Climate
Control

IMI Heimeier

Thermostatic head K

with contact or immersion sensor

Thermostatic heads

For medium temperature control

Breakthrough
engineering for
a better world

Thermostatic head K with contact or immersion sensor

For medium temperature control with thermostatic valve bodies and three-way valves in heating or cooling systems.

Key features

Precise temperature control media
In volume and mixing control

Models with different setpoint areas
Suitable for various applications

Version with immersion sensor
Fast response time (about 3 to 5 seconds)

Liquid-filled contact or immersion sensor
For accurate control

Technical description

Application:
Heating and cooling systems.

The thermostatic heads 6402-00/ 6402-09/6412/6602/6662 can be used in conjunction with a heat conducting base as a contact sensor or with an immersion sleeve as an immersion sensor.

Thermostatic head 6672 as an immersion sensor without immersion sleeve. Sealed to the capillary tube via clamping joints.

Functions:
Medium temperature control with thermostatic valve bodies and three-way valves.

Temperature range is limited on both ends and can be blocked using covered stop clips.

Control behavior:
Proportional controller without auxilliary energy. Liquid-filled thermostat. High pressure power, lowest hysteresis, optimal closing time.

Nominal temperature range:
The setting range is
10° C to 40° C,
20° C to 50° C,
20° C to 70° C,
40° C to 70° C or
60° C to 90° C.

Temperature:
Maximum sensor temperature
50° C with thermostatic head 6412,
60° C with thermostatic head 6402,
80° C with thermostatic head 6602,
90° C with thermostatic head 6672 and
100° C with thermostatic head 6662.

Specific extension:
6402 / 6602 / 6412 / 6662:
0.17 mm/K,

6672:
0.10 mm/K,

Valve stroke limiter.

Material:
ABS, PA6.6GF30, brass, steel, Liquid-filled thermostat.
Heat conducting base made of aluminum.

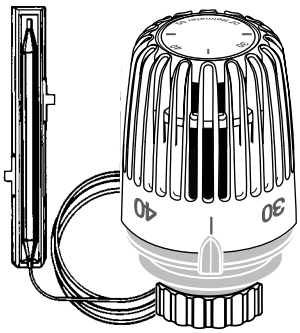
Colour:
White RAL 9016

Marking:
Heimeier.
Setting numbers.

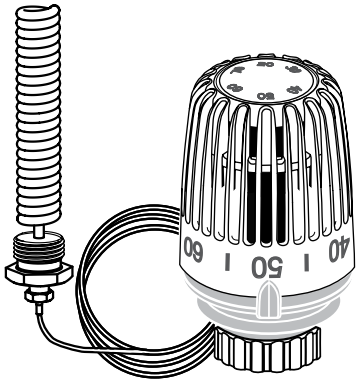
Connection:
Suitable for installation on all IMI Heimeier thermostatic valve bodies, three-way reversing valves and three-way mixing valves.

Construction

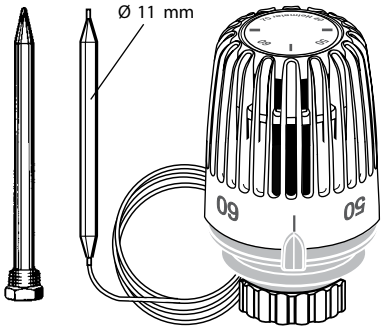
With heat conducting base as a contact sensor



With spiral immersion sensor



With immersion sleeve (accessory) as an immersion sensor



Functions

Controls the set temperature without auxiliary power within a proportional band which is required by controlling technology. If the temperature on the sensor increases, the thermostatic valve bodies are closed.

With IMI Heimeier three-way reversing valves the straight pipe is closed and the angled outflow pipe is opened.
With IMI Heimeier three-way mixing valves the angled pipe is closed and the straight outflow pipe is opened.

