Honeywell Home

V2000FS

FS type TRV Body

Finely presettable radiator valve with flush position

APPLICATION

Thermostatic radiator valve bodies (TRV bodies) are fitted on the supply or return of radiators or heat exchangers. Together with a radiator thermostat, for example the Thera-4, they control the room temperature by regulating the flow of hot water into the radiator or heat exchanger. The temperature of different rooms is controlled individually and energy is saved.

TRV bodies of this type have quiet operation and are fitted to the supply of radiators on two-pipe systems with small flow rates.

The flow rate can be preset according to system requirements.

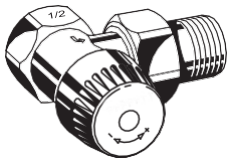
The valve insert can be replaced while the system is running and without draining using the service tool (see 'Accessories').

TRV bodies of this type are suitable for

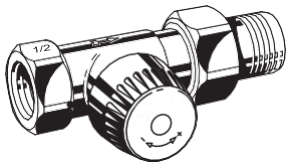
- Honeywell Home radiator thermostats with M30 x 1.5 connection
- Certain Honeywell Home MT4 actuators
- Honeywell Home Hometronic HR80 and Roomtronic HR40 actuators

AT-CONCEPT

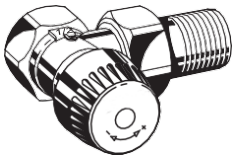
AT-Concept valves share the same valve housing design. The valve insert can be replaced by any other AT-Concept valve insert, i.e. BB, KV, UBG, SL, VS, FS, FV and SC.



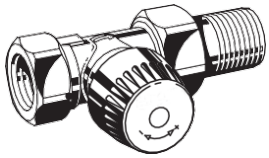
Angle to DIN



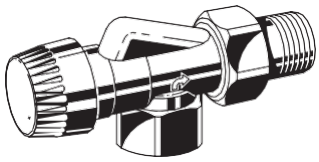
Straight to DIN



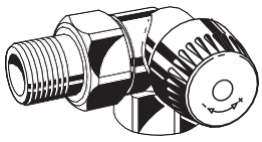
Angle to NF



Straight to NF



Horizontal angle



Corner angle, right

FEATURES

- Presettable fine-adjustment valve disc
- Tamper-proof presetting, visible when radiator thermostat is removed
- For heating systems with small flow rates
- With extra position for system flushing
- Quiet operation
- DIN type bodies with dimensions according to EN 215, Appendix A, Series D
- NF type bodies with dimensions according to EN 215, Appendix A, Series F
- AT-Concept valve housing and insert
- Valve insert can be replaced while system is operating and without draining the system
- Valve opening spring is not in the water
- Standard M30 x 1.5 thermostat connection
- Supplied with brown protection cap, imprinted 'FS' for clear identification

DESIGN

The thermostatic radiator valve body consists of:

- Valve housing PN10, DN10, 15 or 20 with
  - internal thread connection to DIN2999 (ISO7) for threaded, copper or precision steel pipe on inlet (compression ring fittings see 'Accessories')
  - external thread connection with union-nut and radiator tailpiece on outlet (Eurocone for DN15)
  - angle to DIN and straight to DIN bodies with dimensions according to EN215, Appendix A, Series D
  - angle to NF and straight to NF bodies with dimensions according to EN215, Appendix A, Series F
- Finely presettable valve insert with flush position
- Protection cap
- Union-nut and radiator tailpiece

MATERIALS

- Valve housing made of nickel-plated hot-forged brass
- Valve insert made of brass with EPDM O-rings and soft seals and stainless steel spindel, brown plastic presetting ring
- Protection cap made of black plastic
- Union-nut and tailpiece made of nickel-plated brass

SPECIFICATIONS

Medium:	Heating water, water quality to VDI2035
Max. operating temperature:	130 °C (266°F)
Operating pressure:	PN10
Max. differential pressure:	200 kPa (2 bar, 29 psi) – 20 kPa (0.2 bar, 2.9 psi) recommended for quiet operation
k_{vs} (c_{vs})-value:	0.60 (0.70)
Nominal flow:	111 kg/h
Body-head connection:	M30 x 1.5
Closing dimension:	11.5 mm
Stroke:	2.5 mm

PLEASE NOTE:

- To avoid stone deposit and corrosion the composition of the medium should conform with VDI-Guideline 2035
- Additives have to be suitable for EPDM sealings
- System has to be flushed thoroughly before initial operation with all valves fully open
- Any complaints or costs resulting from non-compliance with above rules will not be accepted by Honeywell Home
- Please contact us if you should have any special requirements or needs

FUNCTION

Thermostatic radiator valves enable individual control of room temperature and thus save energy.

