MAKING MODERN LIVING POSSIBLE

Aim for intelligent solutions
And hunt down your costs

Danfoss iMCV™ – Intelligent Motorised Control Valves for HVAC applications.

8-15%

energy savings

Enhanced anti-oscillation improves thermal comfort and saves energy by optimising the temperature setting for the building.

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3-5%

savings on pumping energy

Our iMCV™ field devices are designed and tested to be bubble tight, which contributes to energy efficiency in HVAC systems.

Hunt down your system costs

In a constantly evolving heating, ventilation and air conditioning (HVAC) market it is important to improve flow and temperature control performance in every system and add essential features that offer high value for every customer. Danfoss has invested substantial development resources, which together with decades of experience have led to our new generation of intelligent and patented motorised control valves: iMCV™.

The "i" stands for energy saving intelligence

Danfoss iMCVs feature unique built-in intelligence in the form of enhanced anti-hunting for improved thermal comfort and energy saving that increases system performance and optimises average temperature set-point of the building. It simplifies and stabilises the HVAC system and leads to 10-15% saving of energy consumption (within ±1K) in cooling and 8-10% in heating systems. With iMCV™, you can optimise conventional systems to deliver better performance and reduce operating costs.

The iMCV™ range includes control valves with pressure relieved design that ensure simplicity because a single actuator supports the entire range from DN 15 to DN 80. Our range of iMCV™ field devices are designed and tested as bubble tight, which contributes to energy efficiency in a HVAC system. This leads to 3-5% savings on pump energy consumption.

Compact design with low noise emissions

In keeping with our aim to set new standards, we have optimised actuator and valve operation by improving motor technology inside the actuator and improving the valve design.

Reduce costs with faster installation

Easy to use, easy to operate and easy to understand – these are distinctive properties of our iMCV™ product range. This gives HVAC system installation and configuration technicians significant potential for time savings.

Our new generation of actuators and valves is designed for quick, easy connection without special tools. This saves you time and installation costs. After installation, the self-stroking feature of the actuator automatically adjusts to the end positions of the valve. In operation the movement and valve position are clearly displayed by the position indicator or LED indicator light on the actuator.

The importance of eliminating hunting

Instability, oscillation or cycling in a control system is often called "hunting". It can be caused by to high gain in control loop, oversizing of the motorised control valve or variable ambient conditions and leads to excessive wear of the actuator and control valve as well fluctuations in temperature control and flow.

Anti-oscillation function

The built-in intelligence is a feature of Danfoss iMCVs that detects and tracks oscillations in a system and adjusts the actuator response to minimise hunting.

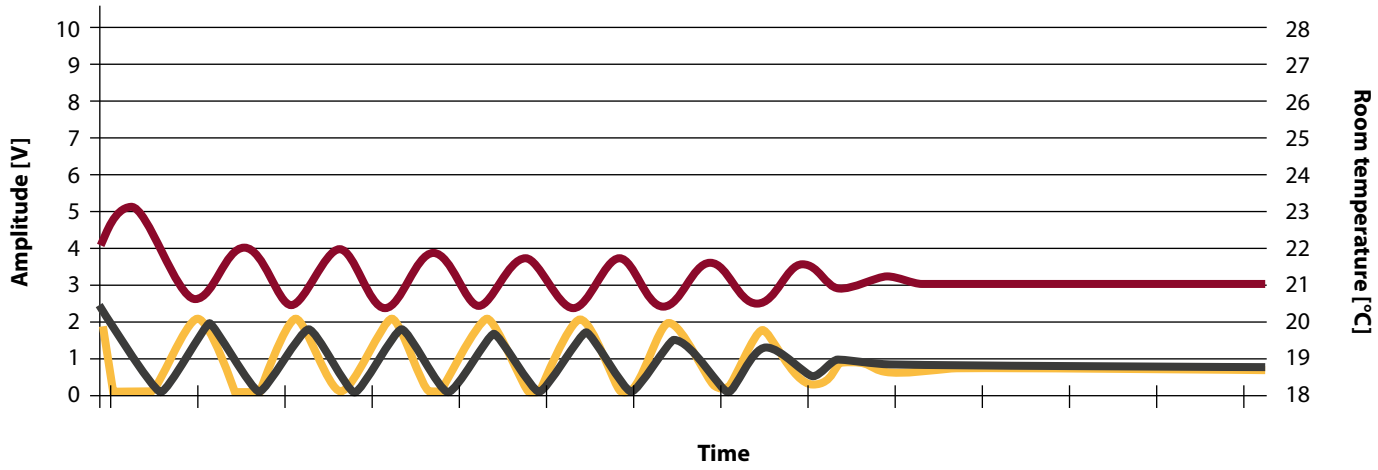
Get acquainted with Danfoss iMCVs

What makes Danfoss iMCV™ unique?

An intelligent built-in anti-oscillation function

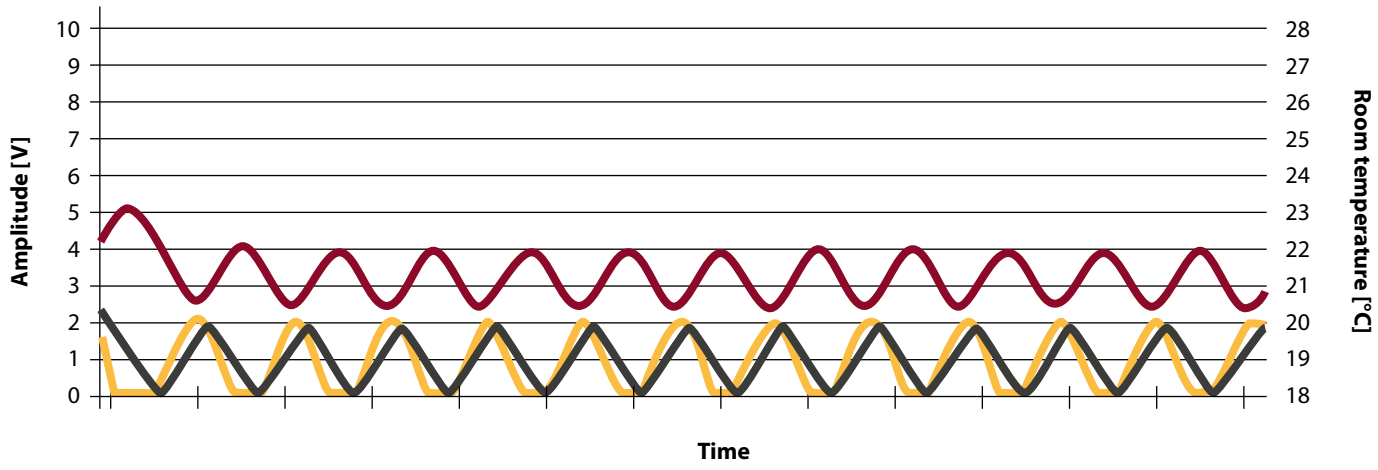
iMCV™

Oscillations in a HVAC application



Ordinary MCV

Oscillations in a HVAC application



Room temperature
Control signal
Control valve position

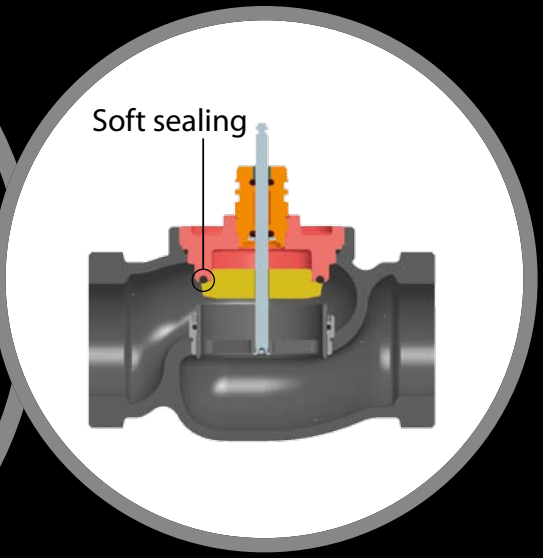
Danfoss has developed a new generation of intelligent motorized control valves (iMCV™) with a patented, built-in anti-oscillation feature.

Advanced algorithms are installed in the actuator, which continuously detects, tracks and prevents the undesired oscillation in the control loop. **This reduces time consumption and costs for (re)tuning of a control loop and (re)visiting of the customers installation.**

100%

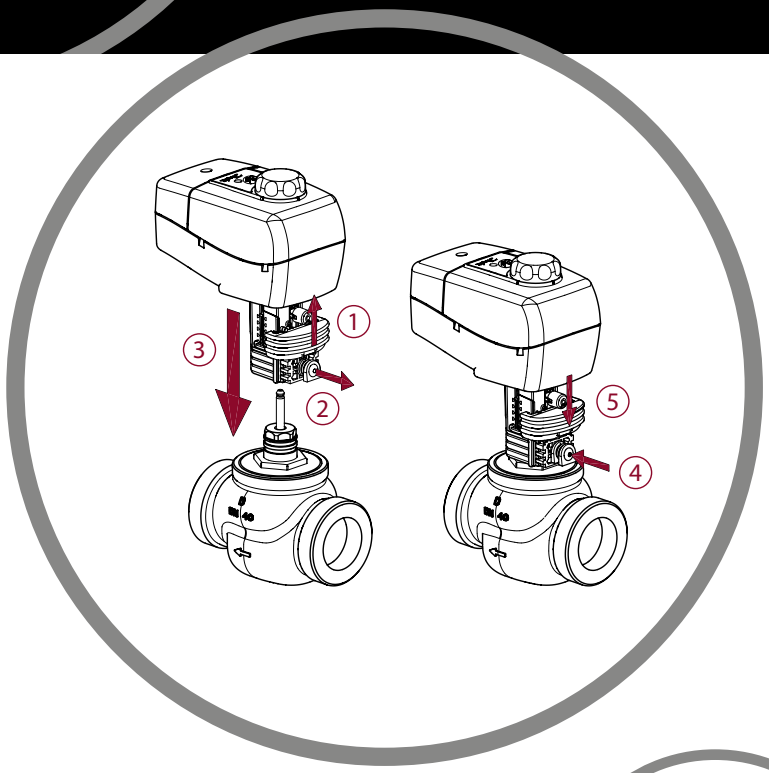
tight

The new iMCV™ is 100% tight due to a soft sealing construction. It leads to 3-5% energy savings on pump energy consumption.



Installation in 3 seconds

Connection of the new generation of actuators and valves can be done instantaneously – without any tools. Simple commissioning and installation hunts down your costs!



We call it simplicity

One electrical actuator fits to the whole range of iMCV™ control valves from DN15 to DN80. It reduces costs for stock-keeping and simplifies the replacement and selection process.

Valve type	VRG & VRB						VL								VF							
DN [mm]	15	20	25	32	40	50	15	20	25	32	40	50	65	80	15	20	25	32	40	50	65	80

Control valves

iMCV™ Valves		VRB 2	VRB 3	VRG 2	VRG 3	VL 2	VL 3	VF 2	VF 3
									
Ordering data / Technical spec.		**Page 18-19**		**Page 20**		**Page 21**		**Page 22**	
Valve type		Seated valve		Seated valve		Seated valve		Seated valve	
Material		Red Bronze		Grey cast iron		Grey cast iron		Grey cast iron (DN 15-100) Ductile iron (DN 125-150)	
Connection		Internal or external thread		External thread		Flange		Flange	
Nominal pressure	PN	PN 16		PN 16		PN 6		PN 16	
Max. closing pressure	bar	4		4		1 / 2.5 / 4[1)]		1.5 / 2.5 / 3 / 4[1)]	
Ports		2	3	2	3	2	3	2	3
Medium temperature		(-10)[2)] 2...130		(-10)[2)] 2...130		(-10)[2)] 2...120		(-10)[2)] 2...130 (200)[1)]	
DN		15 … 50		15 … 50		15 … 100		15 … 150	
k_{VS}	m^3/h	0.63 … 40		0.63 … 40		0.63 … 145		0.63 … 320	
Control characteristic		Logarithmic	Log: port A-AB; Lin: port B-AB	Logarithmic	Log: port A-AB; Lin: port B-AB	Logarithmic	Log: port A-AB; Lin: port B-AB	Logarithmic	Log: port A-AB; Lin: port B-AB
Control range		30:1 / 50:1 / 100:1[1)]		30:1 / 50:1 / 100:1[1)]		30:1 / 50:1 / 100:1[1)]		30:1 / 50:1 / 100:1[1)]	
Leakage		Bubble tight	A - AB ≤ bubble tight B - AB ≤ 1% of k_{VS}	Bubble tight	A - AB ≤ bubble tight B - AB ≤ 1% of k_{VS}	Bubble tight	A - AB ≤ bubble tight B - AB ≤ 1% of k_{VS}	Bubble tight	A - AB ≤ bubble tight B - AB ≤ 1% of k_{VS}
Stroke	mm	10 / 15[1)]		10 /15[1)]		10 / 15 / 20 / 30[1)]		10 / 15 / 20 / 30 / 40[1)]	
Sealing type		Soft sealing		Soft sealing		Soft sealing / metal sealing[1)]		Soft sealing / metal sealing[1)]	

[1)] Values are depending on size or different k_{VS} type. Please see control valves section for detailed information.
[2)] With stem heater

Fan Coil Valves		VZL 2	VZL 3	VZL 4	VZ 2	VZ 3	VZ 4
							
Ordering data / Technical spec.		**Page 23**			**Page 24**		
Valve type		Seated valve			Seated valve		
Material		Brass			Dezincification resistant brass		
Connection		External thread			External thread		
Nominal pressure	PN	PN 16			PN 16		
Max. closing pressure	bar	1 / 2 / 2.5[1)]			2.5 / 3,5[1)]		
Ports		2	3	4	2	3	4
Medium temperature		2 … 120			2 … 120		
DN		15 … 20			15 … 20		
k_{VS}	m^3/h	0.25 … 3.5			0.25 … 4.0		
Control characteristic		Linear			Logarithmic		
Control range		≥ 30:1			≥ 50:1		
Leakage		A - AB ≤ 0.05% of k_{VS} B - AB ≤ 1% of k_{VS}			A - AB ≤ 0.05% of k_{VS} B - AB ≤ 1% of k_{VS}		
Stroke	mm	2.8			5.5		
Sealing type		metal sealing			metal sealing		

[1)] Values are depending on size or different k_{VS} type. Please see control valves section for detailed information.