Settings

6402-00.500/6402-09.500

Figure	20	30	40	50
Setting value [°C]	20	30	40	50

6602-00.500

Figure	40	50	60	70
Setting value [°C]	40	50	60	70

6672-00.500

Figure	20	30	40	50	60	70
Setting value [°C]	20	30	40	50	60	70

6412-09.500

Figure	10	20	30	40
Setting value [°C]	10	20	30	40

6662-00.500

Figure	60	70	80	90
Setting value [°C]	60	70	80	90

Application

– Control of water temperature in hot water storages

– Continuous supply pipe control for combined floor/radiator heating systems

– Maximum restriction of the supply or return temperature

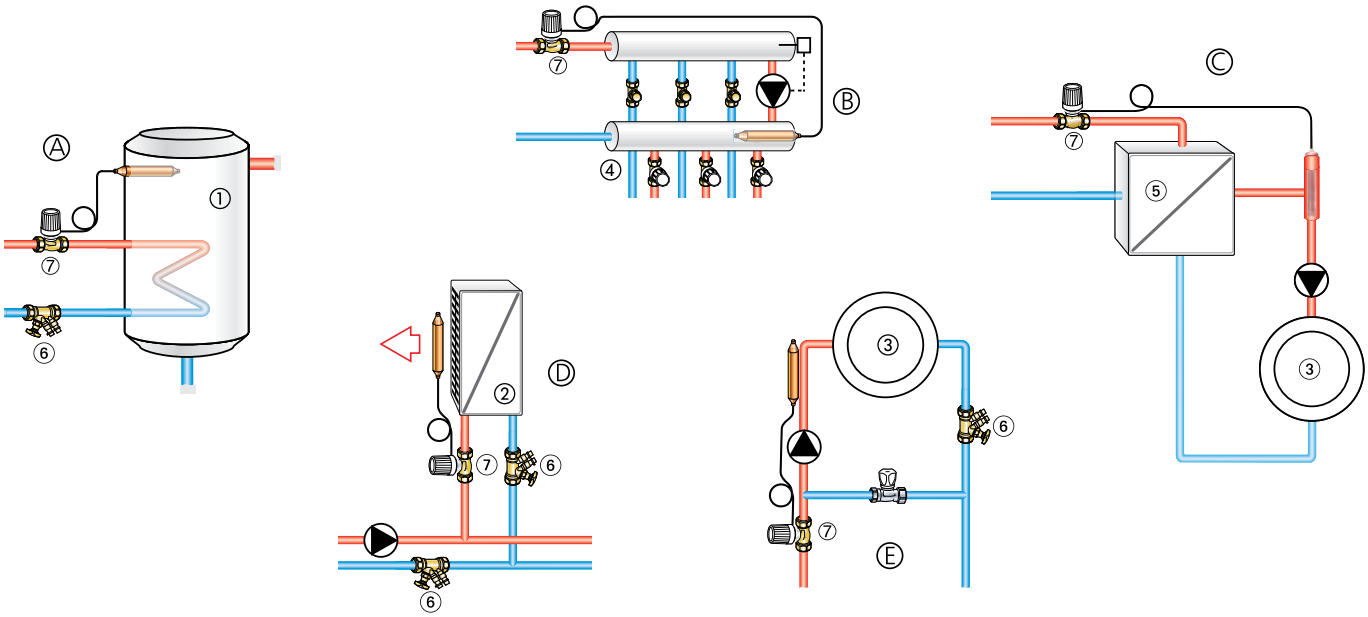
– Minimal restriction or boost of the return temperature

– Constant control of the supply temperature on the secondary side of the heat exchanger

– Control of the blow-out temperature from air heaters

A special feature of the thermostatic head K with spiral immersion sensor is its rapid reaction time (approx. 3 to 5 seconds) – a real benefit in rapid controlled systems, e.g. systems with plate heat exchangers.