The TRV body 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 acts onto the valve spindle and this causes the TRV body to close. 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.

IDENTIFICATION

- Brown protection cap, 'FS' embossed on top of cap
- Brass valve insert with brown plastic dial on top

INSTALLATION EXAMPLE

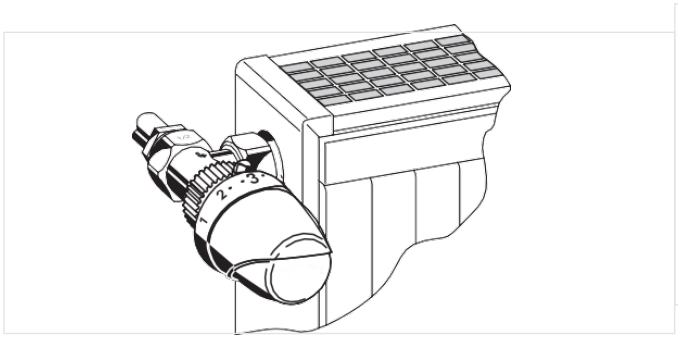


Fig. 1. Angle

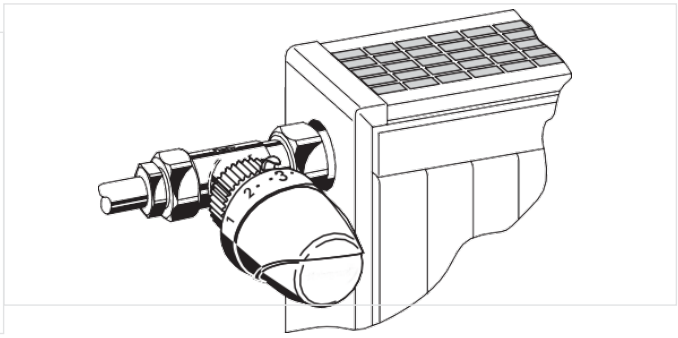


Fig. 2. Straight

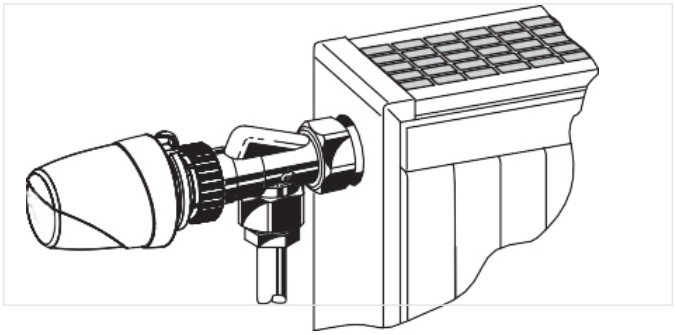


Fig. 3. Horizontal angle

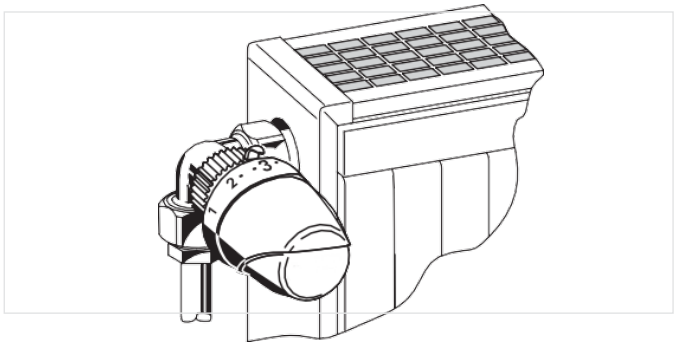


Fig. 4. Corner angle left

DIMENSIONS AND ORDERING INFORMATION

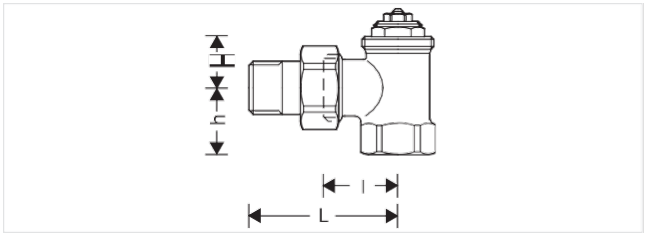


Fig. 5. Angle

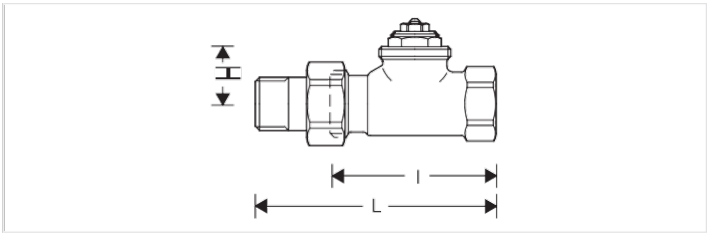


Fig. 6. Straight

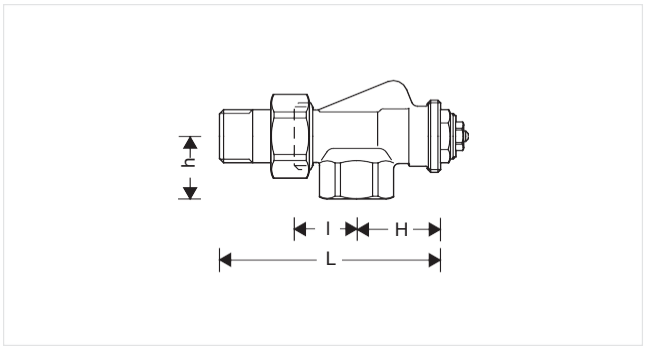


Fig. 7. Horizontal angle

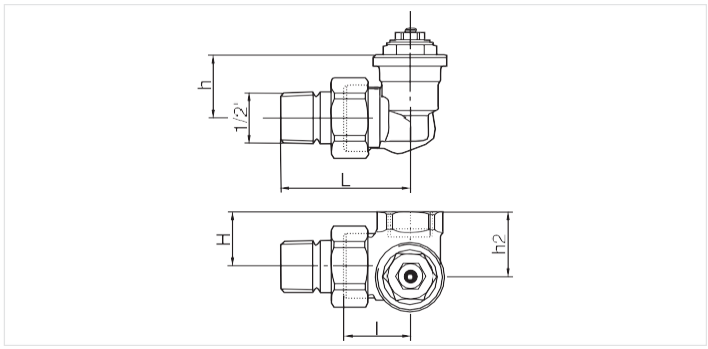
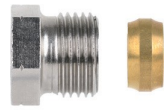
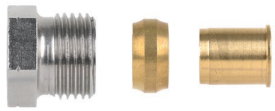


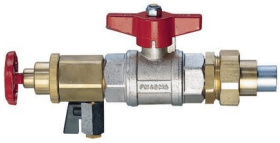
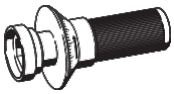
Fig. 8. Corner angle

