

Data Sheet

Valve Bodies Types RA-UN and RA-UR for Small Flow Volumes

Application



RA-UN / RA-UR angle



RA-UN / RA-UR straight



RA-UN / RA-UR horizontal angle

All RA-UN/UR valve bodies can be used together with all types of thermostatic elements in the RA 2000 series.

The valve bodies are fitted with a k_v limiting device for presetting of max. water flow.

RA-UN is for mounting in the flow and RA-UR in the return. An arrow on the valve body indicates the direction of flow.

The valve bodies RA-UN/RA-UR are used in two-pipe heating systems and is available with the following setting ranges for max. water flow:

RA-UN: $k_v = 0.02 - 0.48 \text{ m}^3/\text{h}$

RA-UR: $k_v = 0.02 - 0.47 \text{ m}^3/\text{h}$

The valve bodies are supplied with a protective cap and adjusting screw, which can be used for manual regulation during the construction phase.

The protective cap must not be used as a manual shut off device. A special manual shut off device (code no. 013G5000) should be used.

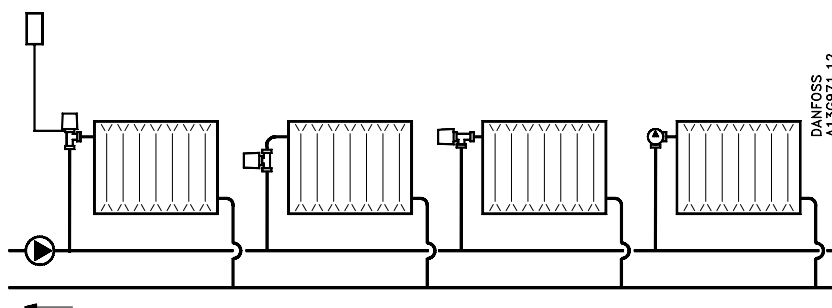
To be able to distinguish between other valve bodies of the RA 2000 series the protective cap is yellow.

Compression fittings for 15 mm, 10 mm or 8 mm copper tube are available for valve body RA-UN/UR with 3/8" and 1/2" BSP connections.

Valve bodies are manufactured from brass with nickel plating. The pressure pin of the gland seal is of chromium steel and works in a lifetime lubricated O-ring. The gland seal can be replaced without draining down the system.

Should water treatment be used it is essential that dosing instructions of the manufacturer are strictly observed. It is recommended that formulations containing mineral oil are avoided.

Principles



Data and Ordering

Type	Code no.	Design	Connection		With actuator	Max. pressure, bar										
			Inlet	Outlet	N(k _{vs})	Work	Diff. ²⁾	Test								
RA-UN 10 ¹⁾	013G3001	Angle	R _p 3/8	R 3/8	0.57	10	0.6	16								
	013G3002	Straight														
	013G3041	Horizontal angle														
RA-UN 15 ¹⁾	013G3003	Angle	R _p 1/2	R 1/2					0.57	10	0.6	16				
	013G3004	Straight														
	013G3043	Horizontal angle														
RA-UN 20	013G3005	Angle	R _p 3/4	R 3/4									0.57	10	0.6	16
	013G3006	Straight														
RA-UR 10	013G3299	Angle	R _p 3/8	R 3/8	00.53	10	1.0	16								
	013G3298	Straight														
	013G3297	Horizontal angle														
RA-UR 15	013G3229	Angle	R _p 1/2	R1/2					00.53	10	1.0	16				
	013G3228	Straight														

Type	Code no.	Presetting, k _v -values with RA 2000 sensor, m ³ /h ³⁾							
		1	2	3	4	5	6	7	N
RA-UN 10 ¹⁾	013G3001	0.02	0.06	0.11	0.17	0.23	0.30	0.35	0.48
	013G3002								
	013G3041								
RA-UN 15 ¹⁾	013G3003								
	013G3004								
	013G3043								
RA-UN 20	013G3005								
	013G3006								
RA-UR 10	013G3299	0.02	0.03	0.06	0.08	0.14	0.20	0.27	0.47
	013G3298								
	013G3297								
RA-UR 15	013G3229								
	013G3228								

¹⁾ The valve inlet is prepared for compression fittings.

²⁾ The maximum differential pressure specified is the maximum pressure at which the valves give satisfactory regulation. As with any device which imposes a pressure drop in the system, noise may occur under certain flow/pressure conditions. The differential pressure can be reduced by the use of the Danfoss differential pressure regulators.

³⁾ The k_v-value indicates the water flow (Q) in m³/h at a pressure drop (Δp) across the valve of 1 bar an.

$$k_v = \frac{Q}{\sqrt{\Delta p}}$$

The k_{vs}-value states the flow Q at maximum lift, i.e. at fully open valve at setting N.

