

Data sheet

Thermostatic element for 2- and 3-way valves RAVK

Description / Application



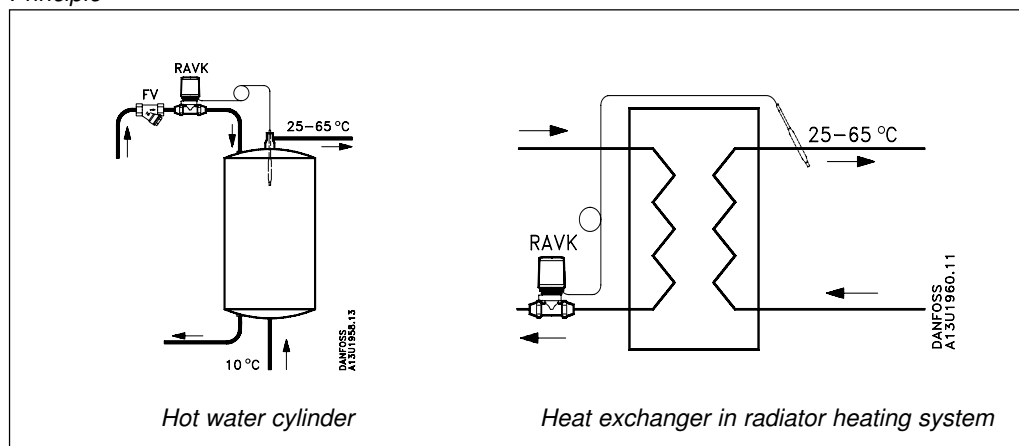
RAVK is used for temperature control of small hot water cylinders (e.g. storage tanks) or heat exchangers in radiator heating systems.

RAVK is a selfacting thermostatic element, which can be combined with 2-way valve bodies RAV-/8, VMT-/8, VMA or with 3-way valve body KOVM

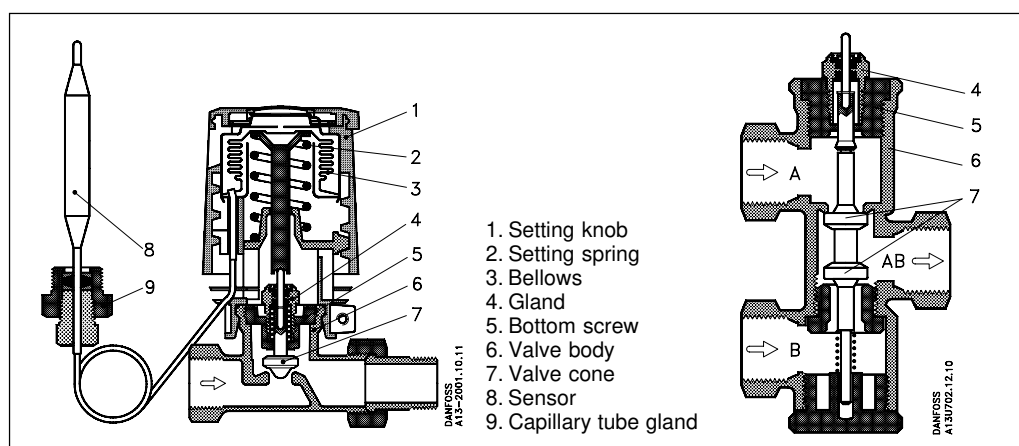
RAVK is used together with 3-way valve VMV 15 and VMV 20 for temperature-dependent mixing control of hot water service.

- Closes on rising sensor temperature
- Temperature range 25 - 65 °C (50 - 98 °C with VMV)
- Mounting in flow or return
- Sized for pressure range PN 10 or PN 16 dependent of valve type
- Max. 120 °C.

