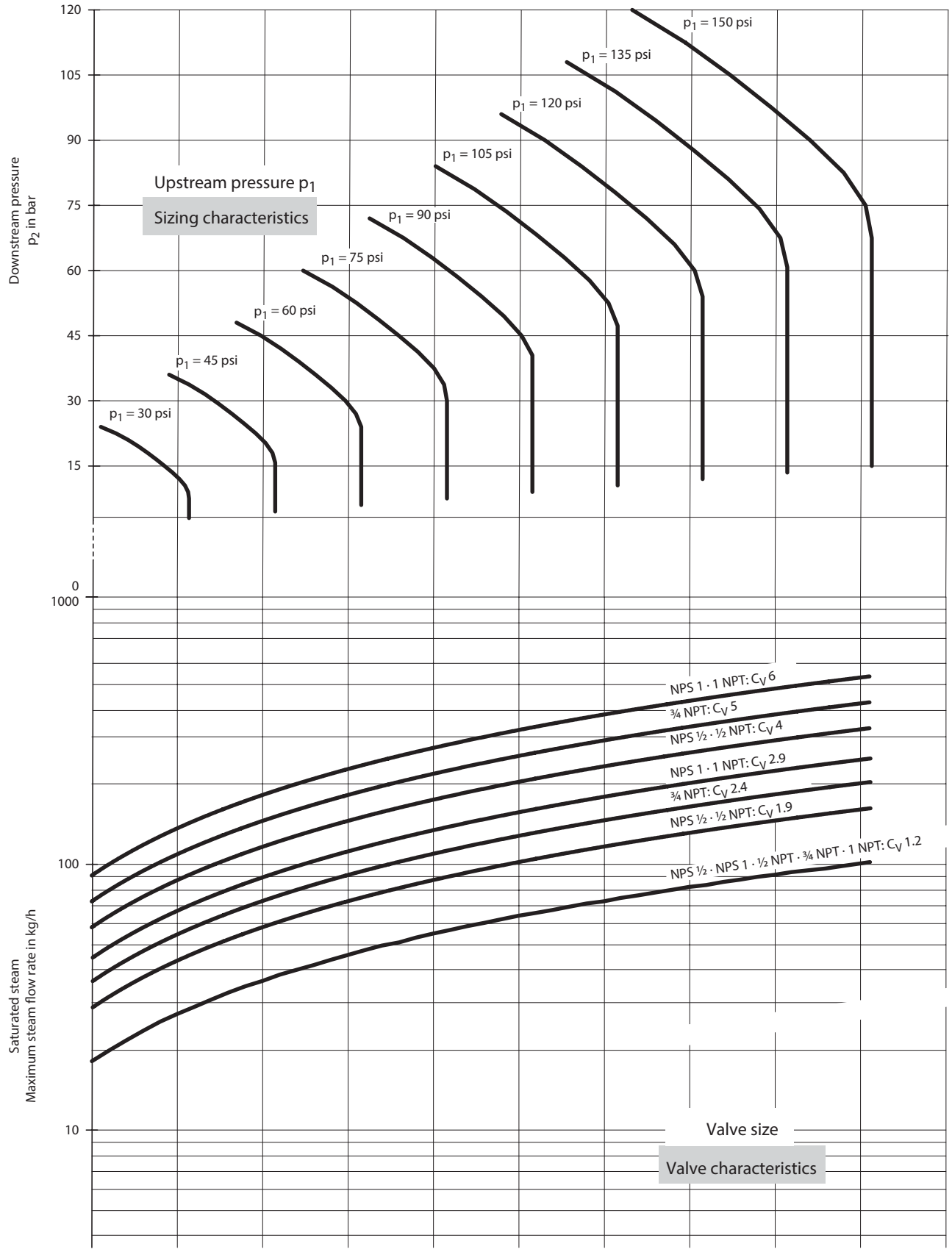


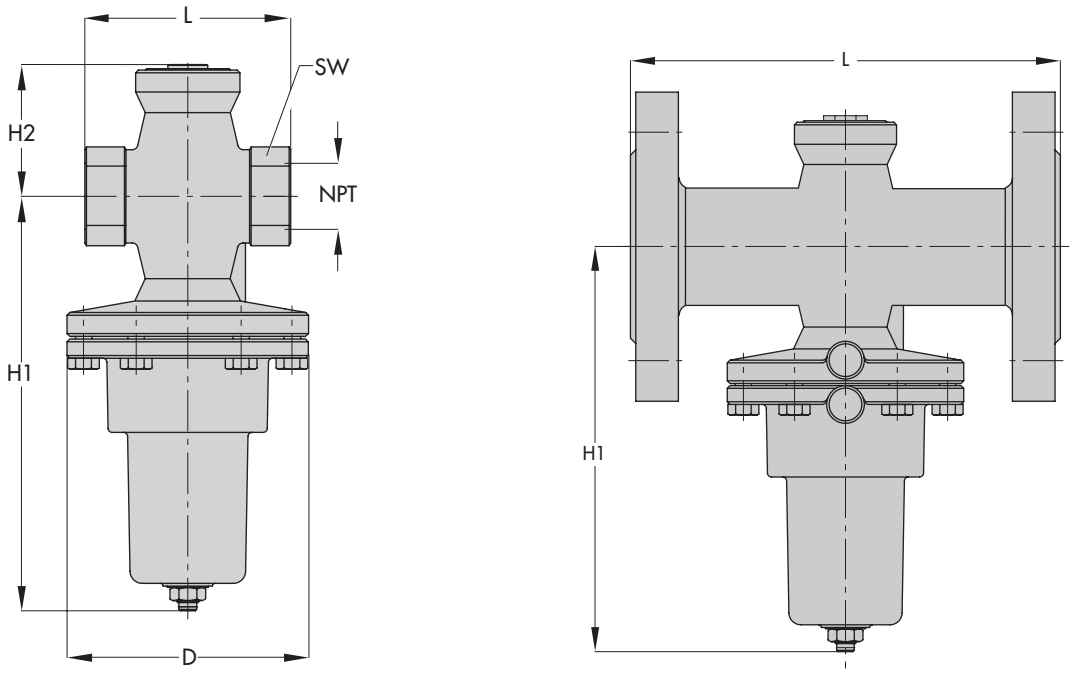

**Fig. 4:** *Diagram for sizing based on* **valve load**

**Table 4:** *Dimensions and weights*

| Connection with screwed ends or flanges | | ½ NPT · G ½ | ¾ NPT · G ¾ | 1 NPT · G 1 | NPS ½ · DN 15 | NPS 1 · DN 25 |
|---|---|---|---|---|---|---|
| Female thread | in | ½ | ¾ | 1 | – | |
| | G | ½ | ¾ | 1 | – | |
| Overall length L | in | 2.6 | 3.0 | 3.5 | 7.2 | |
| | mm | 65 | 75 | 90 | 184 | |
| Width across flats (SW) | in | 1.3 | 1.3 | 1.8 | – | |
| | mm | 34 | 34 | 46 | – | |
| Height H1 | in | 6.1 (8.1) [1] | | | | |
| | mm | 155 (205) [1] | | | | |
| Height H2 | in | 1.8 | | | – | |
| | mm | 46 | | | – | |
| D | in | 3.5 | | | – | |
| | mm | 89 | | | – | |
| Weight, approx. | | 4.9 lb | | 5.5 lb | 8.9 lb | 12 lb |
| | | 2.2 kg | | 2.5 kg | 4 kg | 5.4 kg |

[1] Dimensions in parentheses apply to regulators with 120 to 290 psi (8 to 20 bar) set point range

**Dimensions of the regulators**




Body with screwed ends

Flanged body

**Fig. 5:** *Dimensions*

**Ordering text**

**Type 44-0 B Steam Pressure Reducing Valve**

Body material: stainless steel (A351 CF8M)

Version with screwed ends ... NPT female thread or flanged valve body NPS ...

Set point range ... psi (bar), $C_V$ ($K_{VS}$) coefficient ...

Plug seal: PTFE or with metal seal

Optionally, special version