Accessories

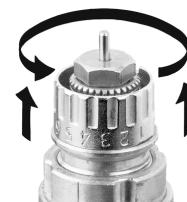
Product	Dimension	Code no.
Gland seal ¹⁾ (10 pcs.)		013G0290
Compression fittings for steel and copper tubes, incl. compression ring and nipple (10 pcs.)	R _p 3/8 x Ø 10	013G4100
	R _p 3/8 x Ø 12	013G4102
	R _p 1/2 x Ø 10	013G4110
	R _p 1/2 x Ø 12	013G4112
	R _p 1/2 x Ø 15	013G4115

¹⁾ The gland seal of the valve can be replaced under pressure, i.e. while the installation is in operation.

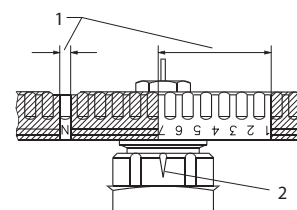
Presetting

The presetting values of the integrated valves can be adjusted easily and accurately without the use of tools (factory setting: 'N'):

- Remove the protective cap or the thermostatic sensor.
- Lift up the setting ring.
- Turn the setting ring until the desired presetting aligns with the reference mark.
- The reference mark will always point towards the radiator connection.
- Let go of the setting ring.



Presetting can be selected infinitely variably within the range of 1 to 7. At setting 'N' the valve is fully open. Setting in the shaded areas of the drawing should be avoided. When the radiator thermostat has been installed, the presetting is protected against unintended regulation.



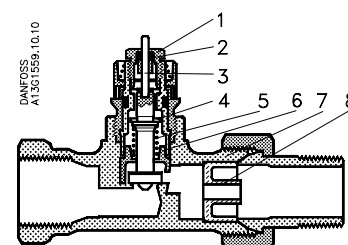
1. Presetting range
2. Reference mark

Design

The radiator thermostats consist of a thermostatic element of the RA 2000 series and a valve body. The element and the valve body are ordered separately.

Materials in contact with water

k_v -limiter	PPS
O-ring	EPDM
Valve cone	NBR
Pressure pin and valve spring	Chrome steel
Valve body and other metal parts	Ms 58
Valve body surface	Nickel-plated