Zone and rotary valves

		AMZ 112	AMZ 113	HRB 3	HRB 4	HRE 3	HRE 4	HFE 3
								
Ordering data / Technical spec.		**Page 25**		**Page 26**		**Page 27**		**Page 28**
Valve type		Ball valve - on/off zone valve incl. actuator		Rotary valve		Rotary valve		Rotary valve
Material		Nickel-plated brass		Dezincification resistant brass		Grey cast iron		Grey cast iron
Connection		Internal thread		Internal thread (ISO 7/1)		Internal thread (ISO 7/1)		Flange
Nominal pressure	PN	PN 16		PN 10		PN 6		PN 6
Max. closing pressure	bar	6		Diverting: 2 bar Mixing: 1 bar		1 bar		0.5 bar
Ports		2	3	3	4	3	4	3
Medium temperature		2 … 130		2 … 110		2 … 110		2 … 110
DN		15 … 32		15 … 50		20 … 50		20 … 150
k_{VS}	m^3/h			0.4 … 40		6.3 … 40		12 … 400
Max. torque	Nm	8		5		5		5 / 10 / 15[1)]
Leakage		Leakage class A		0.05% k_{VS}	1% k_{VS}	0.05% of k_{VS}	1% k_{VS}	0.05% k_{VS}

[1)] Values are depending on size or different k_{VS} type. Please see control valves section for detailed information.

Electrical actuators

		AME 435	AMV 435	AME 438 SU	AMV 438 SU	AME 35	AMV 35	AME 55	AME 56	AMV 55	AMV 56	AME 85	AME 86	AMV 85	AMV 86
															
Ordering data / Technical spec.		**Page 30-31**		**Page 32-33**		**Page 34-35**		**Page 36-37**				**Page 38-39**			
Actuator type		Electric		Electric		Electric		Electric				Electric			
Control input		modulating	3-point	modulating	3-point	modulating	3-point	modulating		3-point		modulating		3-point	
Closing force	N	400		450	450	600	600	2000	1500	2000	1500	5000	5000	5000	5000
Speed	mm/s	7.5 or 15		15	15	3	3	8	4	8	4	8	3	8	3
Max stroke	mm	20		15	15	15	15	40				40			
Power supply	V	24	24 or 230	24	24 or 230	24	24 or 230	24		24 or 230		24		24 or 230	
Safety function		-		spring up	spring up	-		-				-			
Grade of enclosure		IP 54		IP 54		IP 54		IP 54				IP 54			
Special functions															
	Self-stroking	■		■		■	■	■	■			■	■		
	Anti oscilation function	■													
	LED indicator	■		■		■		■	■			■	■		
	Manual operation	■	■			■	■	■	■	■	■	■	■	■	■
	Tool-free mounting	■	■												
	Characteristic selection switch	■		■		■		■	■			■	■		
		iMCV™													

		AME 130	AME 130H	AMV 130	AMV 130H	AME 140	AME 140H	AMV 140	AMV 140H	AME 13 SU	AMV 13 SU	TWA - ZL
												
Ordering data / Technical spec.		**Page 40-41**				**Page 40-41**				**Page 42-43**		**Page 44**
Actuator type		Electric				Electric				Electric		Thermal
Control input		modulating		3-point		modulating		3-point		modulating	3-point	2-point (on/off)
Closing force	N	200				200				300		90
Speed	mm/s	24				12				14		Full stroke time approx. 3 min
Max stroke	mm	5.5				5.5				5		2.8
Power supply	V	24		24 or 230		24		24 or 230		24	24 or 230	24 or 230
Safety function		-				-				spring up		-
Grade of enclosure		IP 42				IP 42				IP 54		IP 41
Special functions												-
	Self-stroking	■	■			■	■			■		-
	Anti oscilation function											-
	LED indicator											-
	Manual operation		■		■		■		■	■	■	-
	Tool-free mounting	■	■	■	■	■	■	■	■			-
	Characteristic selection switch	■	■	■	■	■	■	■	■			-

Special functions of Danfoss iMCV™ electrical actuators

Self-stroking

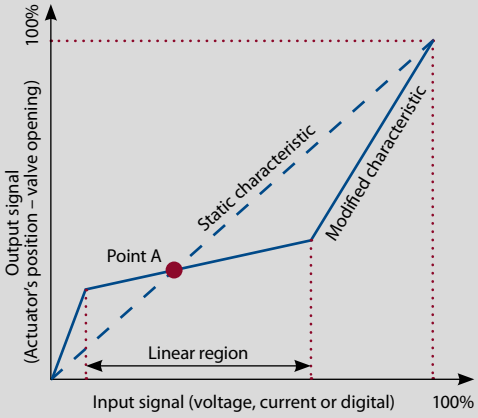
The electrical actuator automatically adjusts to end positions of the control valve. The self-stroking procedure starts by extracting the actuator stem. When the maximum force is detected at the end valve position, the actuator retracts the stem until the maximum force is detected again (on the other end position of the control valve).

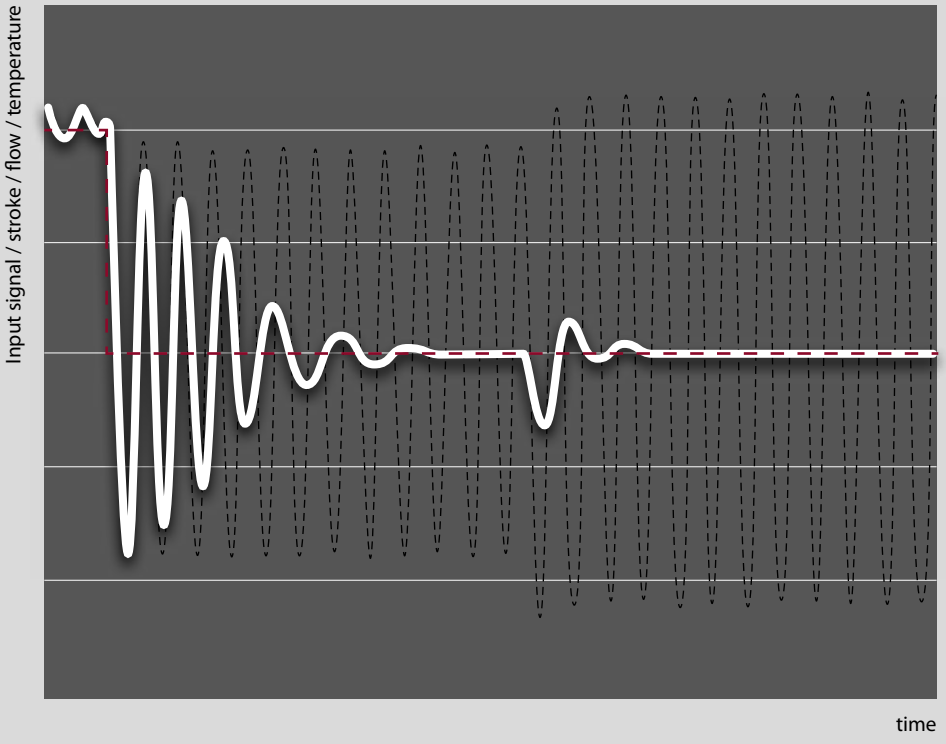
LED indicator

The LED indicator helps the user recognise the operating mode or function of the actuator at all times. Different colours or blinking signals are used to indicate different modes.

Anti-oscillation function

This function tracks oscillations in systems that are oversized or poorly controlled. It adjusts the actuator response to minimise hunting. This reduces temperature variations and improves comfort for HVAC system users.





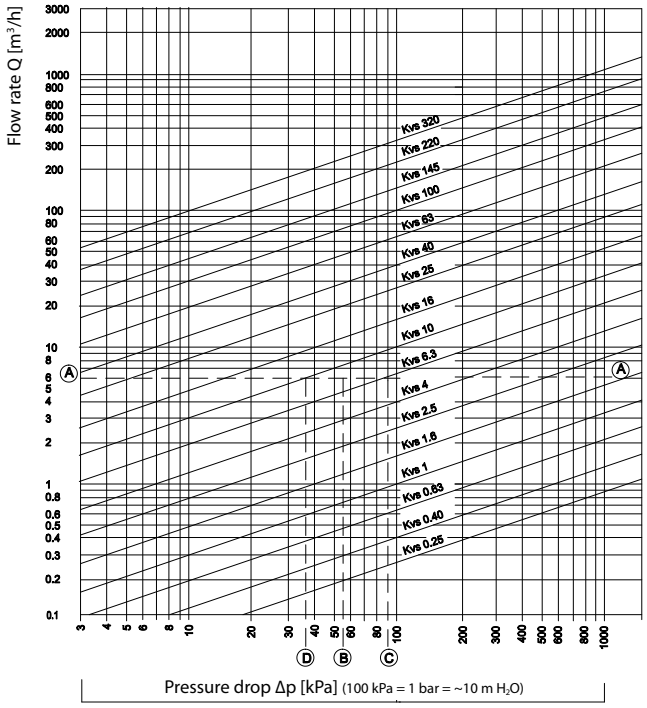
Selection chart

		Actuator type		AMV(E) 435	AMV(E) 438 SU	AMV(E) 35	AMV(E) 55	AMV(E) 56	AMV(E) 85	AMV(E) 86
						+ adapter				
Valve type	DN	k_{VS} [m³/h]	stroke [mm]	Δp clos. [bar]	Δp clos. [bar]	Δp clos. [bar]	Δp clos. [bar]	Δp clos. [bar]	Δp clos. [bar]	Δp clos. [bar]
VRG & VRB 2/3	15	0.63; 1; 1.6; 2.5; 4	10	4	4	4				
	20	6.3								
	25	10								
	32	16								
	40	25								
	50	40								
VL 2/3	15	0.63; 1; 1.6; 2.5; 4	15	4	4	4				
	20	6.3								
	25	10								
	32	16								
	40	25								
	50	40								
	65	63		2.5						
	80	80								
	100	145	30				1.5	1		
VF 2/3/4	15	0.63; 1; 1.6; 2.5; 4	10	4	4	4				
	20	6.3								
	25	10								
	32	16	15							
	40	25								
	50	40								
	65	63	20	2.5						
	80	80								
	100	145	30				1.5	1		
	125	220	40				1	0.5	3	3
	150	320					0.5	0.2	1.5	1.5

		Actuator type		TWA - ZL	AMV(E) 130(H)	AMV(E) 140(H)	AMV(E) 13 SU
Valve type	DN	k_{VS} [m³/h]	stroke [mm]	Δp clos. [bar]	Δp clos. [bar]	Δp clos. [bar]	Δp clos. [bar]
VZL 2/3/4	15	0.25; 0.4; 0.63	2.8	2.5	2.5	2.5	2.5
		1.0; 1.6		2	2	2	2
	20	2.5; 3.5		1	1	1	1
VZ 2/3/4	15	0.25; 0.4; 0.63; 1.0; 1.6; 2.5	5.5		3.5	3.5	3.5
	20	2.5; 4.0			2.5	2.5	2.5

	Possible combination
	Invalid combination

Valve sizing



Example – Design data:
Flow rate: 6 m^3/h
System pressure drop: 55 kPa

Locate the horizontal line representing a flow rate of 6 m^3/h (line A-A). The valve authority is given by the equation:

Valve authority, $a = \frac{\Delta p1}{\Delta p1 + \Delta p2}$

Where:
Δp1 = pressure drop across the fully open valve
Δp2 = pressure drop across the rest of the circuit with a full open valve

The ideal valve would give a pressure drop equal to the system pressure drop (i.e. an authority of 0.5):

if: $\Delta p1 = \Delta p2$

$$a = \frac{\Delta p1}{2 \cdot \Delta p1}$$

In this example an authority of 0.5 would be given by a valve having a pressure drop of 55 kPa at the specified flow rate. (point B). The intersection of line A–A with a vertical line drawn from B lies between two diagonal lines; this means that no ideally-sized valve is available.

The intersection of line A–A with the diagonal lines gives the pressure drops produced by real (rather than ideal) valves. In this case, a valve with k_{VS} 6.3 would give a pressure drop of 90.7 kPa (point C):

$$\text{hence valve authority} = \frac{90.7}{90.7 + 55} = 0.62$$

The second largest valve, with k_{VS} 10, would give a pressure drop of 36 kPa (point D):

$$\text{hence valve authority} = \frac{36}{36 + 55} = 0.395$$

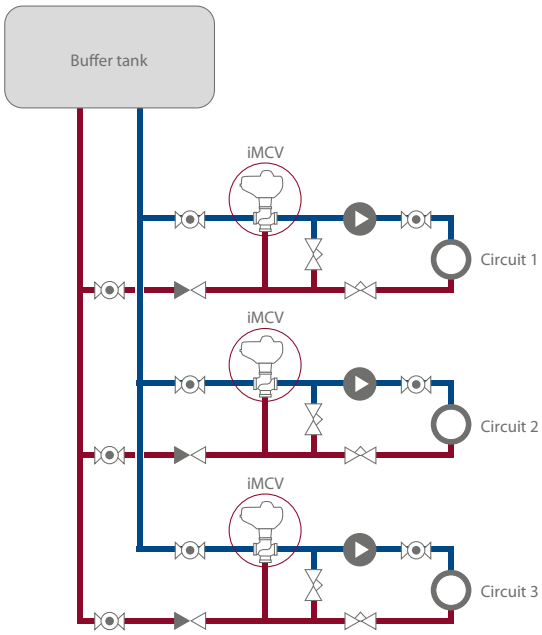
With a three-port application, the usual practice is to select the smaller valve because this yields a valve authority greater than 0.5, and therefore better control. However, this will increase the total pressure and should be checked by the system designer for compatibility with available pump heads, etc. The ideal authority is 0.5, with a preferred range of 0.4 to 0.7.

Applications – Heating, cooling and ventillation

1 Passive cooling system: a system without primary pump. Oscillation of the control valve may occur due to oversizing, high resistance on the primary size, or interaction with secondary systems. The iMCV™ will detect and minimise oscillation, thereby increasing overall system efficiency and reliability.

2 Air handling unit with fresh air. Control system oscillation may occur due to poor PID tuning, variable ambient conditions, etc.
The iMCV™ will detect and minimise oscillation. This will contribute to more accurate temperature control, better thermal comfort and energy saving.

