

Kombi-TRV

Pressure Independent Thermostatic Radiator Valve

APPLICATION

Kombi-TRV is a pressure independent thermostatic radiator valve, designed to be fitted on the supply of radiators in two-pipe heating systems with medium flow rates. The combination of a presettable thermostatic radiator valve and a differential pressure control valve in one product enable a significant increase of the two-pipe heating systems efficiency.

Standard dimensions according to EN215 make Kombi-TRV a perfect and simple solution for new buildings, renovation and retrofit projects.

METHOD OF OPERATION

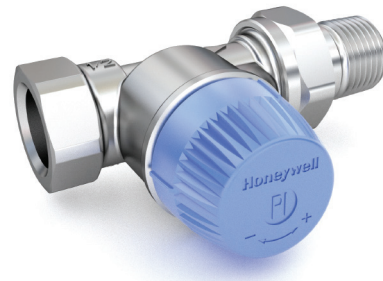
Kombi-TRV is controlled by the radiator thermostat. Air from the room passing over the sensor of the radiator thermostat causes the sensor to expand when the temperature rises. The sensor push the valve spindle and closing the valve. When the temperature falls the sensor contracts and the spring-loaded valve spindle is opened. The TRV opens in proportion to the temperature of the sensor. Only the amount of water required to maintain the room temperature set on the radiator thermostat can flow into the radiator.

Kombi-TRV has also an in-built flow limiter, allowing easy presetting of the maximum design flow through the radiator according to system requirements. The defined flow can be set directly by turning the blue dial on the top of the valve to a particular number.

Kombi-TRV has also in-built pressure regulator, keeping the differential pressure at a constant level and therefore maintaining the set design flow constant. As Kombi-TRV maintains the set flow rate stable independently from differential pressure, only the heating capacity and the resulting maximum flow rate have to be defined. Consequently, complex calculations to determine the valve settings can be avoided.

APPROVALS, CERTIFICATIONS

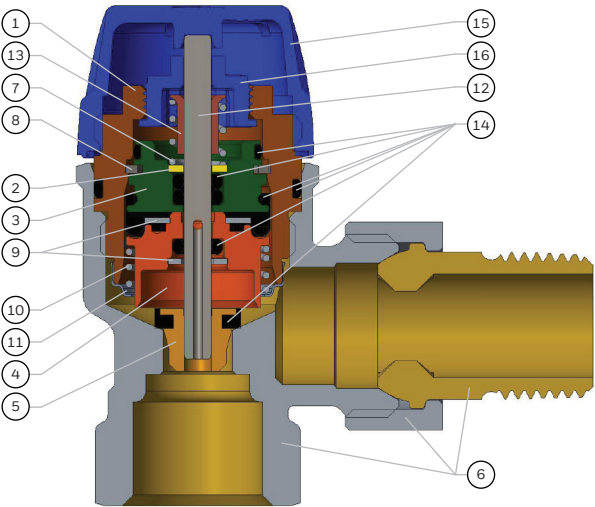
- EN215
- Keymark (applied for keymark certification and testing)



KEY FEATURES

- Flow rate easily adjustable by standard wrench size 7 or a special setting key (see "Accessories")
- Integrated differential pressure controller
- Standard dimensions according to EN215
- Kombi-TRV valves are compatible with
 - Honeywell radiator thermostats with M30 x 1.5 connection
 - Certain Honeywell MT4 actuators
 - Honeywell HR types of Home and Roomtronic actuators
- The valve insert can be replaced while the system is operating and without draining using the service tool (see 'Accessories').
- Valve housing and insert does not fit to Honeywell AT-Concept design

CONSTRUCTION

Overview	Components	Materials
	1 Insert body	Brass
	2 Washer	
	3 Holder	
	4 Flow limiter	
	5 Plunger	
	6 Valve body, tailpiece, nut	
	7 Spring	Stainless steel
	8 Spring ring	
	9 Washer	
	10 Spring	
	11 Spring holder	
	12 Spindel	Cu
	13 Spindel holder	
	14 O-rings	
	15 Protection cap	PP
	16 Setting dial	PBT