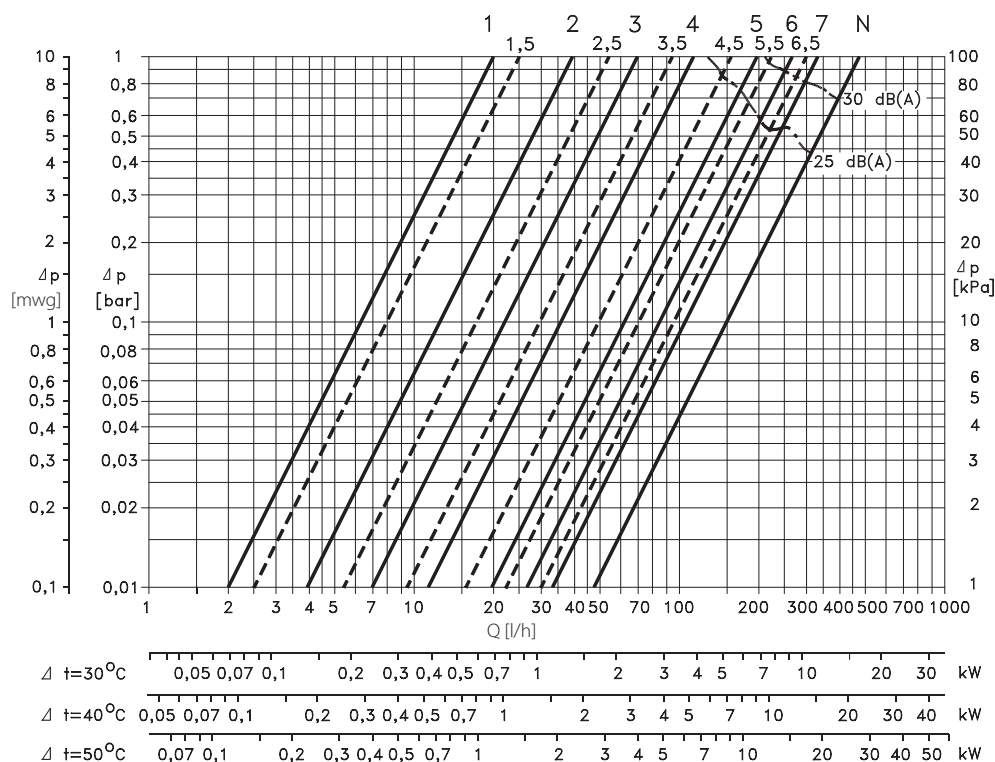


1. Gland seal
2. O-Ring
3. Pressure pin
4. Seal
5. Regulation spring
6. Setting dial
7. Valve body
8. k_v -nozzle

Capacities

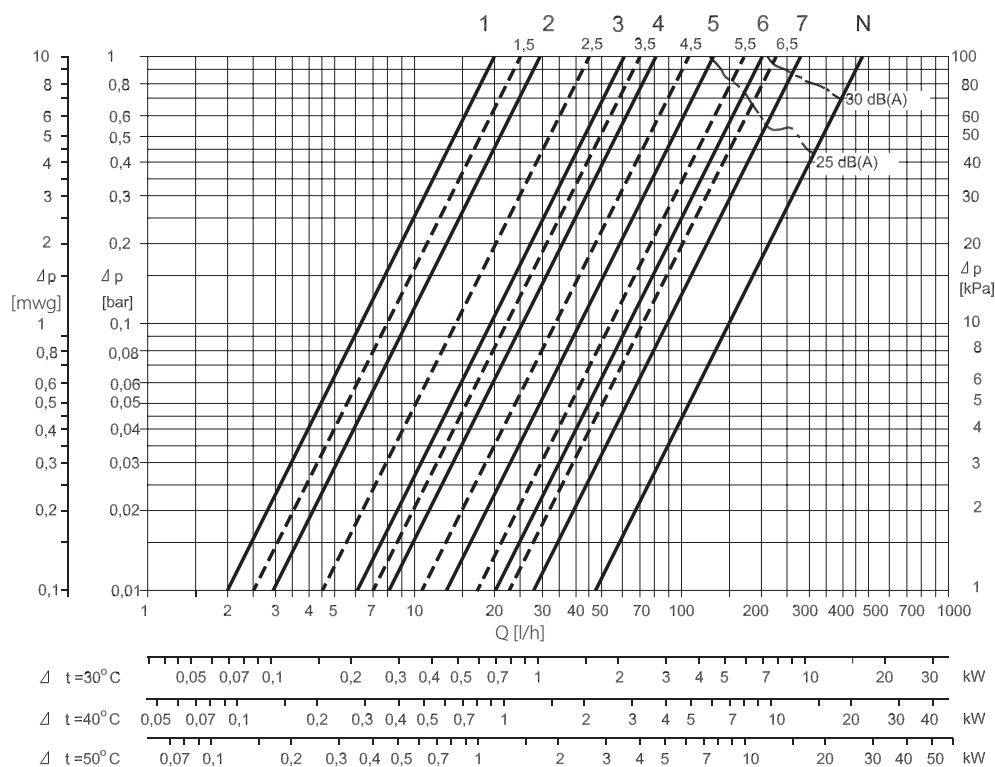
RA-UN presetting

Capacities with RA2000 sensor with a P-band between 0,5K and 2K

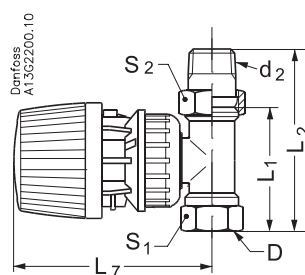


RA-UR presetting

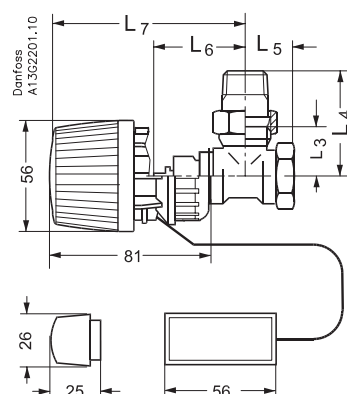
Capacities with RA2000 sensor with a P-band between 0,5K and 2K



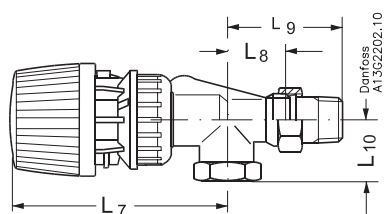
Dimensions



Straight valve body with thermostatic sensor RA 2990



Angle valve body with thermostatic sensor
RA2992



Horizontal angle valve body with thermostatic sensor RA 2990

Type	Connection			L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	Arc. flats	
	DN	D	d ₂											S ₁	S ₂
RA-UN 10	10	R _p 3/8	R 3/8	60	85	27	52	22	47	96				22	27
RA-UN 10 horiz. angle	10	R _p 3/8	R 3/8						59	108	26	51	22	22	27
RA-UN 15	15	R _p 1/2	R 1/2	67	95	30	58	26	47	96				27	30
RA-UN 15 horiz. angle	15	R _p 1/2	R 1/2						60	109	29	57	27	27	30
RA-UN 20	20	R _p 1	R 1	74	106	34	66	29	47	96				32	37
RA-UR 10	10	R _p 3/8	R 3/8	60	85	28	53	27	47	96				22	27
RA-UR 10 horiz. angle	10	R _p 3/8	R 3/8						47	96	28	53	27	22	27
RA-UR 15	15	R _p 1/2	R 1/2	67	95	28	53	27	47	96				22	27

Danfoss A/S
Heating Solutions
Haarupvaenget 11
8600 Silkeborg
Denmark
Phone: +45 7488 8000
Fax: +45 7488 8100
Email: heating.solutions@danfoss.com
www.heating.danfoss.com

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