

Presetting Valve Type RA-N with Flange Connection

Application



The RA-N valve, code no. **013G1843**, is specially designed for Russain convectors with 50 mm bottom connection.

The valve body is designed for two-pipe pumped systems in commercial or domsetic heating systems. RA-N has a built-in facility for setting max. flow through the convector. The setting options range from $k_v = 0.08 - 0.67$ m³/h. Kvs = 0.88 m³/h

The valve is deliveres assembled including mounted air ventilation screw and protective cap, red.

All Danfoss thermostatic sensors in the RA series can be combined with the RA-N valve.

In order to avoid deposition and corrosion, the composition of the hot water must be in accordance with the VDI 2035 guideline (Verein Deutscher Ingenieure).

System

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

- Find the reference mark
- Turn the setting ring until the desired presetting number aligns with the reference mark.

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Presetting can be selected 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 thermostatic sensor is fitted, the presetting is hidden and thus protected against unintended alteration.

Setting 'N' is used when flushing the system.

k -values¹⁾

Technical Data

values									
Setting	1	2	3	4	5	6	7	N	K _{vs} N
kv-value	0.08	0.12	0.18	0.25	0.32	0.42	0.53	0.67	0.88
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Code no.	Max. water	Differential p	Test pres-	Work. pres-	
	temp.	Rec.	Tech.	sure	sure
	°C	bar	bar	bar	bar
013G1843	120	0.05-0.2	0.6	25	16

- ¹⁾ The kv-value indicates the water flow (Q) in m3/h at a given lift and a pressure drop (Δp) across the valve at 1 bar. kv = Q / $\sqrt{\Delta p}$. At setting "N" the kv-value is stated according to EN 215, at Xp = 2 K. At lower presetting values Xp is reduced to setting 1, Xp = 0.5. At presettings between "1" and "N", Xp is between 0.5 and 2 K.
- ²⁾ Xp = 2 K means that the valve is closed at 2 °C higher room temperature. The kvs-value states the flow Q at a maximum lift, i.e. at fully open valve. The max. differential pressure specified is the maximum pressure at which the valve gives satisfactory regulation. As with any device which imposes a pressure drop on the system, noise may occur under certain flow/pressure conditions. A differential pressure between 0.1 and 0.3 bar across the valve is recommended. The differential pressure can be reduced using Danfoss differential pressure regulators.

Materials in contact with water :			
Valve body and other metal parts	Ms 58 brass		
Throttle nozzle and spindle	PPS		
O-ring	EPDM		
Valve cone	NBR		
Pressure pin in gland seal	Chrome steel		

Accessories

Design

Gland seal

Important

Should the valve body gland seal show signs of leaking, the gland can be replaced quickly without draining down the system.

Gland seals are delivered in boxes of 10 units complete with instructions. Code no.: 013L0669

After mounting the gland seal, press pin firmly to ensure proper contact to the valve spindle.



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Dimensions



Convector Integration



Sizing Example

Known values

Heat demand: $\Phi = 1500 \text{ kcal/h}$ System temperature drop: $\Delta t = 20 \text{ °C}$ Differential pressure: $\Delta p = 0.10 \text{ bar}$

Calculation

Water quantity Q ($\Phi/\Delta t$) = 1500/20 = 75 l/h

 $K_v = \frac{Q}{\sqrt{\Delta p}} = \frac{0.075}{\sqrt{0.1}} = 0.23 \text{ m}^3/\text{h}$

The setting is found in the capacity diagramme below: *Presetting 3.* If the sizing point found is between two settings, the highest setting is chosen. Alternatively, the settings can be found directly in the table technical data.

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Instructions

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Capacity Diagramme

(without radiator and tubing)





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