TECHNICAL DATA

Media	
Medium:	Water or water-glycol mixture, quality to VDI 2035
pH-value:	8 - 9.5
Connections / Sizes	
Body-head connection:	M30x1,5
Sizes:	DN10, DN15, DN20
Operating temperatures	
Max. operating temperature	120 °C (248 °F)
Min. operating temperature	2 °C (35,6 °F)
Pressure values	
Max. operating pressure:	PN10, 10 bar (1000 kPa)
Max. differential pressure:	0,6 bar (60 kPa)
Min. differential pressure:	0,1 bar (10 kPa)
Flow rates	
Flow range:	20 - 140 l/h
Max. nominal flow at 10 kPa (EN215):	120 l/h
Specifications	
Closing dimension:	11,5 mm
Stroke:	2,5 mm
Factory setting:	position 8 (fully open)
Identification	
- Blue protection cap with embossed 'PI' on the top	
- Blue plastic dial on the top of valve insert	

TRANSPORTATION AND STORAGE

Keep parts in their original packaging and unpack them shortly before use.

The following parameters apply during transportation and storage:

Parameter	Value
Environment:	clean, dry and dust free
Min. ambient temperature:	0 °C
Max. ambient temperature:	40 °C
Max.ambient relative humidity:	75 % *

INSTALLATION/APPLICATION EXAMPLES

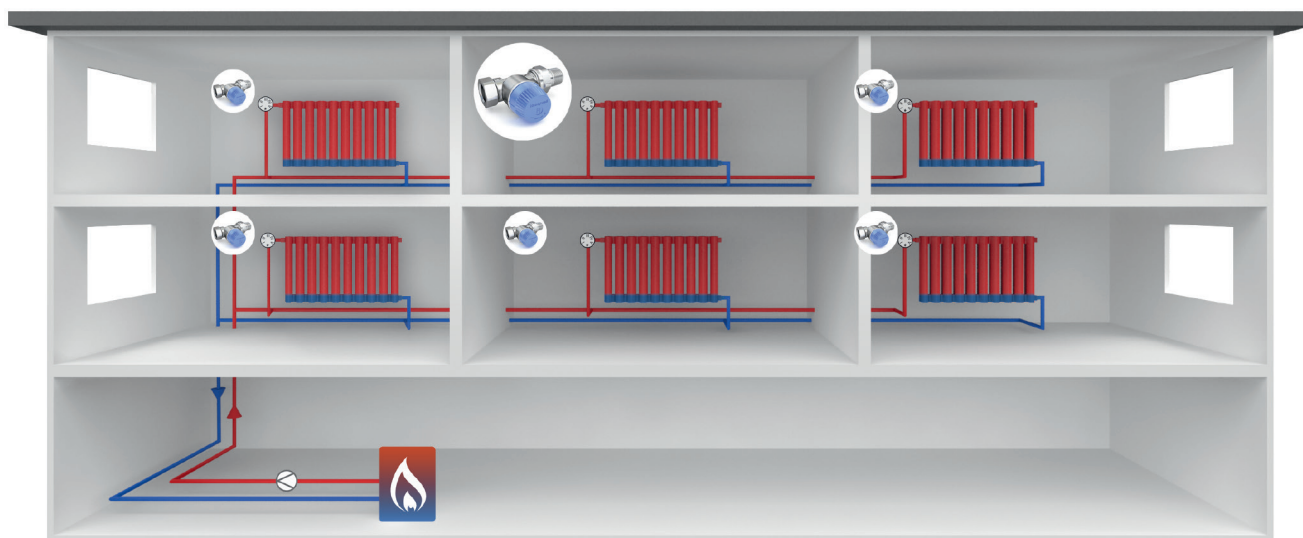
Kombi-TRV can be used in:

- Two-pipe radiator systems
- Two-pipe radiator systems with differential pressure control
- Two-pipe radiator systems with weather compensation
- In two-pipe multi-storey radiator systems
- In heating systems with an oil or gas boiler
- In heating systems with a condensing oil or gas boiler with weather compensation
- Direct district energy heating systems with differential pressure control
- In indirect district energy heating systems
- Heat pump heating systems with ΔT higher than 10°C .