Principle



Design



Materials, parts in contact with water
 Valve body: Ms 58, nickel-plated
 Valve cone: NBR-rubber
 Pressure pin: 18/8 stainless steel
 O-ring: EPDM-rubber

Sensor: Cu
 Sensor pocket: Brass
 Capillary tube: Cu

Technical data and ordering
Element

Type	Setting range °C	Capillary length m	Max. sensor temperature °C	Code No.
RAVK	25 - 65	2.0	120	013U8063

Valve bodies

Type	Version	Connection		k _v ¹⁾ m ³ /h	Code No.
		Inlet	Outlet		
RAV 10/8	Straight	R _p 3/8	R 3/8	1.2	013U0012
RAV 15/8	Straight	R _p 1/2	R 1/2	1.5	013U0017
RAV 20/8	Straight	R _p 3/4	R 3/4	2.3	013U0022
RAV 25/8	Straight	R _p 1	R 1	3.1	013U0027
VMT 15/8 ²⁾	Straight	G 3/4 A		1.5	065F0115
VMT 20/8 ²⁾	Straight	G 1 A		2.3	065F0120
VMT 25/8 ²⁾	Straight	G 1 1/4 A		3.1	065F0125
VMA 15	Straight	G 3/4 A		0.25	065F2030
VMA 15	Straight			0.4	065F2031
VMA 15	Straight			0.63	065F2032
VMA 15	Straight			1.0	065F2033
VMA 15	Straight			1.6	065F2034
VMA 15	Straight			2.5	065F2035
VMV 15	3-way	R _p 1/2	R _p 1/2	2.5	065F0015
VMV 20	3-way	R _p 3/4	R _p 3/4	4.0	065F0020
KOVM	3-way	R _p 1/2	R _p 1/2	0.63	013U3014
KOVM	3-way	R _p 1/2	R _p 1/2	1.5	013U3015
KOVM	3-way	R _p 1/2	R _p 1/2	2.0	013U3020

- 1) Capacity (k_v) is max. value
 2) Ordering of copper tube connections, see accessories

Type RAVK	k _v m ³ /h at a P-Band °C of					Max. pressure		Test pressure bar	Max. flow temperature °C	Max. sensor temp. °C
	2	4	6	8	10	PN bar	Δp bar			
RAV/VMT 10/8	0.35	0.65	0.85	1.0	1.1	10	0.8	16	120	120
RAV/VMT 15/8	0.5	0.75	0.95	1.1	1.2					
RAV/VMT 20/8	0.55	1.1	1.6	2	2.2					
RAV/VMT 25/8	0.6	1.2	1.8	2.2	2.3					
VMA (0.25)	0.1	0.2	0.2	0.2	0.2	16	3.0	25	130	120
VMA (0.4)	0.1	0.3	0.3	0.3	0.3					
VMA (0.63)	0.2	0.5	0.6	0.6	0.6					
VMA (1.0)	0.2	0.5	0.7	0.7	0.7					
VMA (1.6)	0.2	0.6	0.8	0.8	0.8					
VMA (2.5)	0.4	0.9	1.3	1.3	1.3					
VMV 15 (2.5)	0.45	0.9	1.3	1.75	2.2	16	0.2	25	120	120
VMV 20 (4.0)	0.7	1.4	2.1	2.8	3.6					
KOVM	0.3	0.4	0.5	0.6	0.6	10	0.8	16	90	120
KOVM	0.7	0.9	1.2	1.3	1.5					
KOVM	0.9	1.3	1.6	1.8	2.0					

