Self-operated thermostatic valves

SH

DIN PN 16 - 40 —— **DN 15 - 100mm**
ANSI 125 - 300 —— **1/2" - 4"**

16A, 26A
16U, 26U

Application

SH 16A, 26A: control of the temperature in heating systems, as reverse flow equipments, heat exchanger, pre-heaters, storage tanks. They operate with steam hot water and thermal oil.
SH 16U, 26U: control of the temperature in coolant systems, as industrial motors, condensers, steam desuperheater. They operate with cold water, salmoura and other cooler fluids.

Main features

- Self-operated proportional controllers spare any auxiliary energy. Insensitive to the variations of the process, frequently they are used to controllers' pneumatic or electric amount to soften the larger oscillations of the variables;
- Balance bellows eliminates the influence of the variations of pressure of the flow on the position of the plug;
- Absolute operational safety;
- Silent operation;
- Easy maintenance;
- Long useful life.

Presentation

The self-operated thermostatic valves series SH are composed basically of body with straight passage, only thirst, plug bellows of balance pressure, stem of the plug and threaded connection for the thermostatic actuator. The valves SH 16U and SH 26U are provided of a mounted investor in the inferior extremity of the castle of the balance bellows.
They operate together with a thermostatic actuator ASCA series SA type T (to see handout PR-05.50.40-I).

Fig. 1 - SH 16 A / SH 26 A with thermostatic actuator SA 03 T

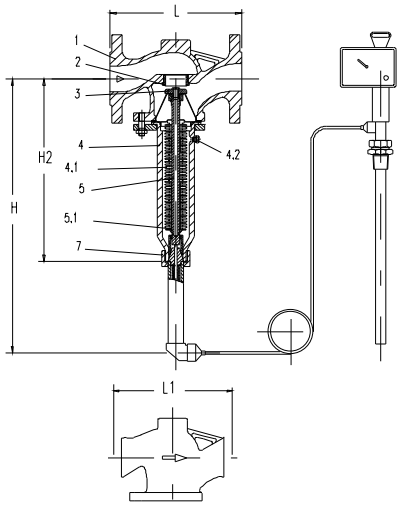
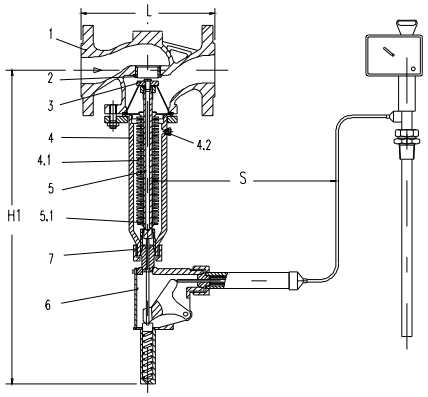


Fig. 2 - SH 16 U / SH 26 U with thermostatic actuator SA 03 T



Nº	Description	Qty.	Nº	Description	Qty.
1	Body	1	4.2	deaeration screw	1
2*	Seat	1	5	Stem of the plug	1
3*	Plug	1	5.1*	Spring	1
4	Bellows frame	1	6	Invester	1
4.1	balance bellows of pressure	1	7	Connection for thermostatic actuator	1

*Spare pats recommended

Technical competence, materials and connections

Model		SH 16 A / SH 16 U								SH 26 A / SH 26 U							
Nominal pressure		DIN PN 16 - ANSI 125								DIN PN 40 - ANSI 300							
ND	mm	15	20	25	40	50	65	80	100	15	20	25	40	50	65	80	100
	pol	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
Standard execution	Kvs	3,2	5	8	20	32	50	80	125	3,2	5	8	20	32	50	80	125
Special execution	Kvs	1,25	2	3,2	8	12,5	20	32	50	1,25	2	3,2	8	12,5	20	32	50
Δp maximum	bar/psi	16 / 228					10 / 142			20 / 285			16 / 228		10 / 142		
Body		Cast iron ASTM 126 Gr. B								Cast steel ASTM A 216 Gr. WCB							
Seat and plug		Wrought steel ASTM A 182 F6															
Balance bellows		stainless steel AISI 316 L															
Gasket		Hydraulic cardboard															
Investor		Nickel-plated brass															
Prolongation piece		Brass ASTM B 134 or stainless steel ASTM A 276 Gr. 304															
Ask for middleman		Brass ASTM B 134 or stainless steel ASTM A 276 Gr. 304															
Threaded		BSP or ANSI B 2.1 (NPT)															
Flanged		DIN PN 10 / 16 - ANSI 125								DIN PN 10 / 16 - ANSI 125							

Optional

To protect the thermostat against very severe service conditions, the assembly of a piece of prolongation and/or an intermediate piece is recommended between the valve and the element actuator (to see “Diagram pressure-temperature” and “technical Competence”).