Body type	DN	EN215 certified	$k_{vs}(c_{vs})$-value	Pipe connection	I	L	h	H	h_2	OS-No.
For the supply										
Angle to EN215 (D)	10	•	0.60 (0.70)	Rp 3/8"	26	52	22	20	-	V2000EFS10
(Fig. 5)	15	•	0.60 (0.70)	Rp 1/2"	29	58	26	20	-	V2000EFS15
	20	•	0.60 (0.70)	Rp 3/4"	34	66	29	19	-	V2000EFS20
Straight to EN215 (D)	10	•	0.60 (0.70)	Rp 3/8"	59	85	-	25	-	V2000DFS10
(Fig. 6)	15	•	0.60 (0.70)	Rp 1/2"	66	95	-	25	-	V2000DFS15
	20	•	0.60 (0.70)	Rp 3/4"	74	106	-	25	-	V2000DFS20
Angle to EN215 (F)	10	•	0.60 (0.70)	Rp 3/8"	24	49	20	21	-	V2020EFS10
(Fig. 5)	15	•	0.60 (0.70)	Rp 1/2"	26	53	23	22	-	V2020EFS15
Straight to EN215 (F)	10	•	0.60 (0.70)	Rp 3/8"	50	75	-	26	-	V2020DFS10
(Fig. 6)	15	•	0.60 (0.70)	Rp 1/2"	55	82	-	26	-	V2020DFS15
Horizontal angle	10		0.60 (0.70)	Rp 3/8"	24	50	22	33	-	V2000AFS10
(Fig. 7)	15		0.60 (0.70)	Rp 1/2"	26	54	26	35	-	V2000AFS15
Corner angle, radiator connection left (Fig. 8)	15		0.60 (0.70)	Rp 1/2"	24	53	26	26	30.5	V2000LFS15
Corner angle, radiator connection right (Fig. 8)	15		0.60 (0.70)	Rp 1/2"	24	53	26	26	30.5	V2000RFS15