Accessories

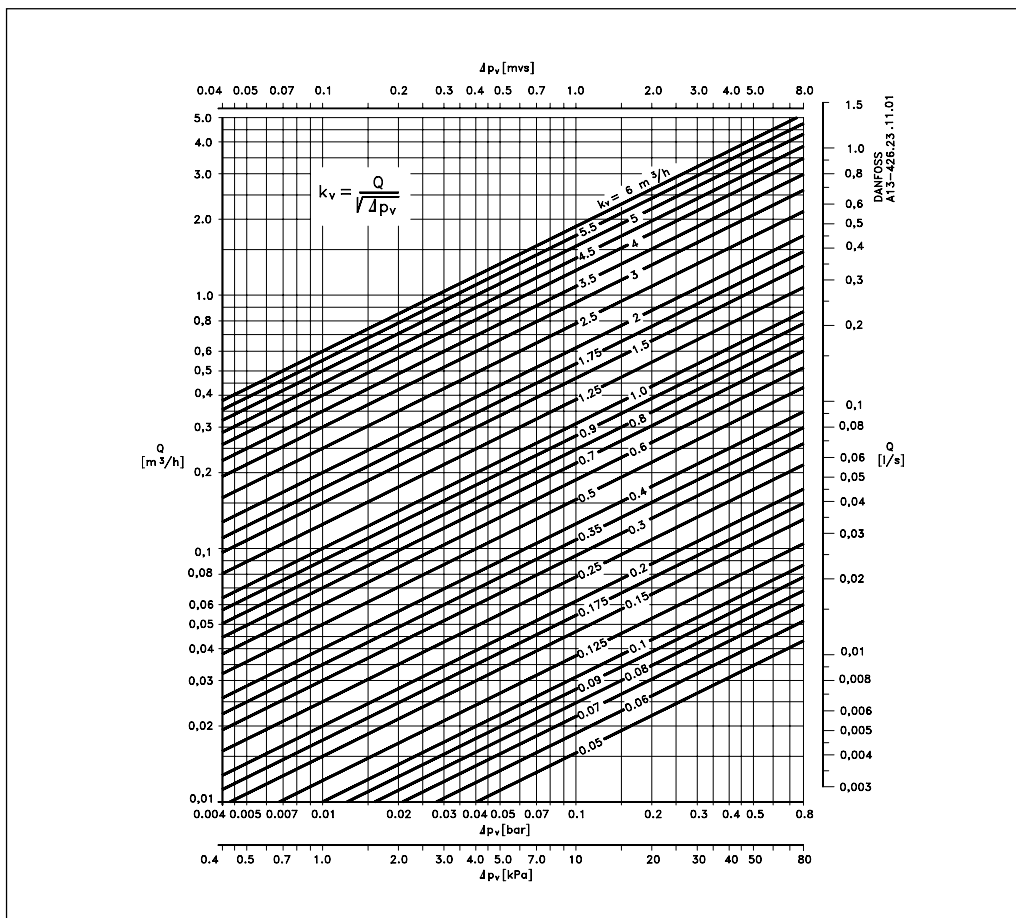
Type	Cu-fittings	Code No.
VMT 15	∅ 15 × 1	013G4125*
	∅ 16 × 1	013G4126*
	∅ 18 × 1	013G4128*
VMT 20	∅ 18 × 1	013U0134*
	∅ 22 × 1	013U0135*
VMT 25	∅ 28 × 1	013U0140*

Description	Connection	Code No.
Gland	RAV/VMT/KOVM	065F0006
Compression fittings for KOVM	∅ 12 mm	013L0288
	∅ 14 mm	013L0291
	∅ 15 mm	013L0289
	∅ 16 mm	031L0292

*) Supplied in cartons of 10.

Description	Connection	Code No.
Sensor pocket	R 1/2 x M14 x 1 brass	017-4370
Sensor pocket	R 1/2 x M18 x 1.5 stainless steel	017-4369
Capillary tube gland	R 1/2	993N3510

Sizing



Example: (RAVK and RAV/VMT)
Hot water temperature control

Given:

Load: 14 kW (12.000 kcal/h)

Primary temperature drop: 20 °C

Volume: $\frac{12}{20} = 0.6 \text{ m}^3 / \text{h}$

Differential pressure Δp
across valve: 0.12 bar

Required:

The correct valve size

Solution:

From water volume (0.6 m³/h) and differential pressure (0.12 bar), read off the necessary k_v value in diagram = 1.75.

In this example, a P-band of 6 °C is required. From the k_v columns in the table, under 6 °C, find the appropriate valve body. Here, the most suitable valve body is RAV 25/8 or VMT 25/8 with a k_v value of 1.8.

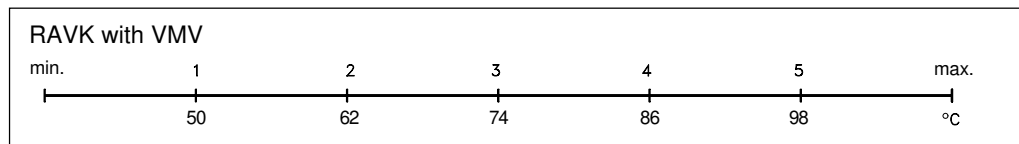
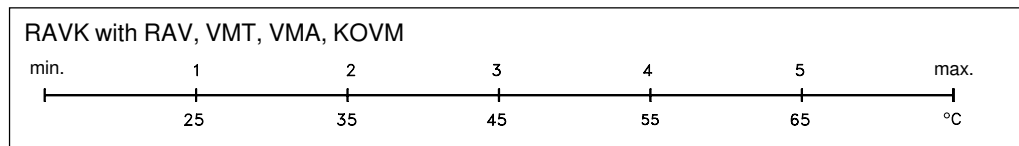
Mounting

The valve body must be fitted with flow in arrow direction. The thermostatic element can be fitted in any position.