1



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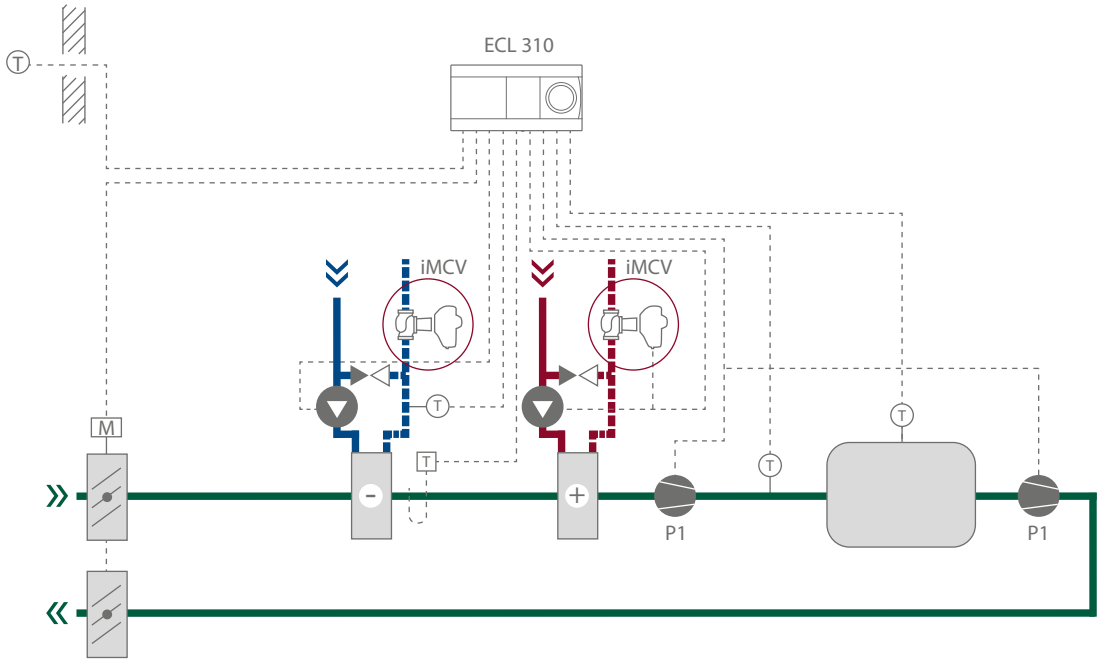
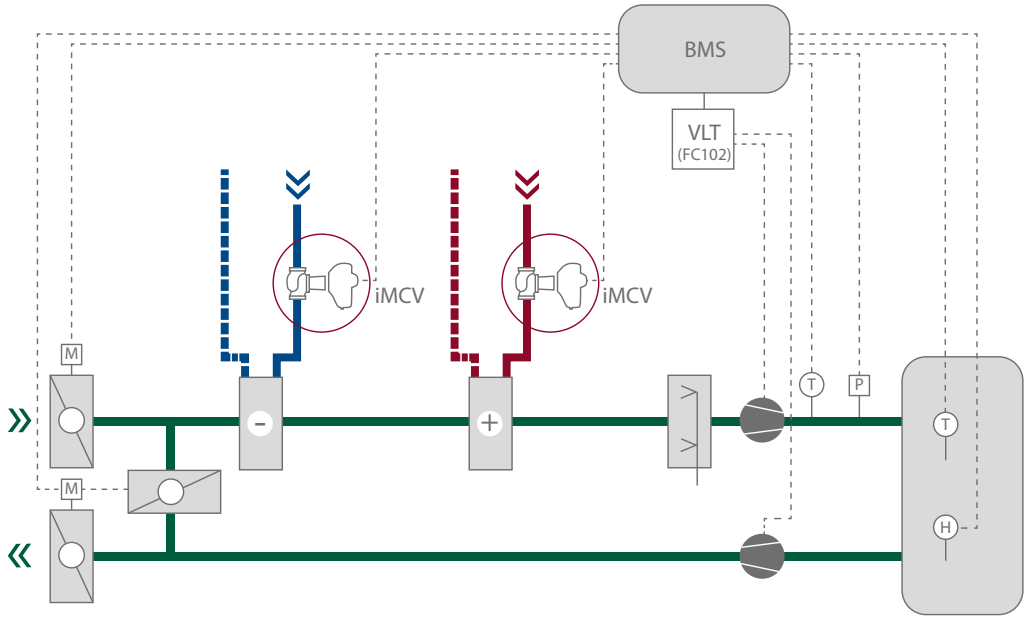


Applications – Heating, cooling and ventillation

3 Air handling unit application with variable-speed fans. HVAC VLT drive (FC102) could be used as a controller via analogue outputs for chilled and hot water control valves (iMCV). No need for an external controller.

4 Typical hydronic system arrangement that must cope with high supply water temperature (to prevent condensation), large temperature range and small chilled water volume. This arrangement allows the chiller to operate under optimal conditions while meeting the requirements of the process. The storage tank provides the necessary buffer to limit the rate of change. This system is implemented using VF3 control valves.

3



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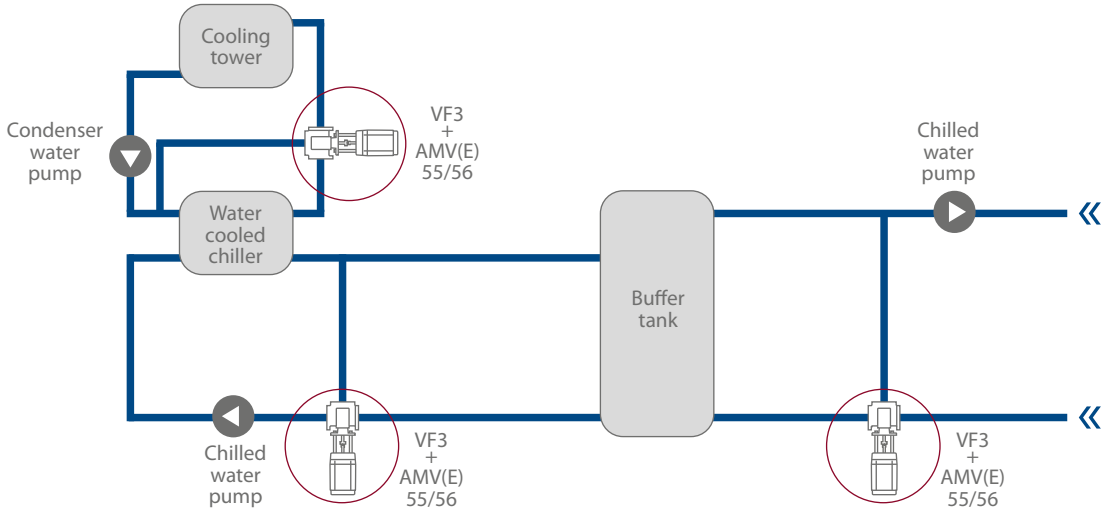
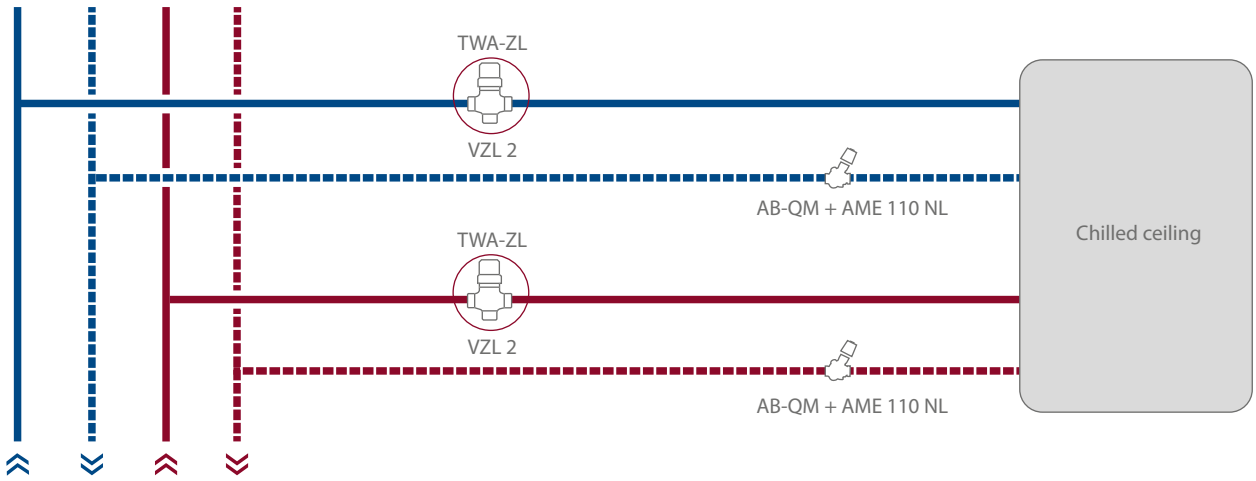


Applications – Heating, cooling and ventillation

5 Four pipe chilled/heating ceiling application with modulating pressure independent balancing and control valves (AB-QM) and changeover valves (VZL) for highest thermal comfort level.

6 Variable flow system with dynamic riser balancing and terminal control valves for on/off control.

5



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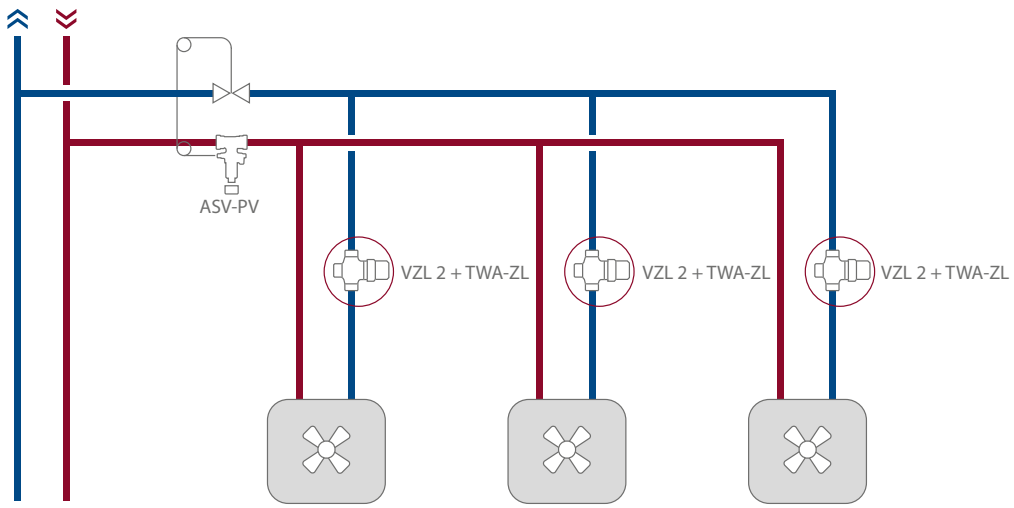
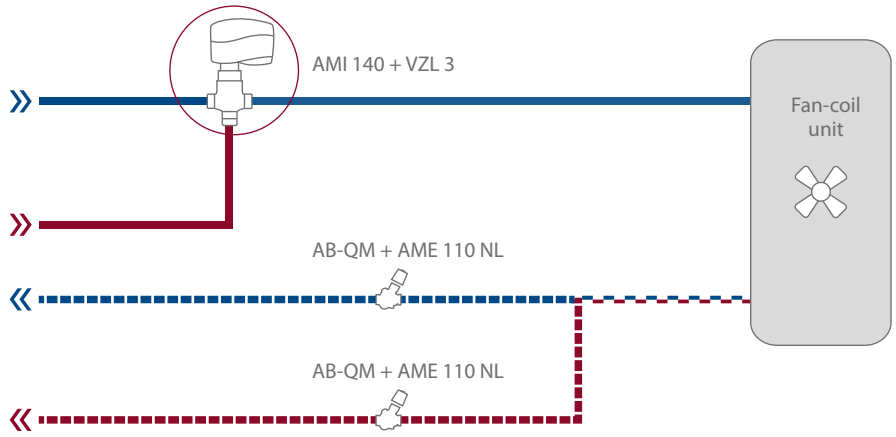


Applications – Heating, cooling and ventillation

7 Fan Coil application: 2 pipe reversible with pressure independent balancing and control valve (AB-QM) and priority control valve for cooling and heating (VZL).

8 Heat pump application with integrated hot water tank, external heater and Danfoss Rotary valve (HRB) for mixing of the controlled temperature (T) for hot watter suply or central heating.

7



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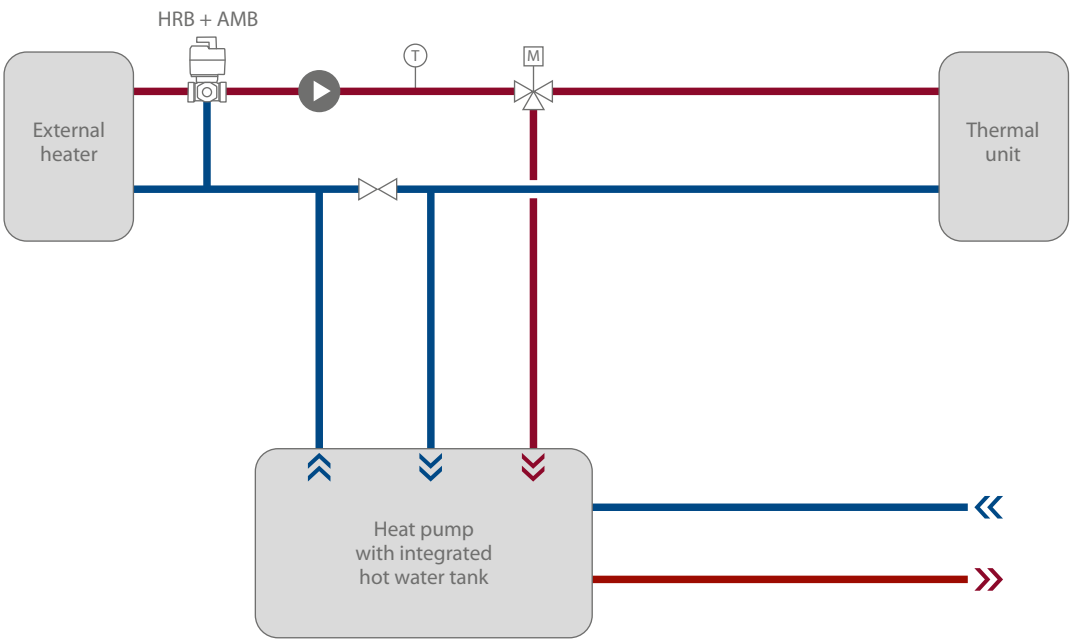
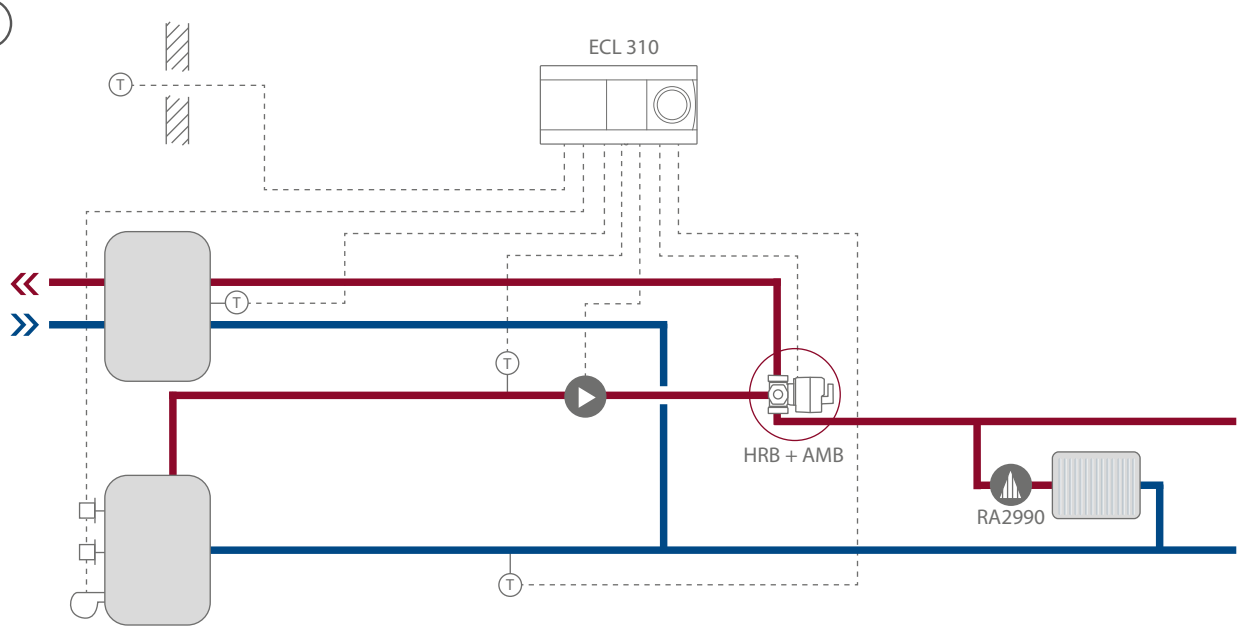