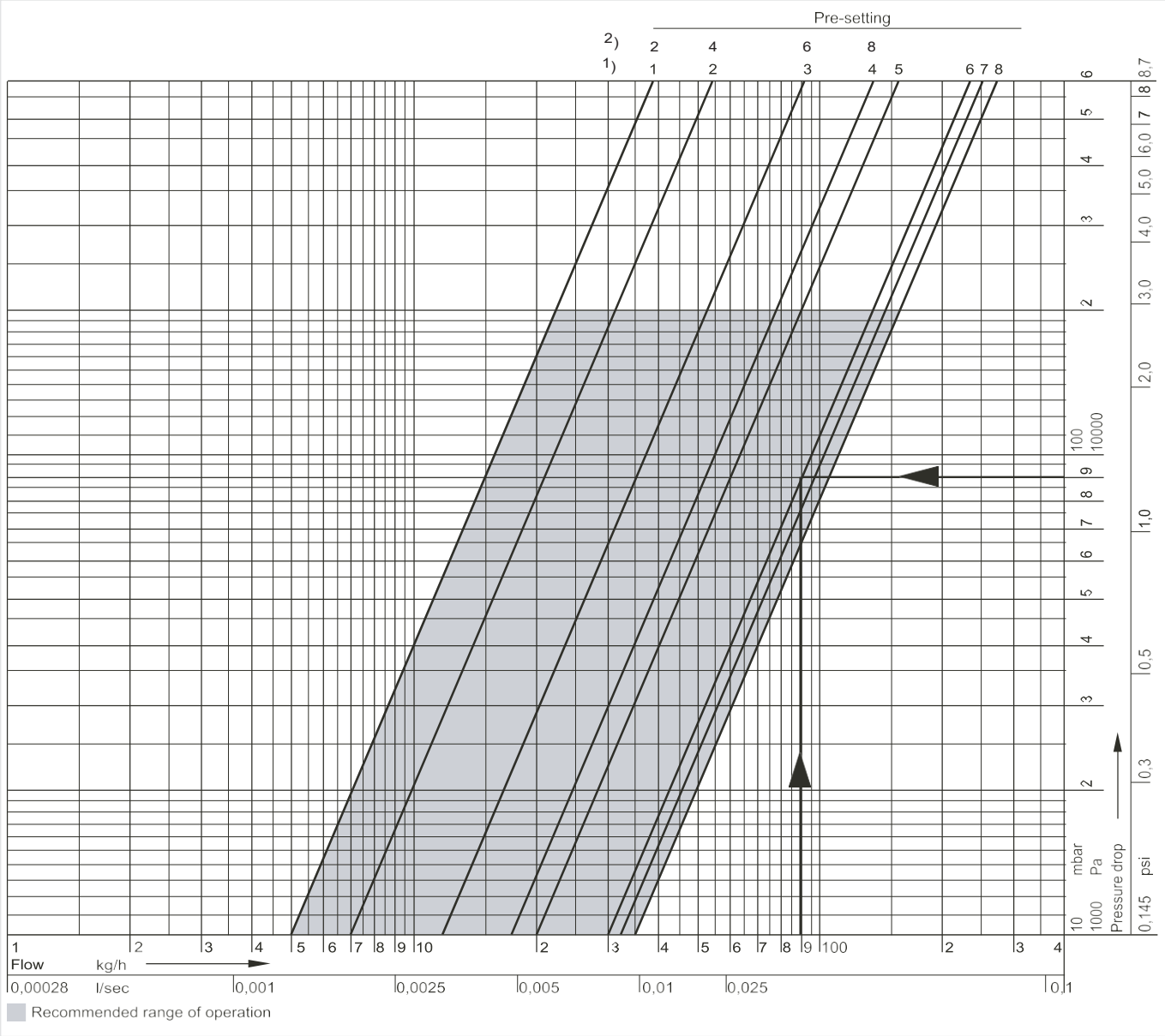
Note: All dimensions in mm unless stated otherwise.

