KTM 50

Pressure independent balancing and control valve

TA

Pressurisation & Water Quality › Balancing & Control › Thermostatic Control

ENGINEERING ADVANTAGE

High-performing pressure-independent temperature control valve for variable flow heating and cooling systems. Particularly effective in situations requiring high temperatures and/or pressure drops, e.g. for the primary side of district heating and industrial cooling. Also suitable for use on the secondary side in district heating and comfort cooling systems. Ductile iron body - painted with duasolid offering good rust protection.

› Special internal geometry
Allows big pressure drop without noise.

› Adjustable flow
Ensures the design flow.

› Adapters
For use with most available actuators.

› Technical description

Application:
Heating and cooling systems with variable flow.

Function:
Temperature control, differential pressure control over an integrated control valve and flow control.

Dimensions:
DN 100-200

Pressure class:
PN 16 or PN 25

Max. differential pressure (ΔpV):
1600 kPa = 16 bar

Pressure drop in the throttle (Fc):
15 kPa

Temperature:
Max. working temperature: 120°C
Min. working temperature: -10°C

Media:
Water or neutral fluids, water-glycol mixtures.

Material:
Valve body: Ductile iron EN-GJS-400
Diaphragms and gaskets: EPDM
Valve plug: Stainless steel with EPDM insert

Surface treatment:
Duasolid painting.

Marking:
TA, DN, PN, Kvs and flow direction arrow.

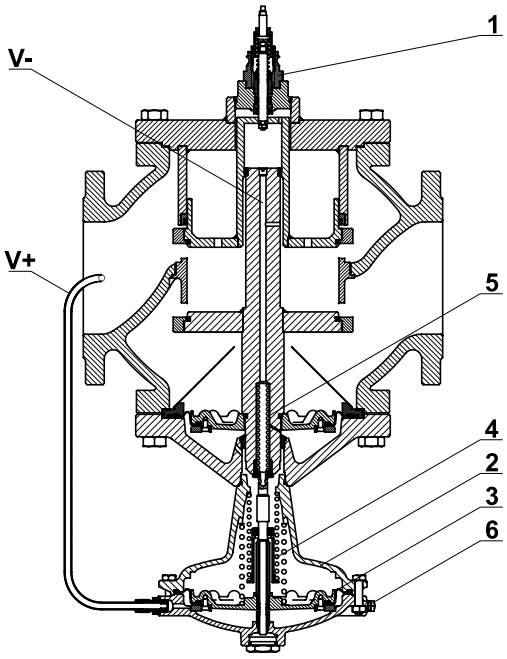
Flanges:
According to EN-1092-2:1997, type 21.

Operating function

1. Bonnet
2. Δp controller
3. Diaphragm
4. Spring
5. Safety spring
6. Vent screw

V+ External impulse pipe
V- Internal impulse pipe

Bonnet for temperature control (1) and diaphragm operated differential pressure controller (2) are built in one valve body. Pressure upstream of the control valve acts through an external impuse pipe (V+) to bottom side of the diaphragm (3). Pressure downstream control valve (V-) acts to top side of diaphragm together with a spring (4) force. The differential pressure controller pressure relieves the control valve and at the same time limits the flow to the value preset via lift limitation of control valve. The differential pressure controller keeps 15 kPa across the control valve. Valve is protected against overload with a safety spring (5).



Sizing

Select the size according to maximum flow. Control the pressure drop in the valve by using the formula:

$$\Delta p_{min} = Fc + \left(0.01 \frac{q}{Kvd}\right)^2 \qquad [l/h, kPa]$$

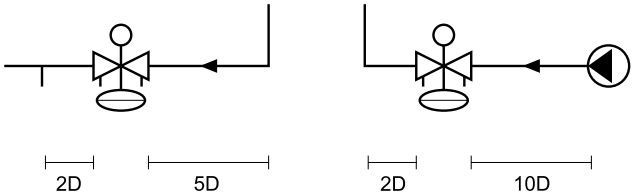
Fc is the constant pressure drop in the throttle (15 kPa).

Installation

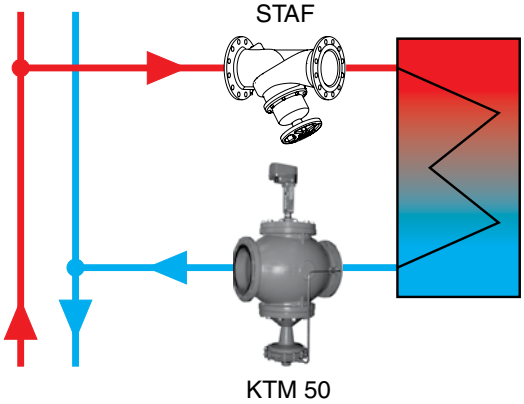
Flow direction is shown by the arrow on the valve body. Install the valve so that the flow adjustment scale is visible and measuring points (if used) are accessible.
Check the allowed positions of the actuator. Installation of a strainer upstream of the valve is recommended. Install the actuator after undertaken a leakage test.

Installation of a balancing valve STAF is recommended to enable flow measurement, commissioning and trouble-shooting with TA's balancing or measuring instruments.

Normal pipe fittings
Try to avoid mounting taps and pumps immediately before the valve.

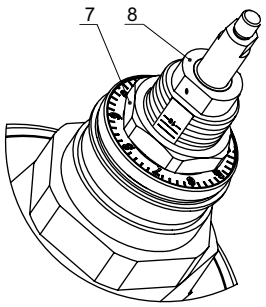


Application example

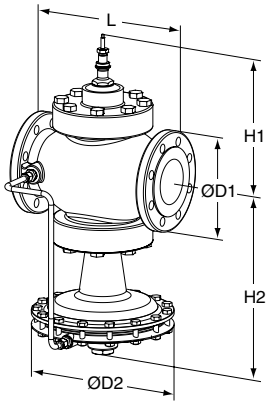


Setting

Release the fixing nut (7). Turn the flow setting screw (8) clockwise to the position of 0,0 turns. Turn the flow setting screw **anticlockwise** corresponding to the number of turns on the flow chart. Tighten the fixing nut.



Articles



PN 16

Article No	DN	D1	D2	L	H1	H2	Kvd	q_{max} [m³/h]	Kg
Fc = 15 kPa									
52 753-790	100	235	276	350	346	461	120	80	78
52 753-791	125	270	276	400	356	471	145	90	95
52 753-792	150	300	276	480	392	498	230	190	225
52 753-793	200	360	276	600	430	540	360	215	287

PN 25

Article No	DN	D1	D2	L	H1	H2	Kvd	q_{max} [m³/h]	Kg
Fc = 15 kPa									
52 753-690	100	235	276	350	346	461	120	80	78
52 753-691	125	270	276	400	356	471	145	90	95
52 753-692	150	300	276	480	392	498	230	190	225
52 753-693	200	360	276	600	430	540	360	215	287

Kvd = Is the Kv value of the differential pressure control component when fully open, used to calculate the minimum pressure drop necessary for the valve to operate according to the formula found under “Sizing”.
Fc is constant pressure drop in the control valve = 15 kPa.

Adapters for actuators

Article No	EAN	For actuator
52 757-901	7318793980502	TA-NV24, Belimo UNV 003
52 757-904	7318793980809	Sauter AVN 224, AVF 234, AVM 234
52 757-912		TAHC MC100 FSE/FSR
52 757-913		TAHC MC160/230

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