

# 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 to 70 °C** · Valves **G 3/8 to G 1** · Nominal pressure **PN 25/PN 16**

Suitable for water up to max. **120 °C**

The valve **closes** as the temperature rises.

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

Tight-closing, single-seated valve · Inlet: connection nut with threaded end or welding end · Outlet: female thread · Optionally both ends with 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 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 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

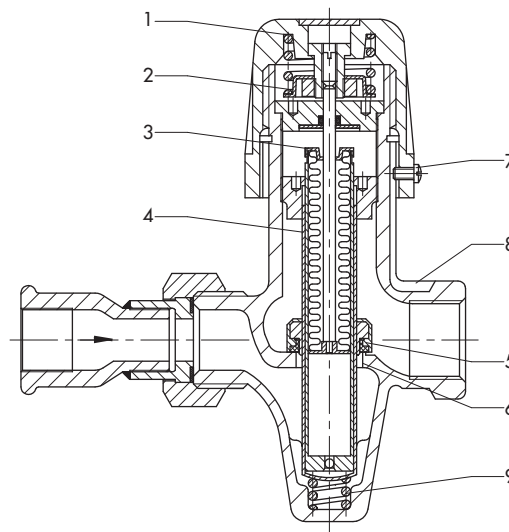


Fig. 3 · Type 3 D

- |  |                 |
|--|-----------------|
| 1 Cap for set point adjustment             | 5 Valve plug    |
| 2 Spring for excess temperature protection | 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 in bar (gauge)

Type	3 D			4 D/4 E	
	G ½	G ¾	G 1	G ¾	G ½
Thread size	G ½	G ¾	G 1	G ¾	G ½
K <sub>Vs</sub> coefficient	1.2	1.6	2	0.6	0.8
Max. perm. diff. pressure	6 bar			4 bar	
Set point range <sup>1)</sup>	20 to 70 °C			10 to 60 °C	
Max. perm. temperature	120 °C				
Max. perm. operating pressure	25 bar			16 bar	

<sup>1)</sup> Optional: limited to minimum or maximum temperature within set point range. Adjustment to a temperature set point, lead-sealed, if required

**Table 2 · Materials** · Material number acc. to DIN EN

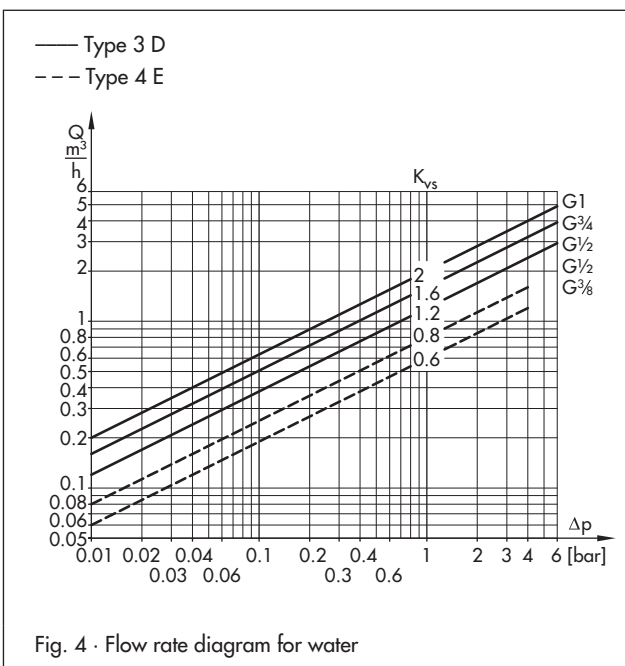
Body	CC754S
Seat	CC754S
Plug	CW509 (brass) with EPDM soft seal
Thermostat	CW509 (brass)
Scaled cap	Plastic

**Installation**

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

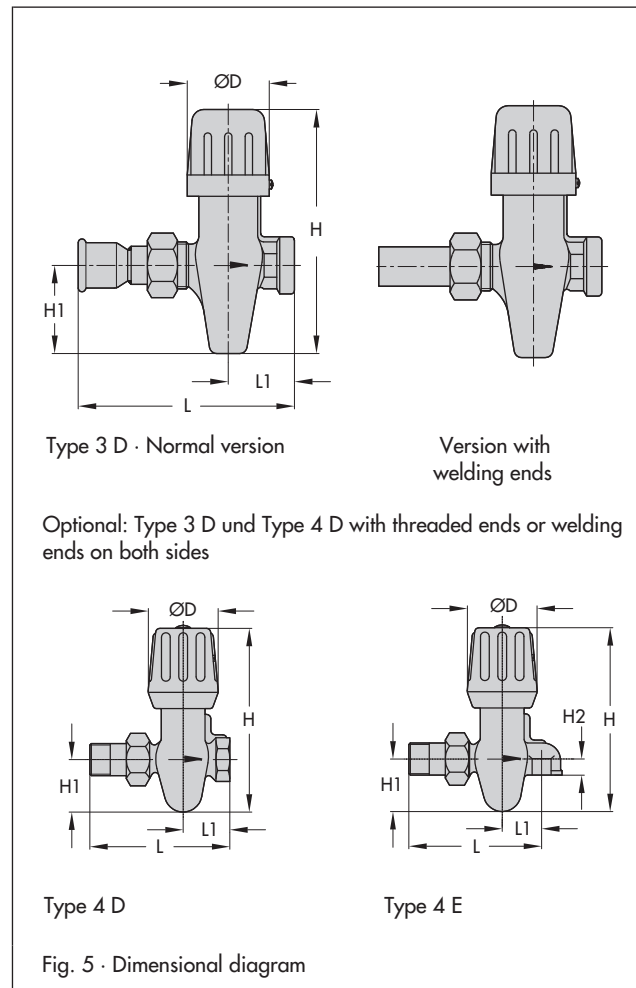
**Flow rate diagram for water**

The values apply to a fully open valve.



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

Type 3	3 D			4 D		4 E	
	G ½	G ¾	G 1	G ¾	G ½	G ¾	G ½
Thread size	G ½	G ¾	G 1	G ¾	G ½	G ¾	G ½
L (threaded connection)	112	144	151	98		95	
L (welding ends)	140	140	150	115		110	
L1	45			33		27	
H max.	150			127			
H1	60			35			
H2	-			-		15	
∅D	61			48			
Weight, approx in kg	1.3	1.4	1.5	0.75			



**Ordering text**

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

Specifications subject to change without notice