Applications – Heating

9 Priority control of hot water supply and heating – diverting function of Danfoss rotary valve HRB.

10 Solar application with Danfoss rotary valve HRB – Diverting: First the small boiler is heated, then the energy is redirected to the accumulation boiler.

9



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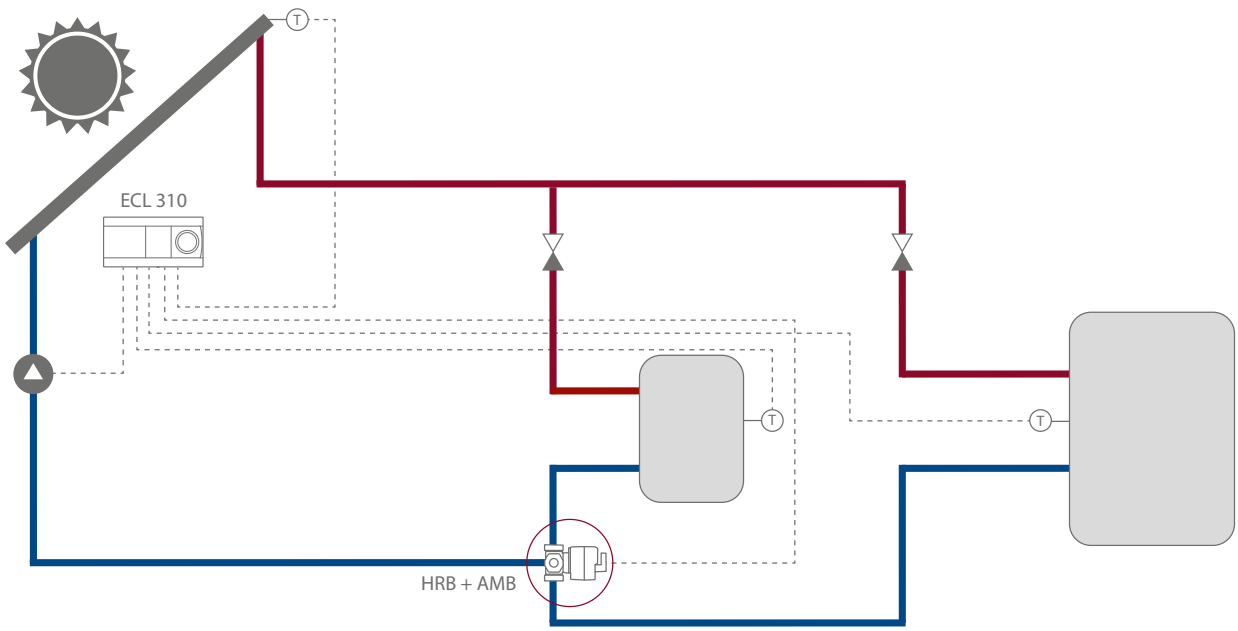
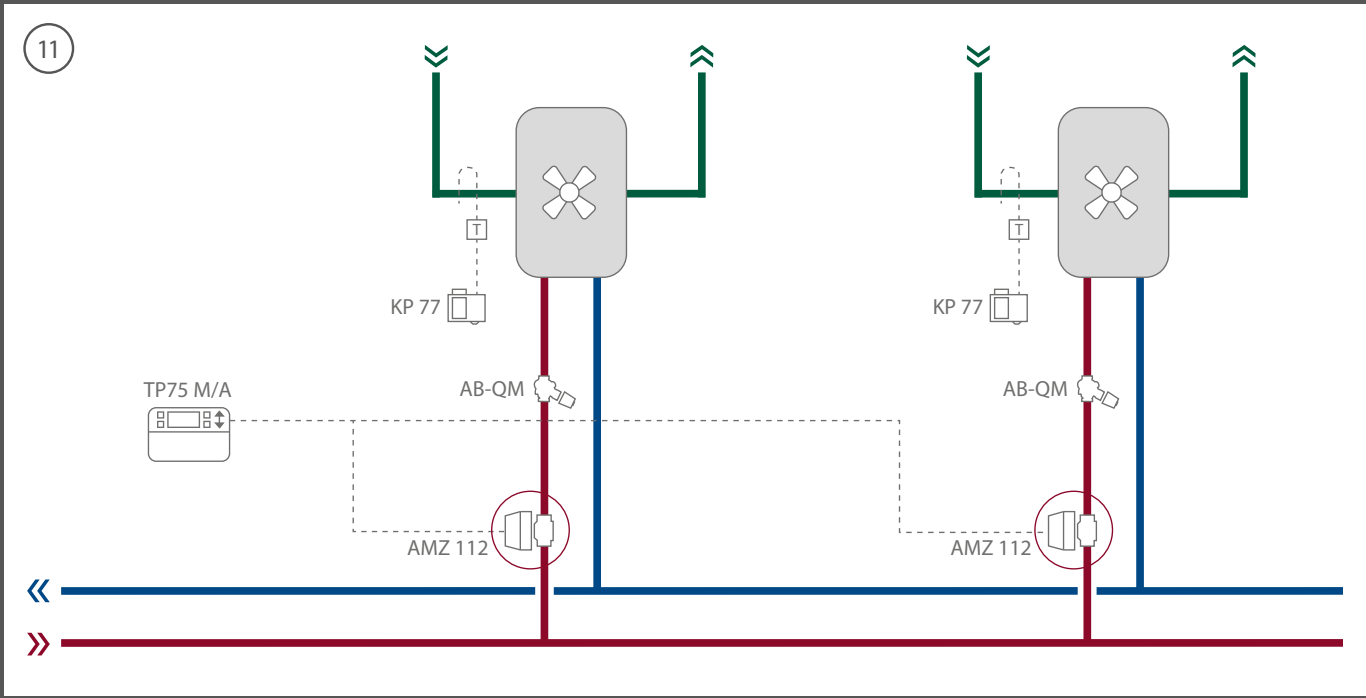


Applications – Heating

(11) On/off zone control of air heaters with flow limitation.



Seated valves VRB 2

Description

VRB valves provide a quality, cost effective solution for most water and chilled applications.
The valves are designed to be combined with AMV(E) 435 or AMV(E) 438 SU actuators.

Applications

Heating systems and HVAC applications (water side).

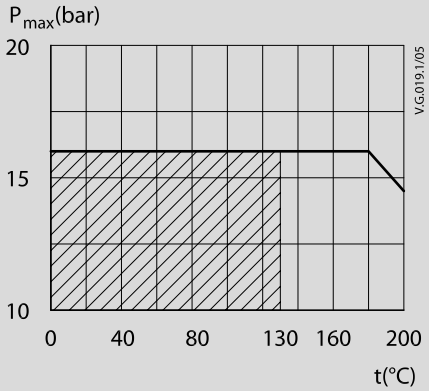
Features

» Snap mechanical connection together with AMV(E) 435
» Soft sealing
» Logarithmic characteristic
» Control range up to 100:1
» Internal or external thread connection
» Dedicated 2-port valve


VRB 2 internal thread


VRB 2 external thread

2-way seated valves with internal or external thread DN 15-50



Ordering

Valves

DN	k_{vs} (m^3/h)	Code number	
		Internal thread	External thread
15	0.63	**065Z0231**	**065Z0171**
	1	**065Z0232**	**065Z0172**
	1.6	**065Z0233**	**065Z0173**
	2.5	**065Z0234**	**065Z0174**
	4	**065Z0235**	**065Z0175**
20	6.3	**065Z0236**	**065Z0176**
25	10	**065Z0237**	**065Z0177**
32	16	**065Z0238**	**065Z0178**
40	25	**065Z0239**	**065Z0179**
50	40	**065Z0240**	**065Z0180**

Tailpieces

Type		DN	Code number
Tailpiece*	Rp ½	15	**065Z0291**
	Rp ¾	20	**065Z0292**
	Rp 1	25	**065Z0293**
	Rp 1 ¼	32	**065Z0294**
	Rp 1 ½	40	**065Z0295**
	Rp 2	50	**065Z0296**

** One tailpiece (CuZn39Pb3) with internal thread for VRB external thread*

Technical data

Nominal diameter	DN	15					20	25	32	40	50
k_{vs} value	m^3/h	0.63	1.0	1.6	2.5	4.0	6.3	10	16	25	40
Stroke	mm	10							15		
Control range		30:1	50:1				100:1				
Control characteristic		Logaritmic									
Cavitation factor z		≥ 0.4									
Leakage		Bubble tight									
Nominal pressure	PN	16									
Max. closing pressure	bar	4									
Medium		Circulation water / glycolic water up to 50%									
Medium pH		Min. 7, Max. 10									
Medium temperature	°C	2 (–10[1]) … 130									
Connections		Internal or external thread									
Materials											
Valve body		Red bronze (Rg5)									
Valve stem		Stainless steel									
Valve cone		Dezincification resistant brass									
Stuffing box sealing		EPDM									

[1] *At temperatures from –10 up to +2 °C use stem heater*

Additional info

» Sizing diagram for valves can be found on page 9
» Differential pressures for specific actuator combination can be found on page 8
» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LS.E

Seated valves VRB 3

Description

VRB valves provide a quality, cost effective solution for most water and chilled applications.
The valves are designed to be combined with AMV(E) 435 or AMV(E) 438 SU actuators.

Applications

Heating systems and HVAC applications (water side).

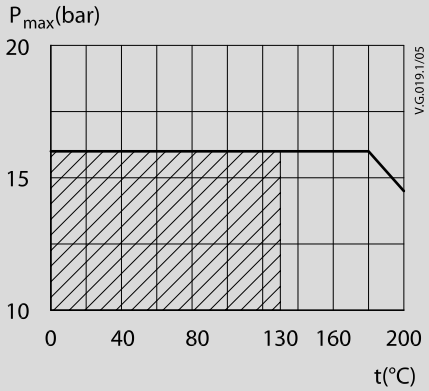
Features

» Snap mechanical connection together with AMV(E) 435
» Soft sealing
» Logarithmic characteristic A-AB and linear characteristic B-AB
» Control range up to 100:1
» Internal or external thread connection
» Suitable for diverting applications


VRB 3 internal thread


VRB 3 external thread

3-way seated valves with internal or external thread DN 15-50



Ordering

Valves

DN	k_{VS} (m^3/h)	Code number	
		Internal thread	External thread
15	0.63	**065Z0211**	**065Z0151**
	1	**065Z0212**	**065Z0152**
	1.6	**065Z0213**	**065Z0153**
	2.5	**065Z0214**	**065Z0154**
	4	**065Z0215**	**065Z0155**
20	6.3	**065Z0216**	**065Z0156**
25	10	**065Z0217**	**065Z0157**
32	16	**065Z0218**	**065Z0158**
40	25	**065Z0219**	**065Z0159**
50	40	**065Z0220**	**065Z0160**

Tailpieces

Type		DN	Code number
Tailpiece*	Rp ½	15	**065Z0291**
	Rp ¾	20	**065Z0292**
	Rp 1	25	**065Z0293**
	Rp 1 ¼	32	**065Z0294**
	Rp 1 ½	40	**065Z0295**
	Rp 2	50	**065Z0296**

** One tailpiece (CuZn39Pb3) with internal thread for VRB external thread*

Technical data

Nominal diameter	DN	15					20	25	32	40	50
k_{VS} value	m^3/h	0.63	1.0	1.6	2.5	4.0	6.3	10	16	25	40
Stroke	mm	10							15		
Control range		30:1	50:1				100:1				
Control characteristic		Logarithmic: port A-AB; Linear: port B-AB									
Cavitation factor z		≥ 0.4									
Leakage		A - AB bubble tight B - AB ≤ 1.0% of k_{VS}									
Nominal pressure	PN	16									
Max. closing pressure	bar	Mixing: 4 Diverting: 1									
Medium		Circulation water / glycolic water up to 50%									
Medium pH		Min. 7, Max. 10									
Medium temperature	°C	2 (–10[1]) … 130									
Connections		Internal or external thread									
Materials											
Valve body		Red bronze (Rg5)									
Valve stem		Stainless steel									
Valve cone		Dezincification resistant brass									
Stuffing box sealing		EPDM									

[1] *At temperatures from –10 up to +2 °C use stem heater*

Additional info

» Sizing diagram for valves can be found on page 9
» Differential pressures for specific actuator combination can be found on page 8
» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LS.E

Seated valves VRG 2 and VRG 3

Description

VRG valves provide a quality, cost effective solution for most water and chilled applications.
The valves are designed to be combined with AMV(E) 435 or AMV(E) 438 SU actuators.

