

Danfoss rotary valves and AMB actuators for central heating applications

Select the speed of your
control in a safe and silent way
to **improve your comfort**

Save

time on installation
due to visible
position indicator
and LED rotation
signalization.





HRB 3 & HRB 4 rotary valves

- Lowest leakage in class
- Unique adjustable position indication (also visible when actuator is mounted) for faster commissioning
- Easy installation
- For mixing and diverting applications
- Also cast iron versions called HRE 3 and HRE 4

HRB rotary valves can be used in combination with electric actuators AMB 162 and AMB 182.

HRB 3 rotary valve HRB 4 rotary valve

Nominal diameter	DN	15	20	25	32	40	50
Control characteristic		S characteristic					
Leakage	HRB 3	Diverting: max. 0.02% of flow / Mixing: max. 0.05% of flow					
	HRB 4						
Nominal pressure	PN	Max. 1.0% of k _{vs}					
Max. closing pressure	bar	10					
Torque at PN	Nm	Diverting: 2 / Mixing: 1					
		5					
Medium		Circulation water / glycolic water up to 50%					
Medium pH		Min. 7, Max. 10					
Medium temperature	°C	2 ... 110					
Connections		Internal thread ISO 7/1					
Materials							
Valve body and slide shoe		CuZn36Pb2As (Brass DZR, CW 602N)					
Stuffing box		CuZn36Pb2As (Brass DZR, CW 602N)					
Stuffing box sealing		EPDM					

Type	DN	k_{vs} (m³/h)	PN	Connection	Code number	
					HRB 3	HRB 4
HRB 3 HRB 4	15	0.4	10	Rp ½"	065Z0399	-
		0.63			065Z0400	
		1.0			065Z0401	
		1.63			065Z0402	
		2.5			065Z0403	065Z0411
		4.0			065Z0398	
	20	2.5		Rp ¾"	065Z0397	065Z0412 065Z0413
		4.0			065Z0404	
		6.3			065Z0405	
		6.3			065Z0406	
	25	10		Rp 1"	065Z0407	065Z0414
		16			065Z0408	
	32	16		Rp 1¼"	065Z0408	065Z0415
	40	25		Rp 1½"	065Z0409	065Z0416
	50	40		Rp 2"	065Z0410	065Z0417



HFE 3 rotary valve

- Cast iron body with flange connection
- Lowest leakage in class
- Valve position indicator
- For mixing and diverting applications

HFE rotary valves can be used in combination with electric actuators AMB 162 and AMB 182.

HFE 3 rotary valve

Nominal diameter	DN	20	25	32	40	50	65	80	100	125	150
k _{vs}	m³/h	12	18	28	44	60	90	150	225	280	400
Control characteristic		S characteristic									
Leakage	HFE 3	Diverting: max. 0.5% of k _{vs} / Mixing: max. 1.0 % of k _{vs}									
Nominal pressure	PN	6									
Max. closing pressure	bar	0.5									
Torque at PN	Nm	5						10			15
Medium		Circulation water / glycolic water up to 50%									
Medium pH		Min. 7, Max. 10									
Medium temperature	°C	2 ... 110									
Connections		Flanges PN6									
Materials											
Valve body and cover		Grey cast iron EN-GJL-250 (GG25)									
Slide shoe		CuZn36Pb2As (BrassDZR, CW 602N)									
Stuffing box sealing		EPDM									

Type	DN	k_{vs} (m³/h)	PN	Code number
				HFE 3
HFE 3	20	12	6	065Z0428
	25	18		065Z0429
	32	28		065Z0430
	40	44		065Z0431
	50	60		065Z0432
	65	90		065Z0433
	80	150		065Z0434
	100	225		065Z0435
	125	280		065Z0436
	150	400		065Z0437

Technical data				
Power supply		V	24 AC/DC or 230 AC	
Power consumption		VA	AMB 162: 2,5 AMB 182: 3,5	
Frequency		Hz	50/60	
Running speed	3-point	sec/90°	15/30/60/120/240/480	
	modulating		60/90/120*	
Control input			3-point modulating (0(2)-10 V)	
Operating torque		Nm	5, 10 or 15	
Rotation angle			90°	
Auxiliary switch			adjustable 0-90° (only 3-point actuators)	
Max. medium temperature		°C	110	
Ambient temperature			0 ... 50	
Storage and transport temperature			-10 ... 80	
Protection Class			II according to EN 60730-1	
Grade of enclosure			IP 42 according to EN 60529	
Wire lenght		m	2	
Weight		g	300	
Color / material			dark grey/PC	
CE marking in accordance with standards			Low Voltage Directive 2006/95/EC; EMC Directive 2004/108/EC; RoHS II: 2011/65/EU; Applied standards: EN 60730-1, EN 60730-2-14	