Sample application



1. Hot water storage
2. Air heater
3. Heating circuit
4. Manifold station
5. Heat exchanger
6. STAD balancing valve
7. Thermostatic valve

A. Flow rate control for constant water temperatures in hot water storages.

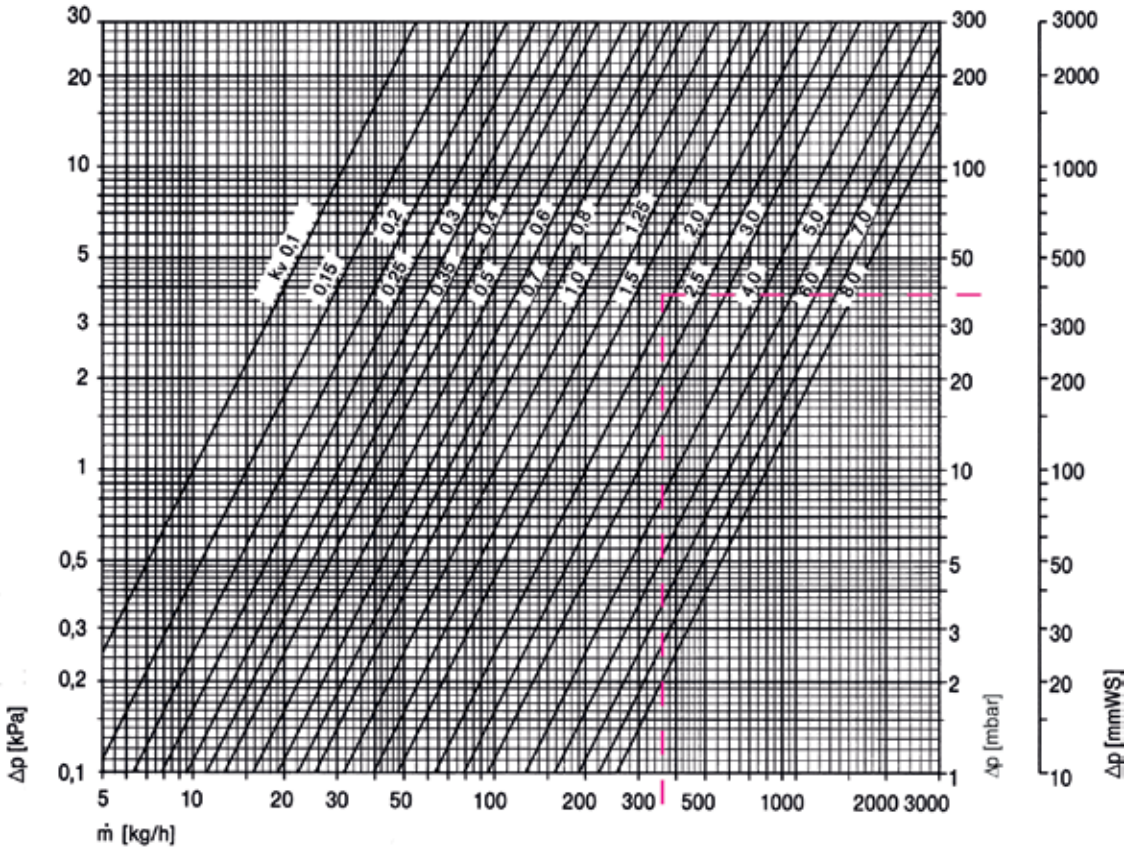
B. Mixing control for floor heating systems for integration into the heating circuit with a higher supply temperature.

C. Flow rate control for constant supply temperature on the secondary side of heat exchangers via spiral immersion sensor.

D. Flow rate control for constant blow-out temperatures for air heaters.

E. Mixing control for constant supply temperatures of heat consumers.

Technical data



Thermostatic head with valve body standard or with three-way reversing or mixing valve

DN	Kv-value P-band [K] [1]				Kvs	Permitted operating temperature TB [°C]	Permitted operating pressure PB [bar]	Permitted differential pressure Δp [bar]
	2,0	4,0	6,0	8,0				
With valve body Standard, straight								
10	0,57	1,14	1,38	1,47	1,50	120	10	1,00
15	0,57	1,14	1,67	1,93	2,00			1,00
20	0,57	1,14	1,70	2,22	2,50			1,00
25	1,05	1,92	2,61	3,20	5,70			0,25
32	1,11	2,37	3,19	3,82	6,70			0,25
Three-way reversing valve								
15	0,60	1,20	1,71	2,10	2,47	120	10	1,20
20	0,70	1,50	2,39	3,10	3,48			0,75
25	1,08	2,28	3,48	4,62	5,12			0,50
Three-way mixing valve [3]								
15	1,40 [2]				2,50	120	10	1,20
20	1,90 [2]				3,50			0,75
25	2,60 [2]				4,60			0,50
32	3,50 [2]				6,40			0,25

1) In thermostatic head K with spiral immersion sensor the given p-bands can be adjusted by a factor of 1.7.