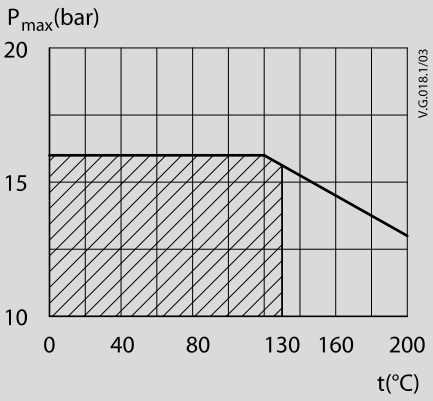
Applications

Heating systems and HVAC applications (water side).

Features

» Snap mechanical connection together with AMV(E) 435
» Soft sealing
» Logarithmic characteristic A-AB and linear characteristic B-AB
» Control range up to 100:1
» External thread connection
» Dedicated 2-port valve
» Suitable for diverting applications (3-port)

2-way and 3-way seated valves with external thread DN 15-50



Ordering

Valves

DN	k_{vs} (m^3/h)	Code number	
		VRG 2	VRG 3
15	0.63	**065Z0131**	**065Z0111**
	1	**065Z0132**	**065Z0112**
	1.6	**065Z0133**	**065Z0113**
	2.5	**065Z0134**	**065Z0114**
	4	**065Z0135**	**065Z0115**
20	6.3	**065Z0136**	**065Z0116**
25	10	**065Z0137**	**065Z0117**
32	16	**065Z0138**	**065Z0118**
40	25	**065Z0139**	**065Z0119**
50	40	**065Z0140**	**065Z0120**

Tailpieces

Type		DN	Code number
Tailpiece*	Rp ½	15	**065Z0291**
	Rp ¾	20	**065Z0292**
	Rp 1	25	**065Z0293**
	Rp 1 ¼	32	**065Z0294**
	Rp 1 ½	40	**065Z0295**
	Rp 2	50	**065Z0296**

** One tailpiece (CuZn39Pb3) with internal thread for VRG external thread*

Technical data

Nominal diameter	DN	15					20	25	32	40	50
k_{vs} value	m^3/h	0.63	1.0	1.6	2.5	4.0	6.3	10	16	25	40
Stroke	mm	10							15		
Control range		30:1	50:1				100:1				
Control characteristic		Logarithmic: port A-AB; Linear: port B-AB									
Cavitation factor z		≥ 0.4									
Leakage		A - AB bubble tight									
		B - AB ≤ 1.0% of k_{vs}									
Nominal pressure	PN	16									
Max. closing pressure	bar	Mixing: 4 Diverting: 1									
Medium		Circulation water / glycolic water up to 50%									
Medium pH		Min. 7, Max. 10									
Medium temperature	°C	2 (–10[1]) … 130									
Connections		External thread									
Materials											
Valve body		Grey cast iron (GG-25)									
Valve stem		Stainless steel									
Valve cone		Dezincification resistant brass									
Stuffing box sealing		EPDM									

[1] At temperatures from –10 up to +2 °C use stem heater

Additional info

» Sizing diagram for valves can be found on page 9
» Differential pressures for specific actuator combination can be found on page 8
» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.CX.B

Seated valves VL 2 and VL 3

Description

VL 2 and VL 3 valves provide a quality, cost effective solution for most water and chilled applications.
The valves are designed to be combined with following actuators:

» DN 15-50 with AMV(E) 435 or AMV(E) 438 SU actuators
» DN 65-80 with AMV(E) 435 actuators
» DN 100 with AMV(E) 55, AMV(E) 56

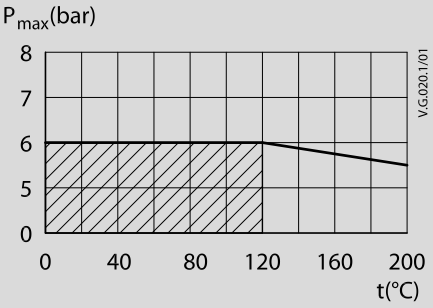
Applications

Heating systems and HVAC applications (water side).

Features

» Snap mechanical connection together with AMV(E) 435
» Soft sealing up to DN 80
» Logarithmic characteristic A-AB and linear characteristic B-AB
» Control range up to 100:1
» Flanged PN6 connection
» Dedicated 2-port valve
» Suitable for diverting applications (3-port)

2-way and 3-way seated valves with flanged connection DN 15-100



Ordering

Valves

DN	k_{VS} (m^3/h)	Code number	
		VL 2	VL 3
15	0.63	**065Z0371**	**065Z0351**
	1	**065Z0372**	**065Z0352**
	1.6	**065Z0373**	**065Z0353**
	2.5	**065Z0374**	**065Z0354**
	4	**065Z0375**	**065Z0355**
20	6.3	**065Z0376**	**065Z0356**
25	10	**065Z0377**	**065Z0357**
32	16	**065Z0378**	**065Z0358**
40	25	**065Z0379**	**065Z0359**
50	40	**065Z0380**	**065Z0360**
65	63	**065Z0381**	**065Z0361**
80	100	**065Z0382**	**065Z0362**
100	145	**065Z3426**	**065Z3413**

Technical data

Nominal diameter	**DN**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
Stroke	mm	10			15			20		30
Control range		50:1 (30:1)[1]	100:1							
Control characteristic		Logarithmic: port A-AB; Linear: port B-AB								
Cavitation factor z		≥ 0.4								
Leakage		A - AB bubble tight								
		B - AB ≤ 1.0% of k_{VS}								
Nominal pressure	PN	6								
Max. closing pressure (mixing)	bar	4						2.5		1.0[2]
Max. closing pressure (diverting)		1						Not applicable		
Medium		Circulation water / glycolic water up to 50%								
Medium pH		Min. 7, Max. 10								
Medium temperature	°C	2 (–10[3]) … 130								
Connections		Flange PN 6 acc. to EN 1092-2								
Materials										
Valve body		Grey cast iron (GG-25)								
Valve stem		Stainless steel								
Valve cone		Dezincification resistant brass								Red bronze (Rg 5)
Stuffing box sealing		EPDM								

[1] *Only for DN 15 k_{VS} 0.63*
[2] *1.5 bar in combination with AMV(E) 55*
[3] *At temperatures from –10 up to +2 °C use stem heater*

Additional info

» Sizing diagram for valves can be found on page 9
» Differential pressures for specific actuator combination can be found on page 8
» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LS.D

Seated valves VF 2 and VF 3

Description

VF 2 and VF 3 valves provide a quality, cost effective solution for most water and chilled applications.
The valves are designed to be combined with following actuators:

» DN 15-50 with AMV(E) 435 or AMV(E) 438 SU actuators
» DN 65-80 with AMV(E) 435 actuators
» DN 100 with AMV(E) 55, AMV(E) 56
» DN 125, 150 with AMV(E) 55, AMV(E) 56, AMV(E) 85 or AMV(E) 86 actuators

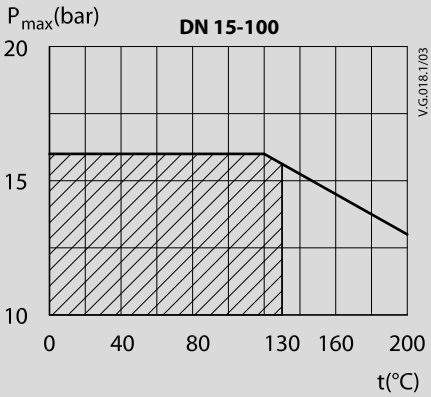
Applications

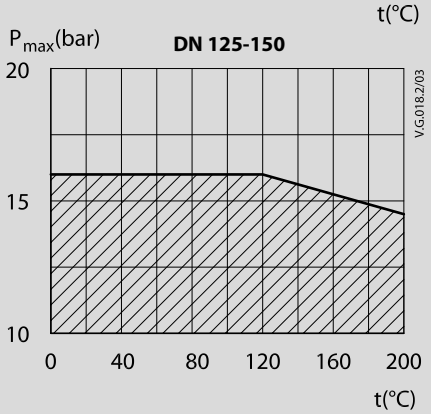
Heating systems and HVAC applications (water side).

Features

» Snap mechanical connection together with AMV(E) 435
» Soft sealing up to DN 80
» Logarithmic characteristic A-AB and linear characteristic B-AB
» Control range up to 100:1
» Flanged PN16 connection
» Dedicated 2-port valve
» Suitable for diverting applications (3-port)

2-way and 3-way seated valves with flanged connection DN 15-150





Additional info

» Sizing diagram for valves can be found on page 9
» Differential pressures for specific actuator combination can be found on page 8
» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LS.D

Ordering

Valves

DN	k_{vs} (m^3/h)	Code number	
		VF 2	VF 3
15	0.63	**065Z0271**	**065Z0251**
	1	**065Z0272**	**065Z0252**
	1.6	**065Z0273**	**065Z0253**
	2.5	**065Z0274**	**065Z0254**
	4	**065Z0275**	**065Z0255**
20	6.3	**065Z0276**	**065Z0256**
25	10	**065Z0277**	**065Z0257**
32	16	**065Z0278**	**065Z0258**
40	25	**065Z0279**	**065Z0259**
50	40	**065Z0280**	**065Z0260**
65	63	**065Z0281**	**065Z0261**
80	100	**065Z0282**	**065Z0262**
100	145	**065B3205**	**065B1685**
125	220	**065B3230**	**065B3125**
150	320	**065B3255**	**065B3150**

Technical data

Nominal diameter	**DN**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**	**125**	**150**
Stroke	mm	10			15			20		30	40	
Control range		50:1 (30:1)[1]	100:1									
Control characteristic		Logarithmic: port A-AB; Linear: port B-AB										
Cavitation factor z		≥ 0.4										
Leakage		A - AB bubble tight										
		B - AB ≤ 1.0% of k_{vs}										
Nominal pressure	PN	16										
Max. closing pressure (mixing)	bar	4						2.5		1.0 [2] 1.5 [3]	0.5 [2] 1.0 [3] 3.0 [4]	0.2 [2] 0.5 [3] 1.5 [4]
Max. closing pressure (diverting)		1						Not applicable				
Medium		Circulation water / glycolic water up to 50%										
Medium pH		Min. 7, Max. 10										
Medium temperature	°C	2 (–10 [5]) … 130									2 (–10 [5]) … 200	
Connections		Flange PN 16 acc. to EN 1092-2										
Materials												
Valve body		Grey cast iron (GG-25)									Ductile iron (GGG 40)	
Valve stem		Stainless steel										
Valve cone		Dezincification resistant brass								Red bronze (Rg 5)	Ductile iron (GGG 40)	
Stuffing box sealing		EPDM									PTFE	

[1] Only for DN 15 k_{vs} 0.63
[2] For actuators AMV(E) 56
[3] For actuators AMV(E) 55
[4] For actuators AMV(E) 85, AMV(E) 86
[5] At temperatures from -10 up to +2 °C use stem heater

Fan coil valves VZL 2, 3 and 4

Description

VZL valves provide a high quality, cost effective solution for the control of hot and/or chilled water for fan coil units, small reheaters, and recoolers in temperature control systems.
The valves are used in combination with:
AMV(E) 130/140, AMV(E) 130H/140H, AMV(E) 13 SU and TWA-ZL actuators.

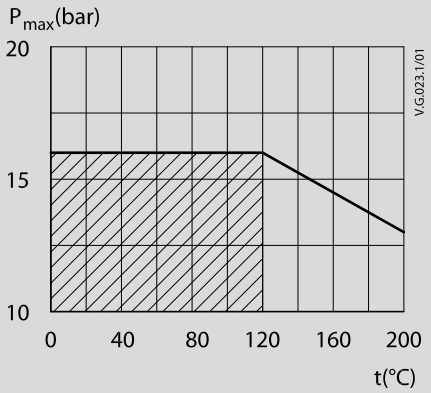
Applications

HVAC applications (water side).

Features

» Push connection between valve and actuator
» Design that prevents sticking in closed position
» Linear characteristic
» Suitable to run together with thermic actuator TWA-ZL

2-way and 3-way and 4-way fan coil valves with external thread DN 15-20



Ordering

VZL 2

DN	k_{VS} (m^3/h)	max Δp (bar)	Code number	
			Flat End	Compression
15	0.25	2.5	**065Z2070**	**065Z2040**
	0.4		**065Z2071**	**065Z2041**
	0.63		**065Z2072**	**065Z2042**
	1	2	**065Z2073**	**065Z2043**
	1.6		**065Z2074**	**065Z2044**
20	2.5	1	**065Z2075**	**065Z2045**
	3.5		**065Z2076**	**065Z2046**

VZL 3

DN	k_{VS} (A-AB) (m^3/h)	k_{VS} (B-AB) (m^3/h)	max Δp (bar)	Code number	
				Flat End	Compression
15	0.25	0.25	2.5	**065Z2080**	**065Z2050**
	0.4	0.25		**065Z2081**	**065Z2051**
	0.63	0.4		**065Z2082**	**065Z2052**
	1	0.63	2	**065Z2083**	**065Z2053**
	1.6	1		**065Z2084**	**065Z2054**
20	2.5	1.6	1	**065Z2085**	**065Z2055**
	3.5	2.5		**065Z2086**	**065Z2056**

VZL 4

DN	k_{VS} (A-AB) (m^3/h)	k_{VS} (B-AB) (m^3/h)	max Δp (bar)	Code number	
				Flat End	Compression
15	0.25	0.25	2.5	**065Z2090**	**065Z2060**
	0.4	0.25		**065Z2091**	**065Z2061**
	0.63	0.4		**065Z2092**	**065Z2062**
	1	0.63	2	**065Z2093**	**065Z2063**
	1.6	1		**065Z2094**	**065Z2064**
20	2.5	1.6	1	**065Z2095**	**065Z2065**
	3.5	2.5		**065Z2096**	**065Z2066**

Technical data

Nominal diameter	DN	15	20
Stroke	mm	2.8	
Control range		min. 30:1	
Control characteristic		Linear	
Leakage		A - AB ≤ 0.05% of k_{VS}	
		B - AB ≤ 1% of k_{VS}	
Nominal pressure	PN	16	
Medium		Circulation water / Glycolic water up to 50%	
Medium pH		Min. 7, Max. 10	
Medium temperature	°C	2 … 120	
Connections		External thread (flat end (MS 58) or compression (conex))	
Materials			
Body, seat, cone and stem		Brass	
Stuffing box sealing		EPDM	

Additional info

» Sizing diagram for valves can be found on page 9
» Differential pressures for specific actuator combination can be found on page 8
» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.HD.E

Fan coil valves VZ 2, 3 and 4

Description

VZ valves provide a high quality, cost effective solution for the control of hot and/or chilled water for fan coil units, small reheaters, and recoolers in temperature control systems.
The valves are used in combination with:
AMV(E) 130/140, AMV(E) 130H/140H and AMV(E) 13 SU actuators.

