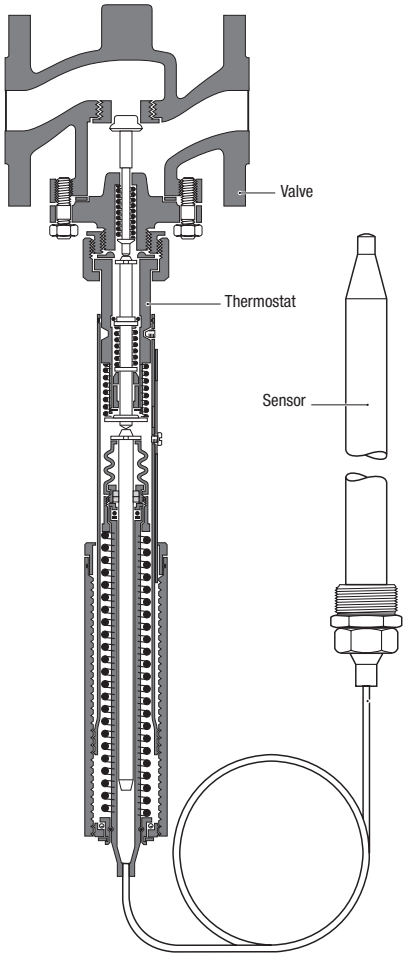


Application

Temperature control in heating and cooling processes in industrial plants, for h.v.a.c services and marine engineering. For liquids, gases, vapours.

Design

The self-acting temperature controller consists of a valve featuring a thermostat and a sensor. According to the service conditions the controller is optionally equipped with a cooling unit or a sensor pocket.
The temperature sensed by the sensor changes the volume of the measuring liquid in the capillary tube. The resulting pressure acts directly on the actuating piston which, in turn, operates the valve spindle. As the temperature rises, the regulating valve is held in closed positon (heating process) or open position (cooling process) until the pre-set release temperature is reached.
When the temperature drops again, a built-in return spring resets the valve to original position.

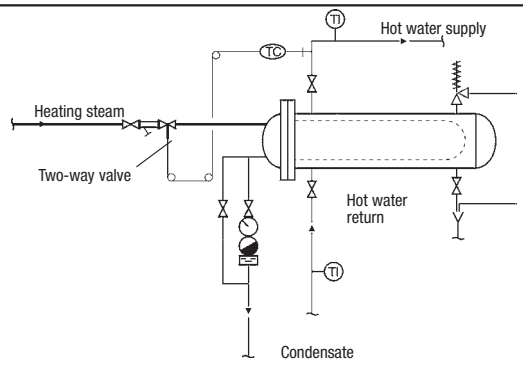
Valves

Two-way valves, with single seat or pressure-balanced single/double seat. Double-seated, two-way reverse-acting valves or three-way valves for diverting and mixing applications. Valve components made of gunmetal, cast iron, nodular cast iron or cast steel, with flanged or screwed connections.

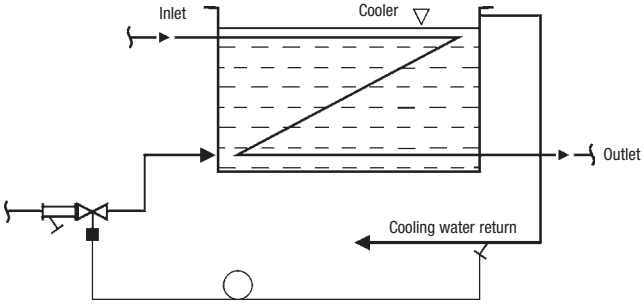
Thermostat

The thermostat is firmly attached to the sensor capillary tube. The rod-, spiral- or airduct-type sensors are made of copper or high-alloy stainless steel.
The capillary tube is available in different lengths, made of copper or high-alloy stainless steel.

Examples of Industrial Process Applications

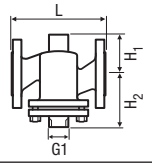
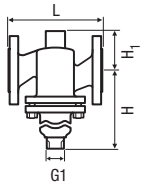
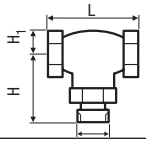
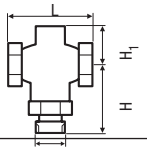
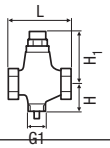
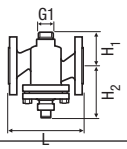


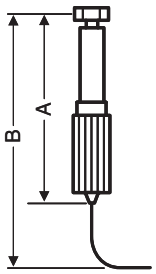
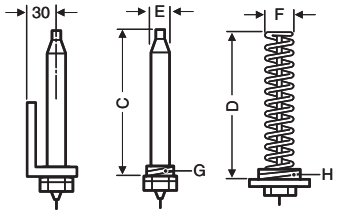
Heat exchanger with constant flow-temperature of the secondary circuit controlled on the steam side