2) Kv value with valve cone in the middle position. Mixing ratio ≈ 50%.

3) Three-way mixing valve “without presetting”. You will find models “with presetting” in the brochure entitled “Three-way mixing valve”.

Sample calculation
Target:
DN thermostatic valve body

Given:
Mass flow: m = 360 kg/h
Valve body pressure loss: Δp_V = 38 mbar
P-band: xp = 6 K

Solution:
Required Kv value from the diagram: between 1,5 und 2,0

Valve bodies from the table: DN 20, kv at 6 K = 1,70

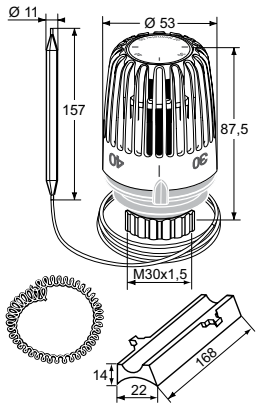
Notes:
You will find further information in the technical leaflets for “Thermostatic valve bodies”, “Three-way reversing valve” and “Three-way mixing valve”.

Other IMI Heimeier thermostatic valve bodies can also be used. The p-bands given in the technical leaflets for “Thermostatic valve bodies” can be adjusted by a factor of 1.3 in thermostatic heads 6402/6412/6602/6662 and by a factor of 2.2 in the thermostatic head 6672.

For three-way reversing valves Kv values correspond to the flow in the straight direction I-II for the given control differences. The Kvs value corresponds to the flow in the I- II direction with valve fully opened or in the I-III direction with the valve closed.

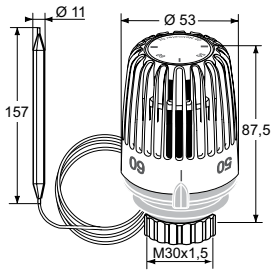
For three-way mixing valves the Kv values correspond to the flow in angular direction B-AB or in straight direction A-AB when the valve cone is in the middle respectively.
The mixing ratio is in this case ≈ 50%. The Kvs value corresponds to the flow in angular direction B-AB with the valve fully opened or with the flow in straight direction A-AB with the valve closed.

Articles



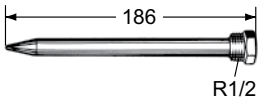
Thermostatic head K with heat conducting base and spiral spring

Setting range	Capillary tube length	EAN	Article No
20°C - 50°C	2 m	4024052274413	6402-00.500



Thermostatic head K without accessories

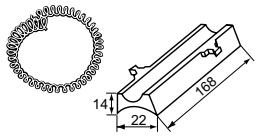
Setting range	Capillary tube length	EAN	Article No
10°C - 40°C	2 m	4024052421657	6412-09.500
20°C - 50°C	2 m	4024052274611	6402-09.500
40°C - 70°C	2 m	4024052275717	6602-00.500
60°C - 90°C	2 m	4024052276011	6662-00.500



Immersion sleeve

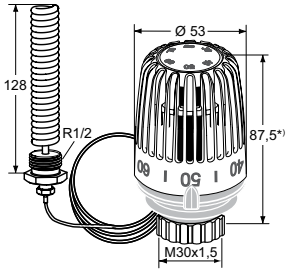
Brass. R 1/2 x 186 mm total length.

EAN	Article No
4024052275618	6602-00.363



Heat conducting base and spiral spring

EAN	Article No
4024052274314	6402-00.200



Thermostatic head K with spiral immersion sensor

R 1/2 x 128 mm total length.

Setting range	Capillary tube length	EAN	Article No
20°C - 70°C	2 m	4024052520855	6672-00.500

*) setting at 3