Kombi-TRV cannot be used in:

- One-pipe heating system
- Two-pipe systems with Air Handling Unit
- in direct district energy heating systems
- in heat pump heating systems with ΔT lower than 10°C

Two-pipe radiator systems



Setup and application requirements:

- To avoid stone deposit and corrosion the composition of the medium should conform with VDI-Guideline 2035
- All additives and lubricants used for heating medium treatment have to be suitable for EPDM seals to avoid their disintegration. Use of mineral oils should be avoided
- For industrial and long-distance energy systems please refer to applicable codes VdTÜV and 1466/AGFW FW 510
- Heavy polluted existing heating systems must be flushed thoroughly before replacing thermostatic valves
- The heating system must be fully deaerated
- The blue protection cap must not be used as manual shut off device. A special manual handwheel cap should be used (see accessories)
- Any complaints or costs resulting from non-compliance with above rules will not be accepted by Honeywell

INSTALLATION GUIDELINES

Installation examples

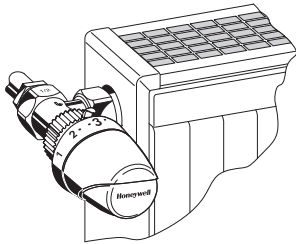


Fig. 1. Angle

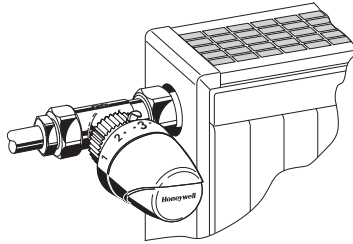


Fig. 2. Straight

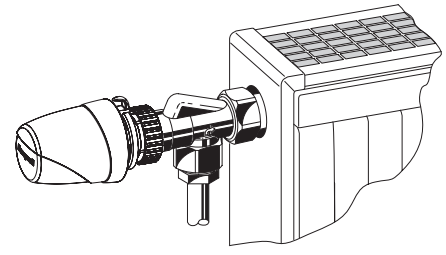
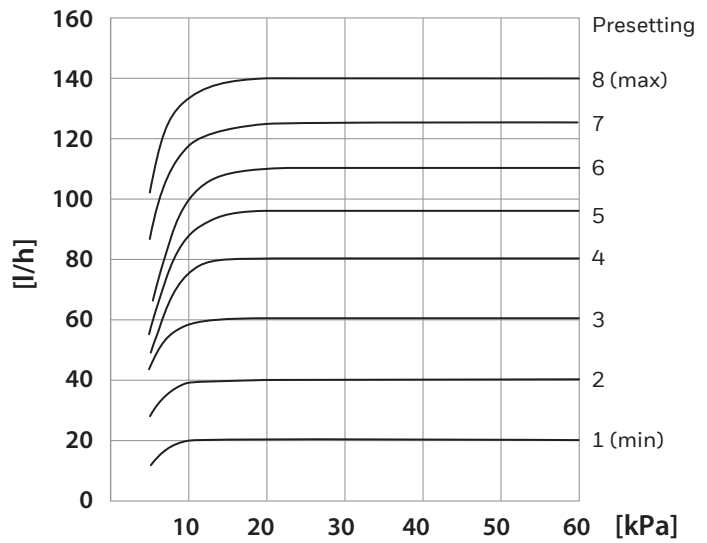
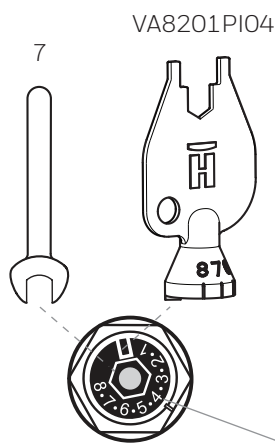