Cooling-water return control for constant cooling-water return temperatures

Dimensions [mm] and Weights [kg] for Valves and Thermostats

Valve type		DN	15	20	25	32	40	50	65	80	100	125	150
		G	½	¾	1	1¼	1½	2					
M1F **G1F** **H1F**		L	130	150	160	180	200	230					
		H_1	80	85	95	105	110	125					
		H_2	60	65	70	75	85	95					
	M1F/G1F	kg	3.1	4.2	5.5	8.1	9.7	14.7					
	H1F	kg	3.4	4.6	6.1	9.0	10.8	15.5					
M1FBN **G1FBN** **H1FBN**		L	130	150	160	180	200	230	290	310			
		H	101	107	112	122	125	140	154	164			
		H_1	80	85	70	75	85	95	110	115			
	M1FBN	kg	4	5	6.0	9.0	13.0	16.0	23.0	38.0			
	G1FBN	kg	4	5	6.0	9.0	13.0	16.0	23.0	38.0			
	H1FBN	kg	4	5	6.0	9.0	13.0	16.0	23.0	38.0			
L1S		L	85	95									
		H	65	67									
		H_1	20	32									
		kg	0.7	0.8									
L2S		L					129	153					
		H					118	122					
		H_1					68	71					
		kg					2.9	3.8					
L2SR		L					129	153					
		H					65	70					
		H_1					90	94					
		kg					3.0	4.0					
M2FR **G2FR** **H2FR**		L		150	160	180	200	230	290	310	350	400	400
		H_1		63	70	75	85	95	110	155	145	160	180
		H_2		112	117	151	155	163	180	195	240	260	293
		kg		5.0	6.5	9.0	11.0	16.0	21.0	35.0	39.0	75.0	77.0

Thermostats K = sensor of copper N = sensor of high alloy S.S.		Type V 2.05		Type V 4.03		Type V 4.05		Type V 4.10		Type V 8.09		Type V 8.18	
		K	N	K	N	K	N	K	N	K	N	K	N
Adjusting cylinder 	A	305	305	385	385	385	385	385	385	560	560		560
	B	405	405	525	525	525	525	525	525	740	740		740
Rod- and spiral-type sensor with BSP connection 	C	210	190	210	190	390	380	490	515	710	745		800
	D	235	170	235	170	235	250	325	325	425	435		810
	E	22	22	22	22	22	22	28	25	28	25		34
	F	49	49	49	49	49	49	49	49	49	49		49
	G	¾	¾	1	1	1	1	1	1	2	2		2
	H	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"		2"
	kg	1.8	1.8	2.4	2.4	2.6	2.6	3.3	3.3	6.3	6.3		7.3
	kg	2.3	2.3	2.9	2.9	3.1	3.1	3.8	3.8	6.3	6.3		7.3

Closing Pressure Ratings for Valves and Sensors

Single-seated regulating valves with flanged ends and rod-type copper sensor with copper capillary tube (3 m)

	DN [mm]	15/6	15/9	15/12	15	20	25	32	40	50	65	80
	k_{VS} value	0.45	0.95	1.7	2.75	5	7.5	12.5	20	30	50	80
Δp_{max} for sensor type	2.05	20	13	9.3	5.3	1.9	0.9	–	–	–		
Fluid: saturated steam	4.05	40	38	24	15	6.7	–	–	–	–		
Type M1F, G1F, H1F	4.10	–	–	–	–	–	4.1	1.9	0.8	–		
	8.09	–	–	–	–	16	10	5.8	3.3	2.3		

Balanced, single-seated regulating valves with flanged ends and rod-type copper sensor with copper capillary tube (3 m)

	DN				15	20	25	32	40	50	65	80
	k_{VS} value				4	6.3	10	16	25	35	58	80
Δp_{max} for sensor type	4.05				16	16	16	16	9	8	6	4
Fluid: saturated steam	4.10				16	16	16	16	9	8	6	4
Type M1FBN, G1FBN, H1FBN	8.09				16	16	16	16	16	16	16	16
	8.18				16	16	16	16	16	16	16	16

Single-seated regulating valves with screwed end connection and rod-type copper sensor capillary tube (3 m)

	BSP	1/2 / 6	1/2 / 9	1/2 / 12	1/2	3/4						
	k_{VS} value	0.45	0.95	1.7	2.75	5						
Δp_{max} for sensor type	2.05	16	16	–	6	2.9						
Fluid: saturated steam	4.05	16	16	–	16	9						
Type L 1S	4.10	16	16	–	16	9						

Double-seated regulating valves with screwed connection and rod-type copper sensor with copper capillary tube (3 m)

	BSP	1/2 / 6	1/2 / 9	1/2 / 12	1/2	3/4	1	1 1/4	1 1/2	2		
	k_{VS} value	0.45	0.95	1.7	2.75	5	7.5	12.5	20	30		
Δp_{max} for sensor type	2.05	–	–	–	–	–	–	–	–	–		
Fluid: water < 120 °C Type L 2S	4.10	–	–	–	–	–	–	–	21	14		

Double-seated reverse-acting valve with screwed connection and rod-type copper sensor with copper capillary tube (3 m)

	BSP	1/2	3/4	1	1 1/4	1 1/2	2
	k_{VS} value	2.75	5	7.5	12.5	20	30
Δp_{max} for sensor type	2.05	–	–	–	–	–	–
Fluid: water < 120 °C	4.05	–	–	–	–	–	–
Type L2SR	4.10	–	–	–	–	2.7	1.8

Double-seated reverse-acting valve with flanged ends and rod-type copper sensor with copper capillary tube (3 m)

	DN [mm]	20	25	32	40	50	65	80	100	125	150
	k_{VS} value	5	7.5	12.5	20	30	50	80	125	215	310
Δp_{max} for sensor type	2.05	8.3	8	–	–	–	–	–	–	–	–
Fluid: water < 120 °C	4.05	8.3	8	7	–	–	–	–	–	–	–
Tye M2FR, G2FR, H2FR	4.10	–	–	–	6.6	5.3	5.8	6.7	–	–	–
	8.09	–	–	–	–	–	–	–	12.1	–	–
	8.10	–	–	–	–	–	–	–	12.1	9	7.5

Three-way valves available on request.