ACCESSORIES

	Description		Dimension	Part No.
	**FIG3/8CS**	**Compression fitting for COPPER and STEEL pipe** Consisting of compression nut and compression ring. For valves with internal thread. 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.		
		$^3/_8$", DN10	10 mm	FIG3/8CS10
		$^3/_8$", DN10	12 mm	FIG3/8CS12
		$^1/_2$", DN15	10 mm	FIG1/2CS10
		$^1/_2$", DN15	12 mm	FIG1/2CS12
		$^1/_2$", DN15	14 mm	FIG1/2CS14
		$^1/_2$", DN15	15 mm	FIG1/2CS15
		$^1/_2$", DN15	15 mm	FIG1/2CS15-10
		$^1/_2$", DN15	16 mm	FIG1/2CS16
		$^3/_4$", DN20	18 mm	FIG3/4CS18
		$^3/_4$", DN20	22 mm	FIG3/4CS22
	**FIG3/8CSS**	**Compression fitting for COPPER and STEEL pipe** Consisting of compression nut and compression ring and support insert. For valves with internal thread. 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.		
		$^3/_8$", DN10	12 mm	FIG3/8CSS12
		$^1/_2$", DN15	12 mm	FIG1/2CSS12
		$^1/_2$", DN15	14 mm	FIG1/2CSS14
		$^1/_2$", DN15	15 mm	FIG1/2CSS15
		$^1/_2$", DN15	16 mm	FIG1/2CSS16
		$^1/_2$", DN15	18 mm	FIG1/2CSS18
		$^3/_4$", DN20	18 mm	FIG3/4CSS18
	**FIG1/2M**	**Compression fitting for MULTILAYER pipe. Consisting of compression nut, compression ring and support insert. For valves with internal thread.** Note: Max. operating temperature 90°C, max. operating pressure 10 bar		
		$^1/_2$", DN15	16 mm	FIG1/2M16X2
	**VA6290**	**Reduction piece**		
		1" pipe > $^1/_2$" valve		VA6290A260
		$1^1/_4$" pipe > $^1/_2$" valve		VA6290A280
	**VA5201Axxx**	**Radiator tailpiece with thread up to collar**		
		for valves DN10 ($^3/_8$")		VA5201A010
		for valves DN15 ($^1/_2$")		VA5201A015
	**VA5204Bxxx**	**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

	**VA2200Dxxx**	**Manual handwheel cap**		
		Presettable, with integrated locking device		VA2200D001
	**VA2202Axxx**	**Pressure cap – for shutting off valves on radiator outlet**		
		for valves DN10 ($^3/_8$")		VA2202A010
		for valves DN15 ($^1/_{2"}$)		VA2202A015
	**VA5090**	**Sealing ring for pressure cap**		
		for valves DN10 ($^3/_8$")		VA5090A010
		for valves DN15 ($^1/_2$")		VA5090A015
	**VA8200A**	**Service tool to replace valve insert**		
			for all sizes	VA8200A001
	**VA8201**	**Precision presetting key**		
		for all VS and FS type valves		VA8201FV03
	**VA8201**	**Presetting key**		
		for all VS, V, FS and FV type valves		VA8201FV02
	**VS1200**	**Replacement valve insert**		
		FS type		VS1200FS01

FLOW DIAGRAM (BASED ON 2K)

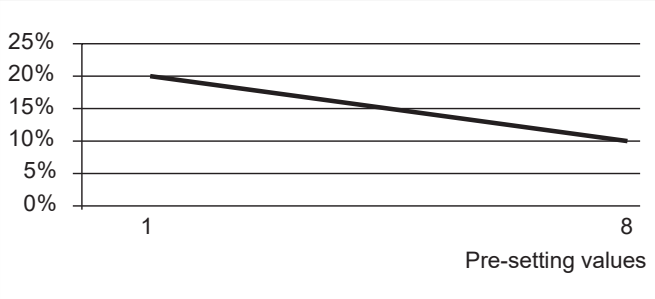


1 This diagram is based of use of TRV-Heads with a spec. stroke of s = 0.22 mm/K

2 In case of use of TRV-Heads with a spec. stroke s = 0.11 mm/K

Presetting	1	2	3	4	5	6	7	8
xP = 1K (m^3/h)	0.04	0.05	0.10	0.13	0.15	0.17	0.20	0.20
xP = 2K (m^3/h)	0.05	0.07	0.12	0.17	0.2	0.3	0.32	0.35
k_v-value (m^3/h)	0.05	0.07	0.12	0.21	0.30	0.37	0.50	0.60
c_v-value (m3/h)	0.06	0.08	0.14	0.24	0.35	0.43	0.58	0.70

Tolerances for Presetting Values



Note: Presetting 8 = flush position, set by factory

Design example

Given:	Flow rate 90 kg/h
Required:	Presetting for a required pressure loss Δp = 90 mbar = 9 000 Pa with a P-band of 2K
Solution:	The required pressure loss is found at the intersection of the flow line with the line for the chosen valve performance P=2K
Result:	Presetting 6

For more information

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