

Self-operated Temperature Regulators Series 43



Temperature Regulators Type 43-5 · Type 43-7 · Valve closes when the temperature rises

Type 43-6 · Valve opens when the temperature rises

ANSI version

Application

Set points from **30 to 300 °F (0 to 150 °C)** · Valves $\frac{1}{2}$ to **1 NPT NPS $\frac{1}{2}$ to 2** · Pressure rating **Class 250** · For gases up to **175 °F (80 °C)**, liquids and vapors up to **390 °F (200 °C)** · For cooling and heating installations

Note

Typetested temperature regulators (TR), safety temperature monitors (STM) and safety temperature limiters (STL) are available.



Special features

- Self-operated P regulators requiring little maintenance
- Temperature sensor suitable for any installation position and permissible excess temperature of 120 °F (50 °C) above the set point adjusted, designed for operating pressures up to 580 psig (40 bar)
- Globe valves with a plug balanced by a bellows
- Compact design and a particularly low overall height
- Suitable for liquids, gases and vapors

Versions (Figs. 1 to 3)

The regulators consist of a globe valve and a control thermostat with set point adjuster, capillary tube and a temperature sensor which functions according to the adsorption principle.

Temperature regulators with Type 2430 K Control Thermostat and valve with connection $\frac{1}{2}$, $\frac{3}{4}$ or **1 NPT** female thread.

Type 43-5 · For heating installations · Type 2435 K Valve for Class 250 · For liquids and steam up to 390 °F (200 °C)

Type 43-6 · For cooling installations · Type 2436 K Valve for Class 250 · For gases up to 175 °F (80 °C) and liquids up to 300 °F (150 °C)

Temperature regulators with Type 2430 K Control Thermostat and valve in **NPS $\frac{1}{2}$ to 2** with connection nuts and welding ends (special version with threaded ends).

Type 43-6 · For cooling installations · Type 2436 K Valve for Class 250 · Sizes NPS $\frac{1}{4}$ to 2 · For gases up to 175 °F (80 °C) and liquids up to 300 °F (150 °C)

Type 43-7 · For heating installations · Type 2437 K Valve for Class 250 · Sizes NPS $\frac{1}{2}$ to 2 · For liquids and vapors up to 390 °F (200 °C)

Typetested safety devices

Register numbers are available on request.

Type 43-5 and Type 43-7 Temperature Regulators (TR) whose maximum operating pressures must not exceed the maximum differential pressure Δp specified in the technical data. Only SAMSON thermowells may be used for sensors requiring thermowells.

Safety temperature monitors (STM) and **safety temperature limiters (STL)** are also available. Further details can be found in Data Sheets T 2183 EN and T 2185 EN.

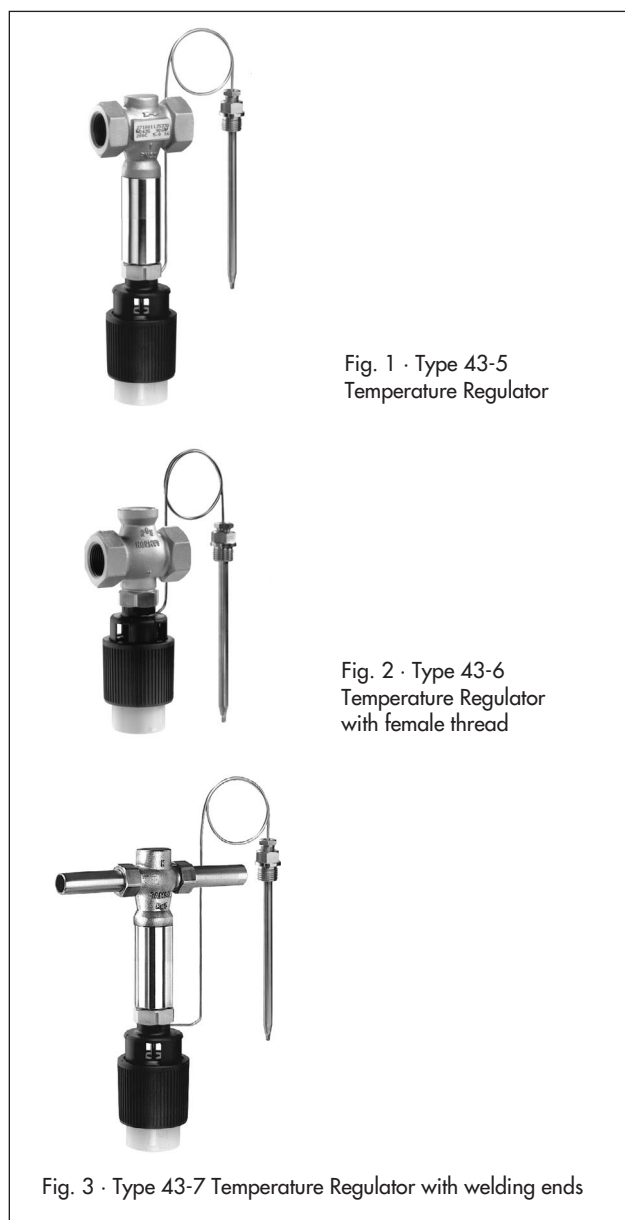


Fig. 1 · Type 43-5 Temperature Regulator

Fig. 2 · Type 43-6 Temperature Regulator with female thread

Fig. 3 · Type 43-7 Temperature Regulator with welding ends

Refer to Information Sheet T 2181 EN for details on selection and application of the typetested devices.