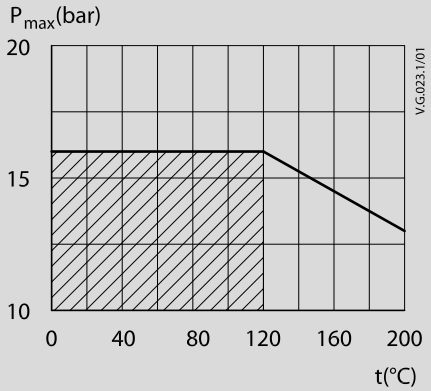
Applications

HVAC applications (water side).

Features

» Push connection between valve and actuator
» Design that prevents sticking in closed position
» Soft sealing
» Stoke of 5.5mm enables perfect logarithmic characteristic A-AB and linear characteristic B-AB

2-way and 3-way and 4-way fan coil valves with external thread DN 15-20



Ordering

VZ 2

DN	k_{VS} (m^3/h)	max Δp (bar)	Code number	
			Flat End	Compression
15	0.25	3.5	065Z5310	065Z5010
	0.4		065Z5311	065Z5011
	0.63		065Z5312	065Z5012
	1		065Z5313	065Z5013
	1.6		065Z5314	065Z5014
	2.5		065Z5315	065Z5015
20	2.5	2.5	065Z5320	065Z5020
	4.0		065Z5321	065Z5021

VZ 3

DN	k_{VS} (A-AB) (m^3/h)	k_{VS} (B-AB) (m^3/h)	max Δp (bar)	Code number	
				Flat End	Compression
15	0.25	0.25	3.5	065Z5410	065Z5110
	0.4	0.25		065Z5411	065Z5111
	0.63	0.4		065Z5412	065Z5112
	1	0.63		065Z5413	065Z5113
	1.6	1		065Z5414	065Z5114
	2.5	1.6		065Z5415	065Z5115
20	2.5	1.6	2.5	065Z5420	065Z5120
	4.0	2.5		065Z5421	065Z5121

VZ 4

DN	k_{VS} (A-AB) (m^3/h)	k_{VS} (B-AB) (m^3/h)	max Δp (bar)	Code number	
				Flat End	Compression
15	0.25	0.25	3.5	065Z5510	065Z5210
	0.4	0.25		065Z5511	065Z5211
	0.63	0.4		065Z5512	065Z5212
	1	0.63		065Z5513	065Z5213
	1.6	1		065Z5514	065Z5214
	2.5	1.6		065Z5515	065Z5215
20	2.5	1.6	2.5	065Z5520	065Z5220
	4.0	2.5		065Z5521	065Z5221

Technical data

Nominal diameter	DN	15	20
Stroke	mm	5.5	
Control range		min. 50:1	
Control characteristic		Logarithmic	
Leakage		A - AB ≤ 0.05% of k_{VS}	
		B - AB ≤ 1% of k_{VS}	
Nominal pressure	PN	16	
Medium		Circulation water / Glycolic water up to 50%	
Medium pH		Min. 7, Max. 10	
Medium temperature	°C	2 … 120	
Connections		External thread (flat end (MS 58) or compression (conex))	
Materials			
Body, seat, cone and stem		Brass	
Stuffing box sealing		EPDM	

Additional info

» Sizing diagram for valves can be found on page 9
» Differential pressures for specific actuator combination can be found on page 8
» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.HB.I

On/off zone valves AMZ 112 and AMZ 113

Description

The ON / OFF zone valves type AMZ 112 and AMZ 113 are typical used in connection with:

» Domestic and commercial central heating applications
» Domestic hot water applications
» Solar energy plants
» Priority control of hot water supply and heating (diverting function)
» Priority control of boiler and solid fuel installations (diverting function)

Features

» Suitable to work with on/off controllers (with 3rd wire)
» Ball valves with replacable stuffing box
» Big closing differential pressure
» Manual operation
» High k_{VS} value

On/off zone valve with actuator

Ordering

AMZ 112, 2-port ball valve with actuator

DN	k_{VS} (m^3/h)	Connection	max. Δp valve	Code number
15	17	Rp ½"	6 bar	**082G5501**
20	41	Rp ¾"		**082G5502**
25	68	Rp 1"		**082G5503**
32	123	Rp 1¼"		**082G5514**

AMZ 113, 3-port ball valve with actuator

DN	k_{VS} (m^3/h)	Connection	max. Δp valve	Code number
15	3.8	Rp ½	6 bar	**082G5511**
20	7.7	Rp ¾		**082G5512**
25	11.6	Rp 1		**082G5513**

Technical data

Actuator

Type		AMZ 112	AMZ 113
Power supply	V	230 AC	
Power consumption	VA	7.5 (operating); 3 (stand by)	
Frequency	Hz	50/60	
Control input		On/off	
Rotation angle	°	90	
Rotation time	s/90°	30	60
Max. medium temperature	°C	130	
Ambient temperature	°C	0 … 50	
Storage and transport temperature	°C	–40 … +70	
Protection Class		II	
Grade of enclosure		IP 44	

Ball valve

Nominal diameter	DN	15	20	25	32
Leakage		Leakage class A			
Nominal pressure	PN	16			
Medium		Circulation water / glycolic water up to 50%			
Medium pH		Min. 7, Max. 10			
Medium temperature	°C	2 … 130			
Connections		Internal thread ISO 7/1			
Materials					
Valve body and stem		Hot stamped brass CuZn40Pb2 Ni plated			
Ball		Hot stamped brass CuZn40Pb2 Cr plated			
Valve cone		Brass			
Stuffing box and ball sealing		EPDM / FPM / PTFE			

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.HC.N

Rotary valves HRB 3 and HRB 4

Description

HRB rotary valves are used together with the actuators AMB 162 (also AMB 182 could be used as well if special speed is required).
The valves are used for controlling flow temperature in heating systems in which a certain leakage can be accepted and in which a defined control characteristic is not required.

Applications

Water based heating and cooling applications. 3-port valves can be placed in diverting and mixing function whereas 4-port version function is double mixing.

Threaded Rotary valves DN 15-50

Ordering

Type	DN	k_{VS} (m^3/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**	
		4.0			**065Z0404**	**065Z0412**
		6.3			**065Z0405**	**065Z0413**
	25	6.3		Rp 1"	**065Z0406**	-
		10			**065Z0407**	**065Z0414**
	32	16		Rp 1¼"	**065Z0408**	**065Z0415**
	40	25		Rp 1½"	**065Z0409**	**065Z0416**
	50	40		Rp 2"	**065Z0410**	**065Z0417**

Technical data

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	Max. 1.0% of k_{VS}					
Nominal pressure	PN	10					
Max. closing pressure	bar	Diverting: 2 / Mixing: 1					
Torque at PN	Nm	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					

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LH.B

Rotary valves HRE 3 and HRE 4

Description

HRE rotary valves are used together with the actuators AMB 162 (also AMB 182 could be used as well if special speed is required).
The valves are used for controlling flow temperature in heating systems in which a certain leakage can be accepted and in which a defined control characteristic is not required.

Applications

Water based heating and cooling applications. 3-port valves can be placed in diverting and mixing function whereas 4-port version function is double mixing.

Threaded Rotary valves DN 20-50

Ordering

Type	DN (mm)	k_{VS} (m^3/h)	PN	Connection	Code number	
					HRE 3	HRE 4
HRE 3 HRE 4	20	6.3	6	Rp ¾"	**065Z0418**	**065Z0423**
	25	10		Rp 1"	**065Z0419**	**065Z0424**
	32	16		Rp 1¼"	**065Z0420**	**065Z0425**
	40	25		Rp 1½"	**065Z0421**	**065Z0426**
	50	40		Rp 2"	**065Z0422**	**065Z0427**

Technical data

Nominal diameter	DN	20	25	32	40	50
Control characteristic		S characteristic				
Leakage	HRE 3	Diverting: max. 0.05% of k_{VS} / Mixing: max. 1.0% of k_{VS}				
	HRE 4	Max. 1.5% k_{VS}				
Nominal pressure	PN	6				
Max. closing pressure	bar	1				
Torque at PN	Nm	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		Grey cast iron EN-GJL-250(GG25)				
Slide shoe		CuZn36Pb2As (Brass DZR, CW 602N)				
Stuffing box sealing		EPDM				

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LS.Z

Rotary valves HFE 3

Description

HFE rotary valves are used together with the actuators AMB 162 (also AMB 182 could be used as well if special speed is required).
The valves are used for controlling flow temperature in heating systems in which a certain leakage can be accepted and in which a defined control characteristic is not required.

Applications

Water based heating and cooling applications. 3-port valves can be placed in diverting and mixing function.

HFE 3

Flanged Rotary valves DN 20-150

Ordering

Type	DN	k_{vs} (m^3/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

Nominal diameter	DN	20	25	32	40	50	65	80	100	125	150
k_{vs}	m^3/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									

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LH.A

The solution to your HVAC challenges in a single product range

Our vision is to expand your capacity in an innovative co-operative relationship. We already have a long term strategy for our HVAC field devices that ensures that we are able to meet the requirements in the most commonly used application areas of commercial HVAC.

With Danfoss as your supplier of control solutions for HVAC and commercial indoor climate, you have access to benefits like:

» A comprehensive and competitive product portfolio
» A global business partner with local sales and service support
» An independent supplier that adds value to your HVAC business
» Innovative products and solutions that improve the performance of your application
» Long-term experience within heating and cooling

Moreover, innovative co-operation in mutually beneficial partnership is an important part of our strategy. Our aim with this approach is to meet any special requirements you might have regarding product design and performance.

Supporting our commitment to HVAC, the Danfoss Group today ranks as a global leader in developing and manufacturing mechanical and electronic controls for countless industries.

Actuator for modulating control AME 435

Description

AME 435 actuator is used with two and three way valves type VRB, VRG, VF and VL up to DN 80 diameter.

Applications

Operation of seated valves.

Features

» "Self stroking" function
» Load related "switch off" function that prevents overloading
» Manual operation
» Position indication
» LED signalling
» Multifunctional DIP switch: speed selection, input range selection, signal inversion, characteristic setup and anti-oscillation
» Tool-free mounting
» Auto detection of input (Y) signal
» External RESET Button

AME 435

Intelligent actuator for modulating control

Ordering

Actuator

Type	Supply voltage	Code number
AME 435	24 V AC/DC	**082H0161**

Accessories – Stem heater

Type	DN	Power supply	Code number
Stem heater*	15-80	24 V AC	**065Z0315**

** For valve types VRB, VRG, VF and VL gen. 2009*

Accessories – Adapter

Valves	DN	max. Δp (bar)	Code number
For old VRB, VRG, VF and VL valves	15	9	**065Z0313**
	20	4	
	25	2	
	32	1	
	40	0.8	
	50	0.5	

Technical data

Power supply	V	24 AC/DC; ±10%
Power consumption	VA	4.5
Frequency	Hz	50/60
Control input Y	V	0-10 (2-10) [Ri = 95 kΩ]
	mA	0-20 (4-20) [Ri = 500 Ω]
Output signal X	V	0-10 (2-10) [RL = 650 Ω (maximal load)]
Closing force	N	400
Max. stroke	mm	20
Speed	mm/s	7.5 or 15
Max. medium temperature	°C	130
Ambient temperature	°C	0 … 55
Storage and transport temperature	°C	–40 … +70
Protection class		II
Grade of enclosure		IP 54
Weight	kg	0.45
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LE.K

Actuator for 3-point control AMV 435

Description

AMV 435 actuator is used with two and three way valves type VRB, VRG, VF and VL up to DN 80 diameter.

Applications

Operation of seated valves.

Features

» "Self stroking" function
» Load related "switch off" function that prevents overloading
» Manual operation
» Position indication
» LED signalling
» DIP switch for speed selection
» Tool-free mounting

AMV 435

Actuator for 3-point control

Ordering

Actuator

Type	Supply voltage	Code number
AMV 435	24 V AC/DC	**082H0162**
	230 V AC	**082H0163**

Accessories – Stem heater

Type	DN	Power supply	Code number
Stem heater*	15-80	24 V AC	**065Z0315**

** For valve types VRB, VRG, VF and VL gen. 2009*

Accessories – Adapter

Valves	DN	max. Δp (bar)	Code number
For old VRB, VRG, VF and VL valves	15	9	**065Z0313**
	20	4	
	25	2	
	32	1	
	40	0.8	
	50	0.5	

Technical data

Power supply	V	24 AC/DC, 230 AC; +10 to –15%
Power consumption	VA	2
Frequency	Hz	50/60
Control input		3 point
Closing force	N	400
Max. stroke	mm	20
Speed	mm/s	7.5 or 15
Max. medium temperature	°C	130
Ambient temperature	°C	0 … 55
Storage and transport temperature	°C	–40 … +70
Protection class		II
Grade of enclosure		IP 54
Weight	kg	0.45
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LE.N

Actuator for modulating control AME 438 SU

Description

AME 438 SU actuator is used with two and three-way valves type VRB, VRG, VF and VL up to DN 50 diameter.

Applications

Operation of seated valves.

Features

» "Self stroking" function
» Load related "switch off" function that prevents overloading
» Spring up function (safety)

AME 438 SU

Actuator for modulating control with safety function

Ordering

Actuator

Type	Supply voltage	Code number
AME 438 SU	24 V AC	**082H0121**

Accessories – Stem heater

Type	DN	Code number
Stem heater*	15-50	**065Z0315**

** For valve types VRB, VRG, VF and VL gen. 2009*

Technical data

Power supply	V	24 AC; ±10%
Power consumption	VA	14
Frequency	Hz	50/60
Control input Y	V	0-10 (2-10) [Ri = 24 kΩ]
	mA	0-20 (4-20) [Ri = 500 Ω]
Output signal X	V	0-10 (2-10)
Closing force	N	450
Max. stroke	mm	15
Speed	mm/s	15
Max. medium temperature	°C	150
Ambient temperature	°C	0 … 55
Storage and transport temperature	°C	–40 … +70
Protection class		II
Grade of enclosure		IP 54
Weight	kg	2.3
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LE.O

Actuator for 3-point control AMV 438 SU

Description

AMV 438 SU actuator is used with two and three-way valves type VRB, VRG, VF and VL up to DN 50 diameter.