- Prolongation piece (fig. 3) for protection against very high temperatures;
- Ask for middleman (fig. 4) for protection against pressures of service above 16 bar/ 288 psi in the valve. It serves; still, to separate the fluid in the valve of the no-ferrous components of the thermostat.

The optional items are supplied by over price.

Installation

The valve SH should only be installed in horizontal pipelines, with the castle of the bellows and the connection for the thermostat returned, down. The flow should obey the suitable direction for the arrow in the body.

Operation

The valves SH 16A and SH 26A close with temperature in elevation.
The valves SH 16 U and SH 26 U open with temperature in elevation.
The fluid crosses the valve in the direction of the arrow. The displacement of the obturator determines the flow of the heating fluid or of coolant for the area liberated between the plug and the headquarters of the valve. The pressure upstream of the plug acts through a perforation in the stem. On the surface it expresses of the balance bellows, and the pressure downstream of the plug it acts on the surface it interns of the balance bellows. This way, the acting pressures on the plug are compensated.

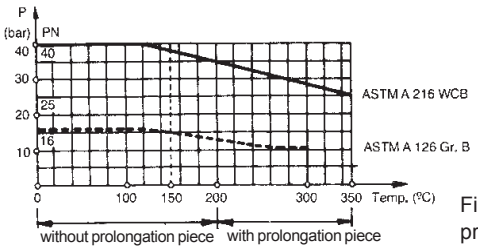
Flow diagram

The suitable values in the diagram are totally valid for the valve open.
For other fluids, to consult the “Technical Information 0506 - sizing of control valves.”
Meaning of the numbers to the right side of the diagram:
Numbers in bold - Nominal Diameter of the valve with normal passage of the seat.
Common numbers - Nominal Diameter of the valve with restricted passage or enlarged of the seat (special execution).

Weights and measures

ND	mm	15	20	25	40	50	65	80	100
	pol	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
Measures	mm								
	L	130	150	160	200	230	290	310	350
	L_1	130	140	150	180	210	-	-	-
H	até 200 ºC	460			510		675		705
	até 200 ºC	590			640		805		835
H_1	até 200 ºC	420			470		595		625
	até 200 ºC	550			600		725		755
H_2	até 200 ºC	225			275		380		410
	até 200 ºC	355			405		510		540
S		290					350		
Weight approx.	kg								
16 A / 26 A	Flanged	5,8	6,3	7,5	15,5	18,4	31	36,8	52,9
	threaded	5,1	5,3	6,2	13,2	-	-	-	-
16 U / 26 U	Flanged	7,8	8,3	9,5	17,5	20,4	33	38,8	54,9
	threaded	7,1	7,3	8,2	15,2	-	-	-	-
Prolongation piece		0,6							
Ask for middleman		0,2							

Diagram pressure - temperature according to DIN 2401



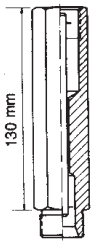


Fig. 3
prolongation piece

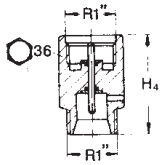
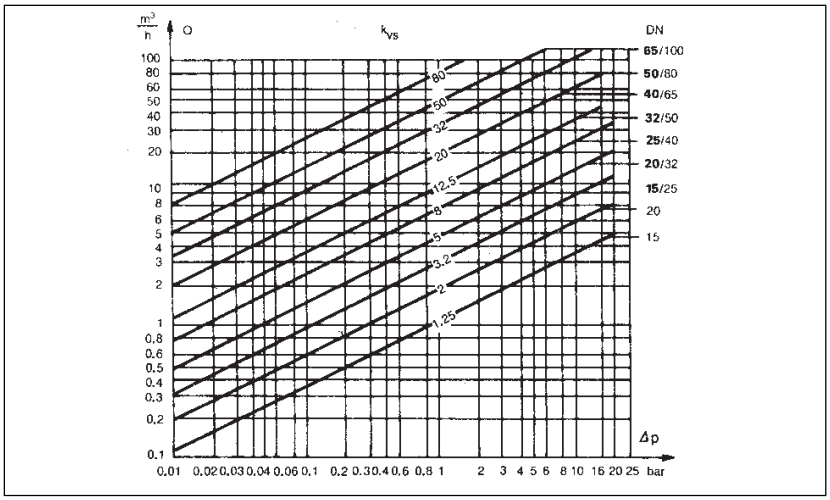


Fig. 4 - Ask for middleman



Data for sizing

ASCA will make with pleasure the sizing calculation. For this end they should be supplied:
- Fluid
- Service pressure (mbar)
- Service temperature (oC)
- Application (coolant or heat up)
- Flow (m3/h)

Standardized specification

Self-operated thermostatic valve of straight passage
Model SH..... of ASCA
According to handout PR-05.50.10-I
Connections.....
As per norm.....
Pressure class.....
Nominal diameter.....
coupled to a thermostatic actuator
Type SA.....T of ASCA
According handout PR-05.50.40-I
Control strip.....
Length of the capillary tube.....
Optional.....

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