Table 1 · Technical data · All pressures as gauge pressure

Temperature Regulator	Type	43-6	43-5	43-7
Valve	Type	2436 K	2435 K	2437 K
Thread size		½ to 1 NPT		–
Valve size		NPS 1¼ to 2	–	NPS ½ to 2
Pressure rating		Class 250		
Max. perm. differential pressure Δp		Version with stainless steel bellows: 200 psi ¹⁾		
Max. perm. temperature range		300 °F (150 °C)	390 °F (200 °C)	

¹⁾ Type 43-6, 43-7 and NPS 1¼ to 2: max. 115 psi (8 bar)

C _v (K _{vS}) coefficients with ...							
Thread size	NPT	½ NPT	¾ NPT	1 NPT	–		
Valve size	NPS	NPS ½	NPS ¾	NPS 1	NPS 1¼	NPS 1½	NPS 2
C _v coefficient		3.7	5	6	15	20	23
K _{vS} coefficient		3.2	4	5	12.5	16	20

Type 2430 K Control Thermostat	
Set point range ²⁾ , continuously adjustable	30 to 95 °F, 75 to 160 °F, 105 to 210 °F, 125 to 250 °F or 160 to 300 °F 0 to 35 °C, 25 to 70 °C, 40 to 100 °C, 50 to 120 °C or 70 to 150 °C
Capillary tube	6.5 ft (2 m), special version 16.4 ft (5 m)
Perm. temperature at the sensor	120 °F (50 °C) above the adjusted set point
Max. perm. ambient temperature range	–5 to +175 °F (–20 to 80 °C)
Perm. pressure at sensor/at thermowell	Class 300

²⁾ Further set point ranges on request

Table 2 · Materials · Material no. acc. to ASTM and DIN EN

Body	C 83600 (G-CuSn5ZnPb)	Stainless steel ²⁾
Seat	Stainless steel 1.4104 ³⁾	1.4408
Plug	Type 43-6 Brass, free of dezincification, and 1.4104 with EPDM soft sealing ¹⁾	1.4408
	Type 43-5/-7 Brass, free of dezincification, and 1.4104 with PTFE soft sealing	–
Balancing bellows	Stainless steel 1.4571	1.4571
Valve spring	Stainless steel 1.4310	1.4310
Sensor	Capillary tube	Copper
	Thermowell	Copper or stainless steel 1.4571
Set point adjuster	PETP, glass fiber-reinforced	

¹⁾ Special version for oils (ASTM I, II, III): FPM (FKM) soft sealing

²⁾ Special version for Type 43-6

³⁾ For Type 43-6, ½ to 1 NPT: 1.4305

**Table 3 · Dimensions in inch (mm) and weights in lb (kg)
Type 43-5 and Type 43-6 (½ to 1 NPT)**

Thread size		½ NPT	¾ NPT	1 NPT
Length L	inch	2.56	2.95	3.54
	mm	65	75	90
Type	Height H		Weight, approx. in lb (kg)	
	in	mm	Version with bulb sensor and thermowell ¹⁾	
43-5	10.24	260	4 (1.8)	4.2 (1.9)
43-6	7.48	190	4 (1.8)	4.2 (1.9)

¹⁾ Version without thermowell: minus 0.44 lb (0.2 kg)

Type 43-7 (NPS ½ to 2 · DN 15 to 50)

Type 43-6 (NPS 1¼ to 2 · DN 32 to 50)

Nominal size	NPS	½	¾	1	1¼	1½	2
		DN	15	20	25	32	40
Pipe diameter d	in	0.84	1.05	1.29	1.66	1.90	2.38
	mm	21.3	26.8	32.7	42	48	60
Thread size R	G	¾	1	1¼	1¾	2	2½
Width across flats	in	1.18	1.42	1.81	2.32	2.56	3.65
	mm	30	36	46	59	65	82
Length L	in	2.56	2.76	2.95	3.94	4.33	5.12
	mm	65	70	75	100	110	130
L1 with welding ends	in	8.27	9.22	9.61	10.55	11.57	13.0
	mm	210	234	244	268	294	330
Weight ¹⁾ , approx.	lb	4.4	5.1	6.2	10.4	11.2	16.5
	kg	2.0	2.3	2.8	4.7	5.1	7.5
Special versions							
... with connection nuts and threaded ends (male thread)							
Length L2	in	5.1	5.67	6.26	7.1	7.72	8.98
	mm	129	144	159	180	196	228
Male thread A	NPT	½	¾	1	1¼	1½	2
Weight ¹⁾ , approx.	lb	4.4	5.1	6.2	10.4	11.2	16.5
	kg	2.0	2.3	2.8	4.7	5.1	7.5

¹⁾ Version with screw gland and thermowell
without thermowell: minus 0.44 lb (0.2 kg)

Ordering text

Temperature Regulator **Type 43-6**

- ... NPT or
- NPS ... with connection nuts and welding ends/threaded ends
- With stainless steel bellows
- Set point range ... °F (°C)
- Optionally, accessories ... /special version ...

Temperature Regulator **Type 43-5/Type 43-7**

- ... NPT or
- for **Type 43-7** NPS ... with connection nuts and welding ends/threaded ends
- With stainless steel bellows
- Set point range ... °F (°C)
- Optionally, accessories ... /special version ...

Specifications subject to change without notice.