Applications

Operation of seated valves.

Features

» Load related "switch off" function that prevents overloading
» Spring up function (safety)

AMV 438 SU

Actuator for 3-point control

Ordering

Actuator

Type	Supply voltage	Code number
AMV 438 SU	24 V AC	**082H0122**
	230 V AC	**082H0123**

Accessories

Type	Code number
Additional switches (2x)	**082H7015**
Additional switches (2x) and potentiometer (10k Ω)	**082H7016**
Additional switches (2x) and potentiometer (1k Ω)	**082H7017**
Stem heater*	**065Z0315**

** For valve types VRB, VRG, VF and VL gen. 2009*

Technical data

Power supply	V	24 AC, 230 AC; +10 to –15%
Power consumption	VA	12
Frequency	Hz	50/60
Control input		3 point
Closing force	N	450
Max. stroke	mm	15
Speed	mm/s	15
Max. medium temperature	°C	150
Ambient temperature	°C	0 … 55
Storage and transport temperature	°C	–40 … +70
Protection class		II
Grade of enclosure		IP 54
Weight	kg	2.3
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LE.P

Actuator for modulating control AME 35

Description

AME 35 actuator is used with two and three-way valves type VRB, VRG, VF and VL up to DN 50 diameter.

Applications

Operation of seated valves where very fast actuators is needed.

Features

» "Self stroking" function
» Load related "switch off" function that prevents overloading

AME 35

Actuator for modulating control

Ordering

Actuator

Type	Supply voltage	Code number
AME 35	24 V AC	**082G3022**

Accessories

Type	DN	Code number
Adapter for VRB, VRG, VF and VL valves gen. 2009	15-50	**065Z0311**
Stem heater for VRB, VRG, VF and VL valves gen. 2009	15-50	**065Z0315**

Technical data

Power supply	V	24 AC; +10 to –15%
Power consumption	VA	9
Frequency	Hz	50/60
Control input Y	V	0-10 (2-10) [Ri = 24 kΩ]
	mA	0-20 (4-20) [Ri = 500 Ω]
Output signal X	V	0-10 (2-10)
Closing force	N	600
Max. stroke	mm	15
Speed	mm/s	3
Max. medium temperature	°C	150
Ambient temperature	°C	0 … 55
Storage and transport temperature	°C	–40 … +70
Protection class		II
Grade of enclosure		IP 54
Weight	kg	1.7
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. ED.95.V

Actuator for 3-point control AMV 35

Description

AMV 35 actuator is used with two and three-way valves type VRB, VRG, VF and VL up to DN 50 diameter.

Applications

Operation of seated valves where very fast actuator is needed.

Features

» Load related "switch off" function that prevents overloading

AMV 35

Actuator for 3-point control

Ordering

Actuator

Type	Supply voltage	Code number
AMV 35	24 V AC	**082G3020**
	230 V AC	**082G3021**

Accessories

Type	DN	Code number
Adapter for VRB, VRG, VF and VL valves gen. 2009	15-50	**065Z0311**
Stem heater for VRB, VRG, VF and VL valves gen. 2009	15-50	**065Z0315**
Additional switches (2x)		**082H7015**
Additional switches (2x) and potentiometer (10k Ω)		**082H7016**
Additional switches (2x) and potentiometer (1k Ω)		**082H7017**

Technical data

Power supply	V	24 AC, 230 AC; +10 to –15%
Power consumption	VA	7
Frequency	Hz	50/60
Control input		3 point
Closing force	N	600
Max. stroke	mm	15
Speed	mm/s	3
Max. medium temperature	°C	150
Ambient temperature	°C	0 … 55
Storage and transport temperature	°C	–40 … +70
Protection class		II
Grade of enclosure		IP 54
Weight	kg	1.55
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. ED.95.R

Actuators for modulating control AME 55 and AME 56

Description

The actuators AME 55 and AME 56 are used with VL 2, VL 3 valves DN 100 and VF 2, VF 3 valves from DN 100 up to DN 150 diameter.

Applications

Operation of seated valves.

Features

» "Self stroking" function
» Load related "switch off" function that prevents overloading
» Manual operation

Actuator for modulating control

Ordering

Actuator

Type	Supply voltage	Code number
AME 55	24 V AC	**082H3022**
AME 56		**082H3025**

Accessories

Type	Code number
Active return signal kit for AME 55, AME 56	**082H3070**
Stem heater (VF, VL valves DN 100)	**065Z7020**
Stem heater (VF valves DN 125, 150)	**065Z7022**

Technical data

Type		AME 55	AME 56
Power supply	V	24 AC; ±10%	
Power consumption	VA	9	19.5
Frequency	Hz	50/60	
Control input Y	V	0-10 (2-10) [Ri = 24 kΩ]	
	mA	0-20 (4-20) [Ri = 500 Ω]	
Output signal X	V	0-10 (2-10)	
Closing force	N	2000	1500
Max. stroke	mm	40	
Speed	mm/s	8	4
Max. medium temperature	°C	200	
Ambient temperature	°C	0 … 55	
Storage and transport temperature	°C	–40 … +70	
Grade of enclosure		IP 54	
Weight	kg	3.8	
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3	

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. ED.96.R

Actuators for 3-point control AMV 55 and AMV 56

Description

The actuators AMV 55 and AMV 56 are used with VL 2, VL 3 valves DN 100 and VF 2, VF 3 valves from DN 100 up to DN 150 diameter.

Applications

Operation of seated valves.

Features

» Load related "switch off" function that prevents overloading
» Manual operation

Actuator for 3-point control

Ordering

Actuator

Type	Supply voltage	Code number
AMV 55	24 V AC	**082H3020**
AMV 55	230 V AC	**082H3021**
AMV 56	24 V AC	**082H3023**
AMV 56	230 V AC	**082H3024**

Accessories

Type	Code number
Additional switches (2x)	**082H7037**
Potentiometer (10kΩ/30 mm - for VF, VL DN 100)	**082H7035**
Potentiometer (10kΩ/40 mm - for VF DN 125-150)	**082H7036**
Potentiometer (1kΩ/30 mm - for VF, VL DN 100)	**082H7038**
Potentiometer (1kΩ/40 mm - for VF DN 125-150)	**082H7039**
Stem heater (VF, VL valves DN 100)	**065Z7020**
Stem heater (VF valves DN 125, 150)	**065Z7022**

Technical data

Type		AMV 55	AMV 56
Power supply	V	24 AC, 230 AC; ±10%	
Power consumption	VA	7	17.5
Frequency	Hz	50/60	
Control input		3-point	
Closing force	N	2000	1500
Max. stroke	mm	40	
Speed	mm/s	8	4
Max. medium temperature	°C	200	
Ambient temperature	°C	0 … 55	
Storage and transport temperature	°C	–40 … +70	
Grade of enclosure		IP 54	
Weight	kg	3.8	
CE marking in accordance with standards		Low Voltage Directive 73/23/EEC, EMC-Directive 2006/95/EEC: - EN 60730-1, EN 60730-2-14	

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. ED.96.Q

Actuators for modulating control AME 85 and AME 86

Description

The actuators AME 85 and AME 86 are used with VF 2 and VF 3 valves DN 125 and DN 150 diameter.

Applications

Operation of seated valves.

Features

» "Self stroking" function
» Load related "switch off" function that prevents overloading
» Manual operation

Actuator for modulating control

Ordering

Actuator

Type	Supply voltage	Code number
AME 85	24 V AC	**082G1452**
AME 86		**082G1462**

Accessories – Stem heater

Type	Code number
Stem heater for VF valves DN 125-150	**065Z7021**

Technical data

Type		AME 85	AME 86
Power supply	V	24 AC; +10% to –15%	
Power consumption	VA	12.5	25
Frequency	Hz	50/60	
Control input Y	V	0-10 (2-10) [Ri = 50 Ω]	
	mA	0-20 (4-20) [Ri = 500 Ω]	
Output signal X	V	0-10 (2-10)	
Closing force	N	5000	
Max. stroke	mm	40	
Speed	mm/s	8	3
Max. medium temperature	°C	200	
Ambient temperature	°C	0 … 55	
Storage and transport temperature	°C	–40 … +70	
Grade of enclosure		IP 54	
Weight	kg	9.8	10
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3	

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.AB.R

Actuators for 3-point control AMV 85 and AMV 86

Description

The actuators AMV 85 and AMV 86 are used with VF 2 and VF 3 valves DN 125 and DN 150 diameter.

Applications

Operation of seated valves.

Features

» Load related "switch off" function that prevents overloading
» Manual operation

Actuator for 3-point control

Ordering

Actuator

Type	Supply voltage	Code number
AMV 85	24 V AC	**082G1450**
AMV 85	230 V AC	**082G1451**
AMV 86	24 V AC	**082G1460**
AMV 86	230 V AC	**082G1461**

Accessories

Type	For actuators	Code number
Additional switches (2x)	AMV 86 / 24 V	**082H7050**
	AMV 86 / 230 V	**082H7051**
	AMV 85 / 24 V	**082H7072**
	AMV 85 / 230 V	**082H7071**
Additional switches (2x) and potentiometer (10kΩ)	AMV 86 / 24 V	**082H7081**
	AMV 86 / 230 V	**082H7080**
	AMV 85 / 24 V	**082H7083**
	AMV 85 / 230 V	**082H7082**
Stem heater for VF valves DN 125-150		**065Z7021**

Technical data

Type		AMV 85	AMV 86
Power supply	V	24 AC/230 AC ; +10 to –15%	
Power consumption	VA	10.5	23
Frequency	Hz	50/60	
Control input		3-point	
Closing force	N	5000	
Max. stroke	mm	40	
Speed	mm/s	8	3
Max. medium temperature	°C	200	
Ambient temperature	°C	0 … 55	
Storage and transport temperature	°C	–40 … +70	
Grade of enclosure		IP 54	
Weight	kg	9.8	10
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3	

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.AB.S

Actuators for modulating control AME 130 (H) and AME 140 (H)

Description

AME 130, AME 140, AME 130H and AME 140H actuators are used with VZ or VZL valves. Actuators marked with "H" enable hand operation. The actuator can be used with fan coil units, induction units, small reheaters, recoolers, and zone applications in which hot/cold water is the controlled medium.

Applications

Operation of fan coil valves.

Features

» "Self stroking" function
» Load related "switch off" function that prevents overloading
» Manual operation (only H version)

AME 130, 140 AME 130 H, 140 H

Actuators for modulating control

Ordering

Type	Supply voltage	Speed	Code number
AME 130	24 V AC	24 mm/s	**082H8044**
AME 140		12 mm/s	**082H8045**
AME 130H		24 mm/s	**082H8046**
AME 140H		12 mm/s	**082H8047**

Technical data

Type		AME 130, AME 130H	AME 140, AME 140H
Power supply	V	24 AC; +10 to –15%	
Power consumption	VA	1.3	
Frequency	Hz	50/60	
Control input Y	V	0-10 (2-10)	
	mA	0-20 (4-20)	
Output signal X	V	0-10 (2-10)	
Closing force	N	200	
Max. stroke	mm	5.5	
Speed	mm/s	24	12
Max. medium temperature	°C	130	
Ambient temperature	°C	0 … 55	
Storage and transport temperature	°C	–40 … +70	
Grade of enclosure		IP 42	
Weight	kg	0.3	
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3	

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.KG.Z

Actuators for 3-point control AMV 130 (H) and AMV 140 (H)

Description

AMV 130, AMV 140, AMV 130H and AMV 140H actuators are used with VZ or VZL valves. Actuators marked with "H" enable hand operation. The actuator can be used with fan coil units, induction units, small reheaters, recoolers, and zone applications in which hot/cold water is the controlled medium.

Applications

Operation of fan coil valves.

Features

» Load related "switch off" function that prevents overloading
» Manual operation (only H version)

AMV 130, 140 AMV 130 H, 140 H

Actuators for 3-point control

Ordering

Type	Supply voltage	Speed	Code number
AMV 130	24 V AC	24 mm/s	**082H8036**
AMV 140		12 mm/s	**082H8038**
AMV 130H		24 mm/s	**082H8040**
AMV 140H		12 mm/s	**082H8042**
AMV 130	230 V AC	24 mm/s	**082H8037**
AMV 140		12 mm/s	**082H8039**
AMV 130H		24 mm/s	**082H8041**
AMV 140H		12 mm/s	**082H8043**

Technical data

Type		AMV 130, AMV 130H	AMV 140, AMV 140H
Power supply	V	24 AC, 230 AC; +10 to –15%	
Power consumption	VA	1 [24 V AC]; 8 [230 V AC]	
Frequency	Hz	50/60	
Control input		3-point	
Closing force	N	200	
Max. stroke	mm	5.5	
Speed	mm/s	24	12
Max. medium temperature	°C	130	
Ambient temperature	°C	0 … 55	
Storage and transport temperature	°C	–40 … +70	
Grade of enclosure		IP 42	
Weight	kg	0.3	
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3	

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.KG.Y

Actuator for modulating control AME 13 SU

Description

AME 13 SU actuator is used with two, three and four-way fan coil valves type VZ and VZL.

Applications

Operation of fan coil valves.

Features

» "Self stroking" function
» Load related "switch off" function that prevents overloading
» Spring up function (safety)

AME 13 SU

Actuator for modulating control with safety function

Ordering

Type	Supply voltage	Code number
AME 13 SU	24 V AC	**082H3044**

Technical data

Power supply	V	24 AC; +10 to –15%
Power consumption	VA	9
Frequency	Hz	50/60
Control input Y	V	0-10 (2-10) [Ri = 24 kΩ]
	mA	0-20 (4-20) [Ri = 500 Ω]
Output signal X	V	0-10 (2-10)
Closing force	N	300
Max. stroke	mm	5.5
Speed	mm/s	14
Max. medium temperature	°C	130
Ambient temperature	°C	0 … 55
Storage and transport temperature	°C	–40 … +70
Protection class		II
Grade of enclosure		IP 54
Weight	kg	0.8
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.AB.U

Actuator for 3-point control AMV 13 SU

Description

AME 13 SU actuator is used with two, three and four-way fan coil valves type VZ and VZL.