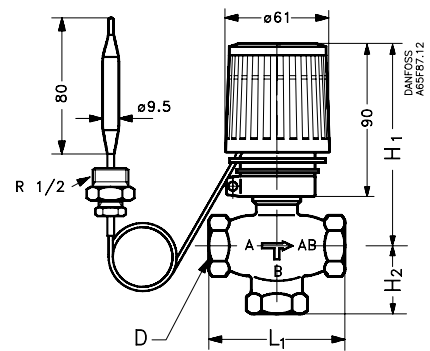
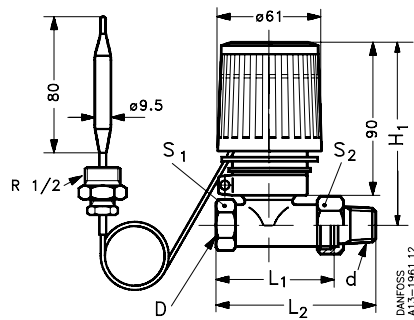
Setting

Relation between scale figures 1 - 5 and closing temperature.

Values given are approximate.



Dimensions

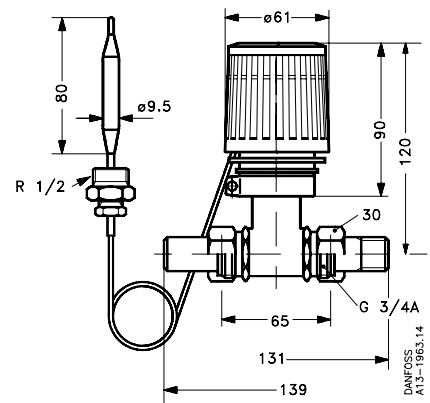
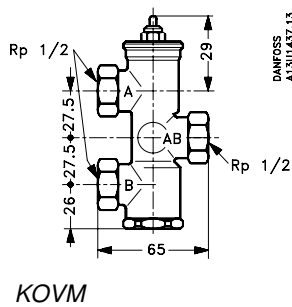
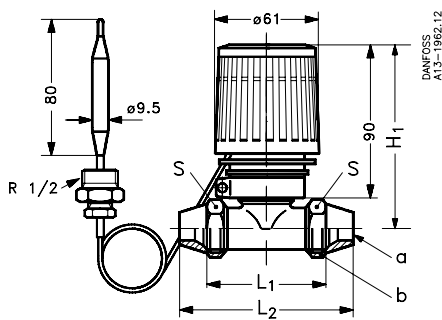


RAVK-RAV

DN	Type	D	d	L ₁	L ₂	H ₁	Widths across flats	
							S ₁	S ₂
10	RAVK-RAV 10/8	R _p 3/8	R 3/8	59	85	103	22	27
15	RAVK-RAV 15/8	R _p 1/2	R 1/2	66	95	103	27	30
20	RAVK-RAV 20/8	R _p 3/8	R 3/8	74	106	103	32	37
25	RAVK-RAV 25/8	R _p 1	R 1	90	125	116	41	46

RAVK-VMV

Type	L ₁	H ₁	H ₂	D ISO 7/1
VMV 15	70	100	35	R _p 1/2
VMV 20	80	100	40	R _p 3/4



RAVK-VMT

DN	Type	a	b, ISO 228/1	L ₁	L ₂	H ₁	S
15	RAVK-VMT 15/8	∅15 / ∅16 / ∅18	G 3/4 A	66	90	103	30
20	RAVK-VMT 20/8	∅18 / ∅22	G 1 A	74	101	103	37
25	RAVK-VMT 25/8	∅28	G 1 1/4 A	90	120	116	45

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