

Self-operated Temperature Regulators

Return Flow Temperature Limiters

Type 3 D

Type 4 D/4 E



Application

Limiters for the return flow temperature in district heating systems and other heating installations · Set point range **+10 °C** to **+70 °C** · Valves **G 3/8** to **G 1** · Nominal pressure **PN 25/PN 16** · For water up to max. **120 °C**
The valve closes when the temperature rises.

Conversion of valve sizing coefficients:

$$C_v \text{ (in U.S. gallons/min)} = 1.17 \cdot K_{vs} \text{ (in m}^3/\text{h)}$$

$$K_{vs} \text{ (in m}^3/\text{h)} = 0.86 \cdot C_v \text{ (in U.S. gallons/min)}$$

The return flow temperature limiter consists of a valve with a seat and an integrated thermostat with a plug, an excess temperature safety device and a set point adjuster.

Tight-closing, single-seated valve · Inlet: screw joint with threaded end or welding end · Outlet: female thread · Optionally both ends as connection nuts with threaded ends or welding ends (not for Type 4 E).

Especially suitable for district heating systems.

Special features

- Low-maintenance P-regulator requiring no auxiliary energy; a temperature sensor is integrated
- Wide set point range and easy set point adjustment. Limitation to a minimum and maximum set point available on request
- Adjustment to a specified temperature set point with a lead seal
- Suitable for water and liquids, provided these do not cause the materials used to corrode

Versions

Type 3 D (2043) · Return Flow Temperature Limiter with a globe valve G 1/2, G 3/4, and G 1 (PN 16) and thermostat for set points from 20 °C to 70 °C (Fig. 1) · PN 25

Type 4 D (2044) · Return Flow Temperature Limiter with a globe valve G 3/8 and G 1/2 and thermostat for set points from 10 °C to 60 °C · PN 16

Type 4 E (2044) · Return Flow Temperature Limiter, same version as Type 4 D, but with an angle valve · Outlet: female thread (Fig. 2) · PN 16

Principle of operation

The return flow temperature limiters function according to the liquid expansion principle.

The temperature-based volume change of the expanding liquid in the thermostat (3) moves the thermostat casing and the thermowell (4) with the valve plug (5). The set point can be adjusted by turning the cap (1). This adjustment causes the thermostat (3), thermowell, and valve plug (5) to move.

The position of the valve plug determines the flow rate across the free area between the plug (5) and the valve seat (6).



Fig. 1 · Type 3 D

Fig. 2 · Type 4 E

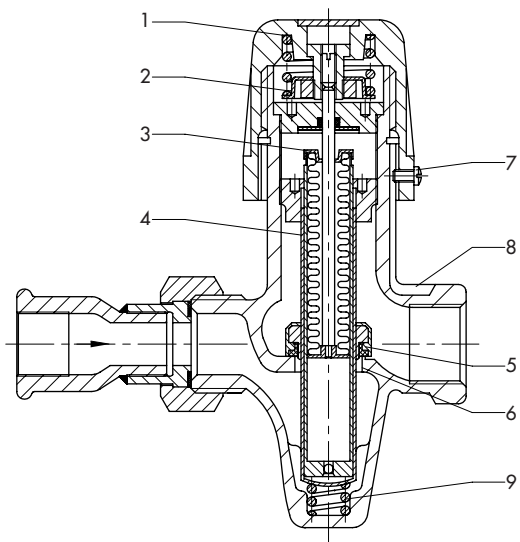


Fig. 3 · Type 3 D

- | | | | |
|---|--------------------------------------|---|---------------|
| 1 | Cap for set point adjustment | 5 | Valve plug |
| 2 | Spring for excess temperature device | 6 | Valve seat |
| 3 | Thermostat with metal bellows | 7 | Stop screw |
| 4 | Thermowell | 8 | Marking rib |
| | | 9 | Return spring |

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

Type	3 D			4 D/4 E	
	G 1/2	G 3/4	G 1	G 3/8	G 1/2
Connection	G 1/2	G 3/4	G 1	G 3/8	G 1/2
Kvs value	1.2	1.6	2	0.6	0.8
Max. permissible differential pressure	6 bar			4 bar	
Set point range ¹⁾	20 to 70 °C			10 to 60 °C	
Max. perm. temperature	120 °C				
Max. perm. operating press.	25 bar			16 bar	

¹⁾ Optional: Limited to a minimum or maximum temperature within the set point range · Adjustment to a temperature set point, also with lead seal

Table 2 · Materials · Material numbers acc. to DIN EN

Body	CC754S (brass)
Seat	CC754S (brass)
Plug	CW509 (brass) with EPDM soft sealing
Thermostat	CW509 (brass)
Adjustment cap	Plastic

Installation

- The device may be installed in any desired position
- Installation in horizontal pipelines (with adjustment cap standing upright) is preferable
- The direction of flow must correspond with the arrow on the body

Flow rate diagram for water

The values are valid for a fully open valve.