Applications

Operation of fan coil valves.

Features

» Load related "switch off" function that prevents overloading
» Spring up function (safety)

AMV 13 SU

Actuator for 3-point control with safety function

Ordering

Type	Supply voltage	Code number
AMV 13 SU	24 V AC	**082H3043**
	230 V AC	**082H3042**

Accessories

Type	Code number
Additional switches (2x)	**082G3201**
Additional switches (2x) and potentiometer (10k Ω)	**082G3202**
Additional switches (2x) and potentiometer (1k Ω)	**082G3203**
Additional potentiometer (10k Ω)	**082H7019**
Additional potentiometer (1k Ω)	**082H7020**

Technical data

Power supply	V	24 AC, 230 AC; +10 to –15%
Power consumption	VA	7
Frequency	Hz	50/60
Control input		3 point
Closing force	N	300
Max. stroke	mm	5.5
Speed	mm/s	14
Max. medium temperature	°C	130
Ambient temperature	°C	0 … 55
Storage and transport temperature	°C	–40 … +70
Protection class		II
Grade of enclosure		IP 54
Weight	kg	0.8
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. ED.95.N

Thermal actuator TWA-ZL

Description

Danfoss thermal actuator TWA-ZL is used with Danfoss valves types VZL or VZ. The actuator can be controlled with a on/off controller or switch. These provide a cost effective solution for the control of hot and /or chilled water for fan coil units, small reheaters and recoolers in temperature control systems.

Applications

Operation of fan coil valves.

Features

» Position indicator

TWA-ZL

On/off thermal actuator

Ordering

Type	Supply voltage	Code number
TWA-ZL NC	24 V AC/DC	**082H3100**
TWA-ZL NO		**082H3101**
TWA-ZL NC	230 V AC	**082H3102**
TWA-ZL NO		**082H3103**

Technical data

Power supply	V	24 AC/DC or 230 AC
Power consumption	VA	2
Frequency	Hz	50/60
Control input		ON/OFF
Closing force	N	90
Max. stroke	mm	2.8
Full stroke time	min	3 [1)]
Max. medium temperature	°C	120
Ambient temperature	°C	2 … 60
Storage and transport temperature	°C	–40 … +70
Protection Class		II
Grade of enclosure		IP 41
Weight	kg	0.15
Cable length	m	1.2

[1)] When heating the actuator full stroke time increases up to some minutes – it depends on ambient temperature

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. VD.LE.R

Rotary actuators AMB 162 and AMB 182

Description

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 the types HRB, HRE and HFE.

The actuators are applicable with:

» Controllers with 3-point outlet (e.g. ECL Comfort)
» Controllers with standard voltage or current output (e.g. ECL Comfort)

Applications

Operation of rotary valves

Features

» Position indicator
» Manual operation

AMB 162 AMB 182

Rotary actuators

Ordering

Type	Torque	Control signal	Speed	Supply voltage	Remark	Code number
AMB 162	5 Nm	3-point	670 s/90°	230 V AC	-	**082H0010**
			140 s/90°	230 V AC	-	**082H0011**
					AS*	**082H0012**
				24 V AC	-	**082H0013**
					AS*	**082H0014**
			70 s/90°	230 V AC	-	**082H0015**
		Modulating	140 s/90°	24 V AC/DC	-	**082H0016**
AMB 182	10 Nm	3-point	70 s/90°	230 V AC	-	**082H0017**
				24 V AC	-	**082H0018**
	15 Nm	3-point	280 s/90°	230 V AC	-	**082H0019**
					AS*	**082H0020**
				24 V AC	-	**082H0021**
		Modulating	280 s/90°	24 V AC/DC	-	**082H0022**
			140 s/90°		-	**082H0023**

** Actuator with built-in auxiliary signal switch*

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
Control input		3-point
		0-10 V (2-10 V)
Operating torque	Nm	5, 10 or 15
Rotation angle	°	90
Ambient temperature	°C	0 … 50
Storage and transport temperature	°C	–10 … +80
Protection Class		II
Grade of enclosure		IP 42
Weight	kg	AMB 162: 0.46 AMB 182: 0.54
CE marking in accordance with standards		Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3

Additional info

» For detailed information about accessories and other technical information please refer to Data Sheet no. ED.96.N

Tender texts for your projects

AME 435

Electrical actuator for modulating control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC/DC, 50/60 Hz
- Actuator shall have selectable control input signal 0(4) … 20 mA and 0(2) … 10 V
- Actuator shall have output signal (0-10 V)
- Actuator shall have stroke of 20 mm
- Actuator shall have minimum closing force 400 N
- Actuator shall have selectable speed within 7.5-15 mm/s
- Actuator shall operate with media temperature range -10 to 130°C
- Actuator shall have external LED signalling of function modes
- Actuator shall have facility for manual operation
- Actuator shall have standby mode meaning it does not respond to control signal when activated (for manual operation)
- Actuator shall have automatic stroke adaption to the valve end positions to reduce commissioning time
- Actuator shall have valve flow characteristics adjustment feature – flow characteristic should be continuously adjustable from linear to logarithmic or opposite
- Actuator shall have force overload protection function to ensure that actuator and valve are not exposed to overload
- Actuator shall have visible stroke indicator
- Actuator shall have direct or inverse acting mode selector
- Actuator should be able to stabilise control output in case of oscillations by means of characteristics adjustment – anti-hunting feature
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP54
- Actuator should be tool free mounted to control valve
- Actuator shall have removable connection terminals for easy wiring
- Actuator shall have separated cover for connection terminals

AMV 435

Electrical actuator for 3-point control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC/DC or 230 V AC, 50/60 Hz
- Actuator shall have selectable speed within 7.5-15 mm/s
- Actuator shall have stroke of 20 mm
- Actuator shall have minimum closing force 400 N
- Actuator should operate with media temperature range -10 to 130°C
- Actuator shall have external LED signalling of function modes
- Actuator shall have facility for manual operation
- Actuator shall have end position signalling
- Actuator shall have force overload protection function to ensure that actuator and valve are not exposed to overload
- Actuator shall have visible stroke indicator
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards:
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP54
- Actuator should be tool free mounted to control valve
- Actuator shall have removable connection terminals for easy wiring
- Actuator shall have separated cover for connection terminals

Tender texts for your projects

AME 438 SU

Electrical actuator for modulating control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC, 50/60 Hz
- Actuator shall have selectable control input signal 0(4) … 20 mA and 0(2) … 10 V
- Actuator shall have output signal (0-10V)
- Actuator shall have speed 15 mm/s
- Actuator shall have stroke of 15 mm
- Actuator shall have minimum closing force 450 N
- Actuator should operate with media temperature range -10 to 150°C
- Actuator should have safety function – spring up in order to close the valve (A-AB port) in case of power failure
- Actuator shall have automatic stroke adaption to the valve end positions to reduce commissioning time
- Actuator shall have valve flow characteristics adjustment feature – flow characteristic should be continuously adjustable from linear to logarithmic or opposite
- Actuator shall have force overload protection function to ensure that actuator and valve are not exposed to overload
- Actuator shall shall be able to operate in modulating or 3-point control mode
- Actuator shall have sequence control (0-4.9 V ; 5.1-10 V)
- Actuator shall have k_{vs} reduction (flow reduction) possibility
- Actuator shall have robust aluminium housing
- Actuator shall have visible stroke indicator
- Actuator shall have direct or inverse acting mode selector
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP54
- Actuator shall have removable connection terminals for easy wiring

AMV 438 SU

Electrical actuator for 3-point control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC or 230 V AC, 50/60 Hz
- Actuator shall have speed 15 mm/s
- Actuator shall have stroke of 15 mm
- Actuator shall have minimum closing force 450N
- Actuator should operate with media temperature range -10 to 150°C
- Actuator should have safety function – spring up in order to close the valve (A-AB port) in case of power failure
- Actuator shall have force overload protection function to ensure that actuator and valve are not exposed to overload
- Actuator shall have robust aluminium housing
- Actuator shall have visible stroke indicator
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP54
- Actuator shall have removable connection terminals for easy wiring
- Actuator shall have auxiliary switch and potentiometer available as accessories

Tender texts for your projects

AME 55, 56

Electrical actuator for modulating control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC, 50 Hz
- Actuator shall have selectable control input signal 0(4) … 20 mA and 0(2) … 10 V
- Actuator shall have output signal (0-10V)
- Actuator shall have speed 8 mm/s (AME 55) or 4 mm/s (AME 56)
- Actuator shall have stroke of 40 mm
- Actuator shall have minimum closing force 2000 N (AME 55) or 1500N (AME 56)
- Actuator should operate with media temperature range -10 to 200°C
- Actuator shall have automatic stroke adaption to the valve end positions to reduce commissioning time
- Actuator shall have valve flow characteristics adjustment feature – flow characteristic should be continuously adjustable from linear to logarithmic or opposite
- Actuator shall have force overload protection function to ensure that actuator and valve are not exposed to overload
- Actuator shall shall be able to operate in modulating or 3-point control mode
- Actuator shall have sequence control (0-4.9 V ; 5.1-10 V)
- Actuator shall have k_{VS} reduction (flow reduction) possibility
- Actuator shall have robust metal housing
- Actuator shall have visible stroke indicator
- Actuator shall have direct or inverse acting mode selector
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards:
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP54
- Actuator shall have removable connection terminals for easy wiring

AMV 55, 56

Electrical actuator for 3-point control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC or 230 V AC, 50 Hz
- Actuator shall have speed 8 mm/s (AMV 55) or 4 mm/s (AMV 56)
- Actuator shall have stroke of 40 mm
- Actuator shall have minimum closing force 2000 N (AMV 55) or 1500N (AMV 56)
- Actuator should operate with media temperature range -10 to 200°C
- Actuator should have safety function – spring up in order to close the valve (A-AB port) in case of power failure
- Actuator shall have force overload protection function to ensure that actuator and valve are not exposed to overload
- Actuator shall have robust metal housing
- Actuator shall have visible stroke indicator
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards:
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP54
- Actuator shall have removable connection terminals for easy wiring
- Actuator shall have auxiliary switch and potentiometer available as accessories

Tender texts for your projects

AME 85, 86

Electrical actuator for modulating control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC, 50/60 Hz
- Actuator shall have selectable control input signal 0(4) … 20 mA and 0(2) … 10 V
- Actuator shall have output signal (0-10 V)
- Actuator shall have speed 8 mm/s (AME 85) or 3 mm/s (AME 86)
- Actuator shall have stroke of 40 mm
- Actuator shall have minimum closing force 5000 N
- Actuator should operate with media temperature range -10 to 200°C
- Actuator shall have automatic stroke adaption to the valve end positions to reduce commissioning time
- Actuator shall have valve flow characteristics adjustment feature – flow characteristic should be continuously adjustable from linear to logarithmic or opposite
- Actuator shall have force overload protection function to ensure that actuator and valve are not exposed to overload
- Actuator shall shall be able to operate in modulating or 3-point control mode
- Actuator shall have sequence control (0-4.9 V ; 5.1-10 V)
- Actuator shall have k_{VS} reduction (flow reduction) possibility
- Actuator shall have robust metal housing
- Actuator shall have visible stroke indicator
- Actuator shall have direct or inverse acting mode selector
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards:
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP54
- Actuator shall have removable connection terminals for easy wiring

AMV 85, 86

Electrical actuator for 3-point control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC or 230 V AC, 50/60 Hz
- Actuator shall have speed 8 mm/s (AMV 85) or 3 mm/s (AMV 86)
- Actuator shall have stroke of 40 mm
- Actuator shall have minimum closing force 5000 N
- Actuator should operate with media temperature range -10 to 200°C
- Actuator should have safety function – spring up in order to close the valve (A-AB port) in case of power failure
- Actuator shall have force overload protection function to ensure that actuator and valve are not exposed to overload
- Actuator shall have robust metal housing
- Actuator shall have visible stroke indicator
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards:
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP54
- Actuator shall have removable connection terminals for easy wiring
- Actuator shall have auxiliary switch and potentiometer available as accessories

Tender texts for your projects

AME 130, 130H

Electrical actuator for modulating control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC, 50/60 Hz
- Actuator shall have selectable control input signal 0(4) … 20 mA and 0(2) … 10 V
- Actuator shall have output signal (0-10 V)
- Actuator shall have speed 24 mm/s
- Actuator shall have stroke of 5.5 mm
- Actuator shall have minimum closing force 200 N
- Actuator should operate with media temperature range 2 to 120°C
- Actuator shall have facility for manual operation (AME 130H)
- Actuator shall have force switch-off at stem down position to prevent overload of actuator and valve
- Actuator shall have sequence control (0-4.9 V ; 5.1-10 V)
- Actuator shall have visible stroke indicator
- Actuator shall have direct or inverse acting mode selector
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards:
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3;
- Protection rating shall be IP42
- Actuator should be tool free mounted to control valve
- Actuator shall have at least 1.5m of cable for easy wiring

AMV 130, 130H

Electrical actuator for 3-point control in combination with 2 way and 3 way control valves

- Actuator power supply shall be 24 V AC or 230 V AC 50/60 Hz
- Actuator shall have speed 24 mm/s
- Actuator shall have stroke of 5.5 mm
- Actuator shall have minimum closing force 200 N
- Actuator should operate with media temperature range 2 to 120°C
- Actuator shall have facility for manual operation (AMV 130H)
- Actuator shall have force switch-off at stem down position to prevent overload of actuator and valve
- Actuator shall have visible stroke indicator
- Actuator shall be designed for use in HVAC systems
- Actuator shall bear CE marking for conformity with following standards:
  - Low Voltage Directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14
  - EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3
- Protection rating shall be IP42
- Actuator should be tool free mounted to control valve
- Actuator shall have at least 1.5m of cable for easy wiring

Tender texts for your projects

2 / 3 way valve (HVAC)

Seated 2 and 3 way control valve

- Control valves shall resist corrosion or any changes in materials or construction in normal operation and shut down conditions
- Control valve shall be delivered with tailpieces including sealing material
- Control valves shall have flanged connections according to EN 1092 or thread connections for pipe connecting with threaded or weldable tail-pieces
- Control valves from DN 15 to DN 80 should have soft sealing for no visible leakage at closing force 400 N
- Control valve should be designed to fit tool free mounting of actuator
- Control valve should operate with media temperature range -10 to 130°C without any changes taking place in the chemical or construction properties of the used materials
- Control valve shall be marked according to IEC Standard 534-5

The solution to your HVAC challenges in a single product range

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