Fig. 3. Horizontal angle

Technical characteristics

Flow chart and settings



n	1	*	2	*	3	*	4	*	5	*	6	*	7	*	8
Q [l/h]	20	30	40	50	60	70	80	88	95	103	110	118	125	133	140

Tab. 1.

Presetting

- The flow rates can be steplessly adjusted between 1 to 8 (20 to 140 l/h)
- The default factory setting is position 8 - fully open
- The setting is changed using either a special setting key (see accessories) or a standard 7 mm wrench
 - Slide the setting key on the hexagon of the blue plastic dial, ensuring that the 'embossed' part fits to the positioning slot (see Tab.1)
 - Turn the setting key until the desired setting value reach the position of the index recess in the valve insert body
 - Remove the key or wrench

Design example

- Required heat: 1800 W
- Radiator ΔT : 20 °C
- Calculated design flow: 78 l/h
- Min. ΔP : 0,1 bar
- Valve setting: 4 (see also Tab.1)

DIMENSIONS AND ORDERING INFORMATION

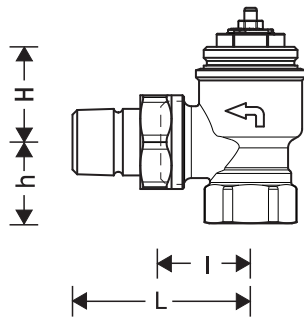


Fig. 1. Angle

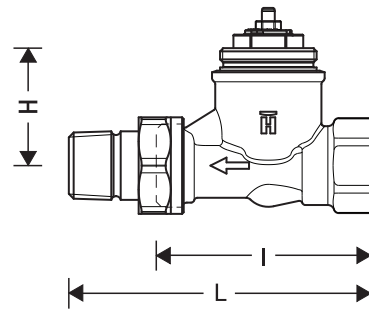


Fig. 2. Straight

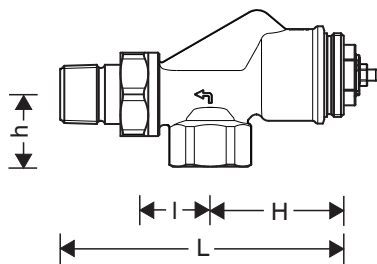


Fig. 3. Horizontal angle

Tab. 2. Dimensions and OS-Nos (OS=Ordering System)


Body type	DN	EN215 certified	Pipe connection	l	L	h	H	OS-No.
For the supply								
Angle to EN215 (D) (Fig. 1)	10	•	Rp 3/8"	26	52	22	29	V2100EPI10
	15	•	Rp 1/2"	29	58	26	31	V2100EPI15
	20	•	Rp 3/4"	34	66	29	27	V2100EPI20
Straight to EN215 (D) (Fig. 2)	10	•	Rp 3/8"	59	85	—	37	V2100DPI10
	15	•	Rp 1/2"	66	95	—	37	V2100DPI15
	20	•	Rp 3/4"	74	106	—	37	V2100DPI20
Horizontal angle (Fig. 3)	10		Rp 3/8"	24	89	22	39	V2100API10
	15		Rp 1/2"	26	96	26	41	V2100API15

NOTE: All dimensions in mm unless stated otherwise.

ACCESSORIES


Pipe Connections

Compression fitting for **COPPER** and **STEEL** pipe.
Consisting of compression nut and compression ring.
For valves with internal thread.