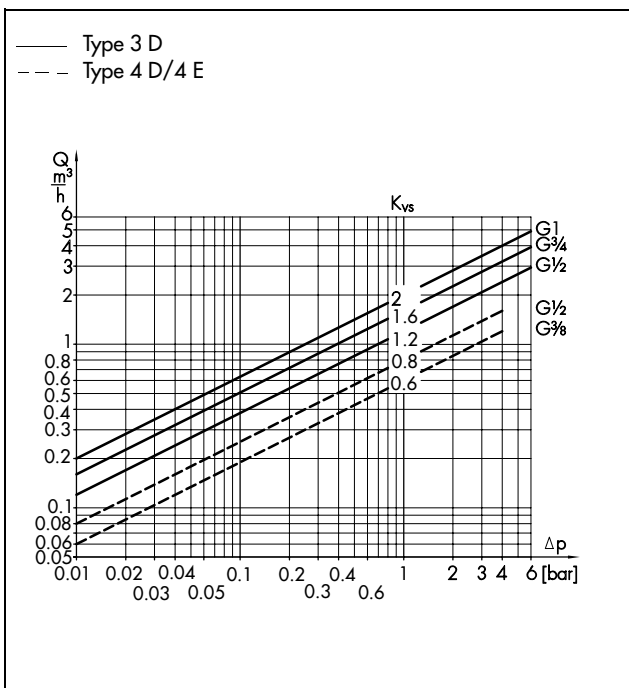
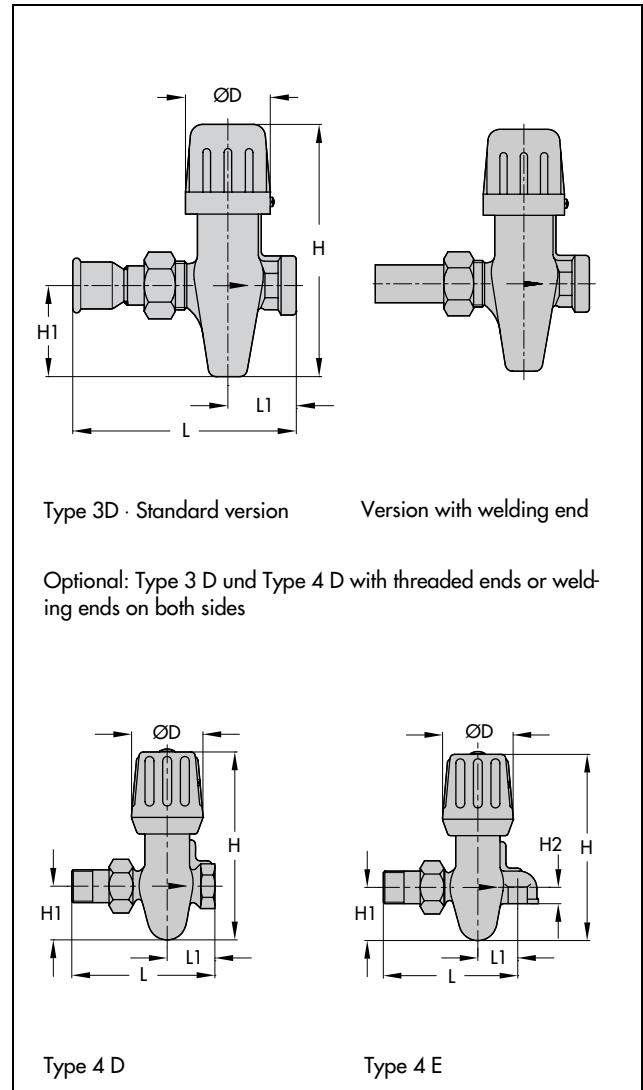


Table 3 · Dimensions in mm and weights

Type	3 D			4 D		4 E	
	G 1/2	G 3/4	G 1	G 3/8	G 1/2	G 3/8	G 1/2
Connection	G 1/2	G 3/4	G 1	G 3/8	G 1/2	G 3/8	G 1/2
L with threaded end	112	144	151	98		95	
L with welding end	140	140	150	115		110	
L1	45			33		27	
H max.	150			127			
H1	60			35			
H2	-			-		15	
Ø D	61			48			
Weight approx. kg	1.3	1.4	1.5	0.75			



Ordering text

Return Flow Temperature Limiter Type ...
 Connection size G ...
 Special version ...

Specifications subject to change without notice.

