IMI TA

KTM 50

Combined control & balancing valves

Pressure independent balancing and control valve

Engineering GREAT Solutions

IMI Hydronic Engineering

KTM 50

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. Rust protection is assured due to the electrophoretically painted ductile iron body.

Key features

- **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):
DN 100-200: 15 kPa
DN 200 HF: 34 kPa
HF = high flow

Temperature:
Max. working temperature: 150°C
Min. working temperature: -10°C

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

Leakage rate:
Tight sealing

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

Surface treatment:
Electrophoretic painting.

Marking:
IMI TA, DN, PN, Kvs, CE, valve body material and flow direction arrow.

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

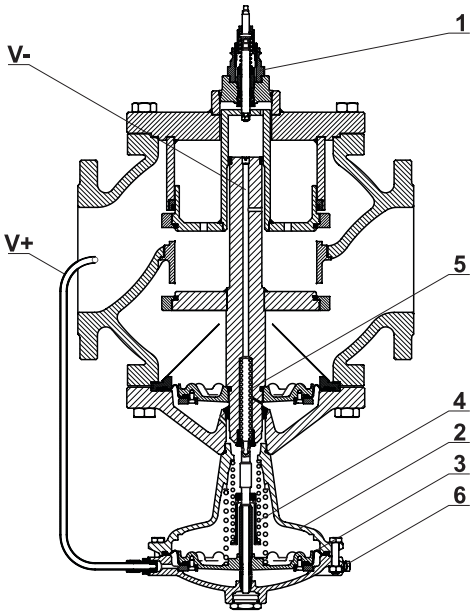
Max. lift of the control valve:
20 mm

Operating function

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 (34 kPa) across the control valve.
Valve is protected against overload with a safety spring (5).

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

V+ External impulse pipe
V- Internal impulse pipe



Sizing

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

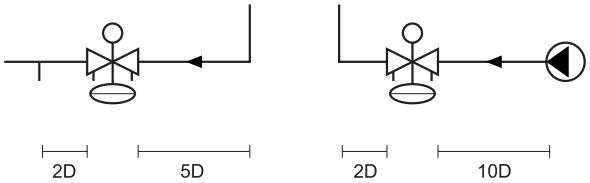
$$\Delta p_{min} = Fc + \left(0.01 \frac{q}{Kvd}\right)^2 \qquad [l/h, kPa]$$

Fc is the constant pressure drop in the throttle (15 kPa, 34 kPa).

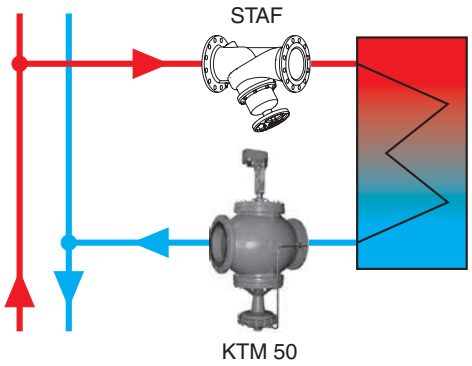
Installation

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 IMI Hydronic Engineering's balancing or measuring instruments.

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

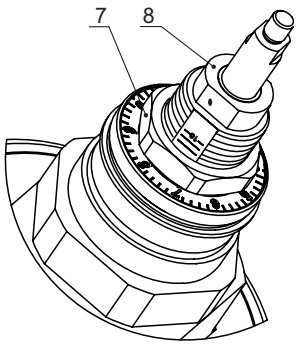


Application example

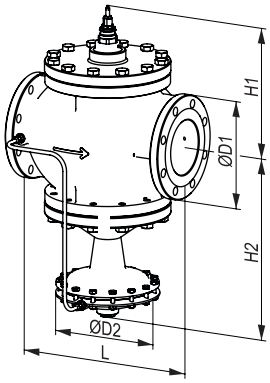


Setting

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



Flanged

Flanges according to EN-1092-2, type 21.

PN 16

DN	D1	D2	L	H1	H2	Kvd	q_{max} [m³/h]	Kg	EAN	Article No
Fc = 15 kPa										
100	220	276	350	346	461	120	80	78	3831112511583	52 753-790
125	250	276	400	356	471	145	90	95	3831112511606	52 753-791
150	285	276	480	392	498	230	190	225	3831112511620	52 753-792
200	340	276	600	430	540	360	215	287	3831112511644	52 753-793
Fc = 34 kPa										
200 HF	340	276	600	430	540	430	350	287	3831112513808	52 753-493

PN 25

DN	D1	D2	L	H1	H2	Kvd	q_{max} [m³/h]	Kg	EAN	Article No
Fc = 15 kPa										
100	235	276	350	346	461	120	80	78	3831112511590	52 753-690
125	270	276	400	356	471	145	90	95	3831112511613	52 753-691
150	300	276	480	392	498	230	190	225	3831112511637	52 753-692
200	360	276	600	430	540	360	215	287	3831112511651	52 753-693
Fc = 34 kPa										
200 HF	360	276	600	430	540	430	350	287	3831112513815	52 753-593

Fc is constant pressure drop in the control valve = 15 kPa (34 kPa).
HF = High flow
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”.

Adapters for actuators

For actuator	EAN	Article No
TA-NV24, Belimo UNV 003	3831112512283	52 757-901
Sauter AVN 224, AVF 234, AVM 234	3831112504486	52 757-904
TA-Slider 1250, TA-MC100	3831112512085	52 757-907
TA-MC100 FSE/FSR	3831112511781	52 757-912
TA-MC160/230	3831112511910	52 757-913

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