	Valve size	Pipe dimension	Part number	Pcs/pack
	3/8" (DN10)	10 mm	FIG3/8CS10	1
	3/8" (DN10)	12 mm	FIG3/8CS12	1
	1/2" (DN15)	10 mm	FIG1/2CS10	1
	1/2" (DN15)	12 mm	FIG1/2CS12	1
	1/2" (DN15)	14 mm	FIG1/2CS14	1
	1/2" (DN15)	15 mm	FIG1/2CS15	1
	1/2" (DN15)	16 mm	FIG1/2CS16	1
	3/4" (DN20)	18 mm	FIG3/4CS18	1
	3/4" (DN20)	22 mm	FIG3/4CS22	1


NOTE: Support inserts have to be used for copper or soft steel pipe with 1.0 mm wall thickness. Max. operating temperature 120°C, max. operating pressure 10 bar.

Compression fitting for **COPPER** and **SOFT STEEL** pipe.
Consisting of compression nut, compression ring and support insert.
For valves with internal thread.

	Valve size	Pipe dimension	Part number	Pcs/pack
	3/8" (DN10)	12 mm	FIG3/8CSS12	1
	1/2" (DN15)	12 mm	FIG1/2CSS12	1
	1/2" (DN15)	14 mm	FIG1/2CSS14	1
	1/2" (DN15)	15 mm	FIG1/2CSS15	1
	1/2" (DN15)	16 mm	FIG1/2CSS16	1
	1/2" (DN15)	18 mm	FIG1/2CSS18	1
	3/4" (DN20)	18 mm	FIG3/4CSS18	1


NOTE: Support inserts have to be used for copper or soft steel pipe with 1.0 mm wall thickness. Max. operating temperature 120°C, max. operating pressure 10 bar.

Compression fitting for **MULTILAYER** pipe.
Consisting of compression nut, compression ring and support insert.
For valves with internal thread.


	Valve size	Pipe dimension	Part number	Pcs/pack
	1/2" (DN15)	16 mm	FIG1/2M16X2	1

NOTE: Max. operating temperature 90°C, max. operating pressure 10 bar.

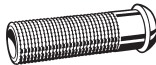
Reduction

	1" pipe > 1/2" valve	VA6290A260
	1 1/4" pipe > 1/2" valve	VA6290A280
	1" pipe > 3/4" valve	VA6290A285
	1 1/4" pipe > 3/4" valve	VA6290A305

Radiator tailpiece with thread up to collar


	for valves DN10 (3/8")	VA5201A010
	for valves DN15 (1/2")	VA5201A015
	for valves DN20 (3/4")	VA5201A020

Extended radiator tailpiece, nickel-plated, to be shortened as required


	3/8" x 70 mm (for DN10) thread approx. 50 mm	VA5204B010
	1/2" x 76 mm (for DN15) thread approx. 65 mm	VA5204B015
	3/4" x 70 mm (for DN20) thread approx. 60 mm	VA5204B020

Valve Accessories


Manual handwheel cap

	Pre-settable, with integrated locking device	VA2200D001
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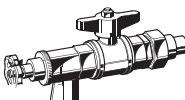
Pressure cap – for shutting off valves on radiator outlet

	for valves DN10 (3/8")	VA2202A010
	for valves DN15 (1/2")	VA2202A015
	for valves DN20 (3/4")	VA2202A020


Sealing ring for pressure cap

	for valves DN10 (3/8")	VA5090A010
	for valves DN15 (1/2")	VA5090A015
	for valves DN20 (3/4")	VA5090A020


Service tool to replace valve insert

	for all PI types	VA8200A003
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Pre-setting key

	for all PI, VS, FS, FV and SL type valves	VA8201PI04
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Replacement valve insert

	PI type	VS1200PI01
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Environmental & Energy Solutions

Honeywell GmbH
Hardhofweg
74821 MOSBACH
GERMANY
Phone: (49) 6261 810
Fax: (49) 6261 81309
<http://ecc.emea.honeywell.com>

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