*selectable on DIP switch

Type	Torque (Nm)	Control signal	Speed (s/90°)	Supply voltage (V)	Remark	For RVA DN	Code No.
AMB 162	5	3-point	15	24	-	15-50	082H0210
			30		-		082H0211
			60		-		082H0212
			120		-		082H0213
			480		-		082H0214
			15		AS*		082H0215
			30				082H0216
			60				082H0217
			120				082H0218
			480				082H0219
			15	230	-		082H0220
			30		-		082H0221
			60		-		082H0222
			120		-		082H0223
			480		-		082H0224
			15		AS*		082H0225
			30				082H0226
			60				082H0227
			120				082H0228
		480	082H0229				
		Modulating	60/90/120	24	-		082H0230
AMB 182	10	3-point	60	24	-	15-100	082H0231
				230	-		082H0232
	15		60	24	-	15-150	082H0233
			240		-		082H0234
			60		AS*		082H0235
			240		082H0236		
			60	230	-		082H0237
			240		-		082H0238
			60		AS*		082H0239
			240				082H0240
		Modulating	60/90/120		24		-

* actuator with build in aux switch



Rotary actuators AMB 162 & 182

AMB 162 and AMB 182 actuators are used for temperature control in central heating systems together with 3-way and 4-way rotary valves of types HRB, HRE and HFE and other rotary valves on the market with combination of linkage kits.

Main data:

- Nominal Voltage: 230V, 50/60 Hz
24V, 50/60 Hz
- Control Input signal: modulating or 3-point
- Torque: 5/10/15 Nm
- Rotation angle: 90°
- Speed: 15/30/60/120/240/480 s/90°

New AMB actuators are faster, maintenance free and much more flexible than its predecessors, as they have selectable speed modes on a DIP switch. Tested for 250.000 cycles, AMB with metal gears truly insures maintenance free and best quality actuator on the market. Already very low noise emission of previous generation of AMB has been brought to even a lower level with new generation, so they are appropriate for every application in working or living quarters.

LED signalization is now available for turning direction as for Auxiliary switch activation.

In addition we have added a new linkage kit sets, so that actuator can be mounted to almost all rotary valves that you can find on the market.

All this is bringing quality and flexibility on higher level for our customers.

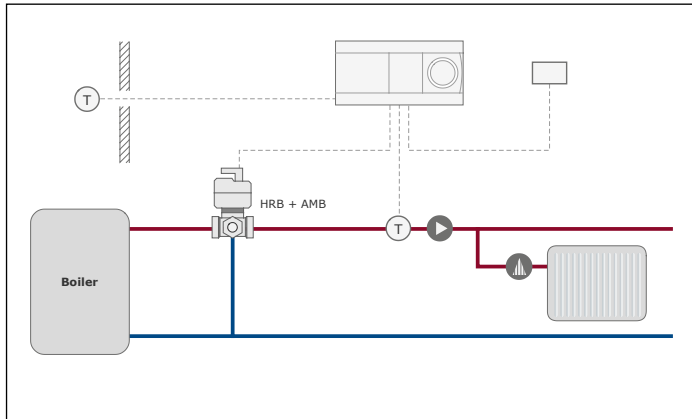
Applications

New Danfoss Rotary valves are normally used in heating systems.

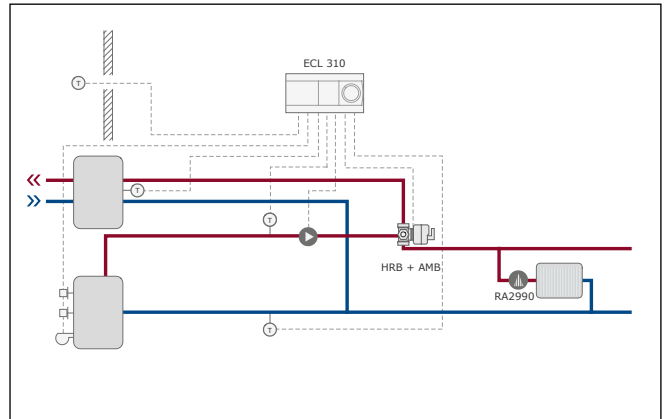
Typical heating systems include:

- Boiler applications
- Solar applications
- Heat pump applications
- Mixing and diverting applications
- Priority control applications

Typical boiler application



Typical priority control / diverting application



A new breed is born with Danfoss RVA rotary valves

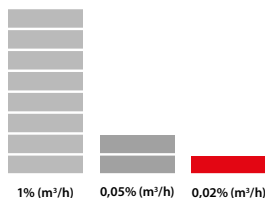
The new Danfoss rotary valves are primarily designed for regulation of flow and temperature in heating systems where a certain leakage can be accepted and where a defined control characteristic is not required.

100% bullet proof commissioning with visible valve position indicator

Danfoss has designed the unique position indicator for easier installation and simple commissioning. The valve position indicators are designed to be viewed from the top or from the side, with or without the actuator mounted. This saves time during installation and commissioning.

Lowest leakage in class

Due to new advanced valve design, Danfoss rotary valves have the lowest leakage in class. For zero leakage and premium controllability, Danfoss recommends iMCV™ – the new generation of intelligent motorized control valves. iMCV™ includes anti oscillation function, tool free installation, one actuator for DN 15 to 80 and bubble tight design (no leakage).



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