

Infographic

Actuator selection for PICVs

An interactive selection for all Danfoss AB-QM PICV valves

Pressure Independent Control Valves (PICVs) are commonly used for hydronic balancing and precise temperature control in HVAC heating and cooling systems. The control accuracy, controllers to be used, project price and many more aspects are mostly determined by the selection of the PICV actuator.

There are many actuators that fit the Danfoss AB-QM series of PICV valves. This interactive infographic helps you find the best suited actuator for your projects.

Continue by clicking the buttons below:

Small combinations
DN 15 - DN 32



Large combinations
DN 125 - DN 150



Medium combinations
DN 40 - DN 100

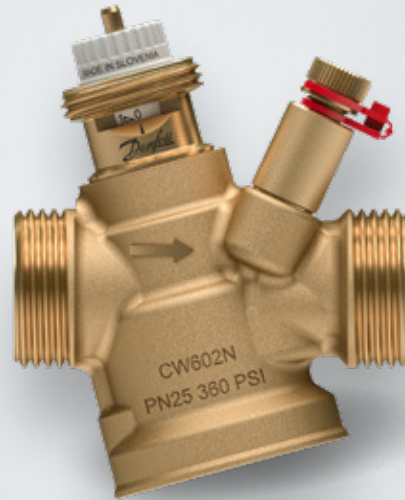


X-large combinations
DN 200 - DN 250



Small combinations for terminal units

AB-QM valves size S



AB-QM 4.0

DN	Qmin.	Qnom.
15 LF	20 l/h	200 l/h
15	65 l/h	650 l/h
15 HF	120 l/h	1200 l/h
20	110 l/h	1100 l/h
20 HF	190 l/h	1900 l/h

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Why choose?

- pressure independent control performance
- high accuracy control at full- and partial load conditions
- for heating and cooling systems
- increase HVAC system efficiency



AB-QM

DN	Qmin.	Qnom.
25	340 l/h	1700 l/h
25 HF	540 l/h	2700 l/h
32	640 l/h	3200 l/h
32 HF	800 l/h	4000 l/h

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[Actuators size S](#) >



Actuators size S - specifications

The overview shows the most common used actuators for AB-QM PICVs.
For special needs or applications contact our local Sales representative.

Control principle	Digital	Modulating / Floating			On-off	
	Step motor	Gear		Thermal	Gear	Thermal
Actuator principle	Step motor	Gear		Thermal	Gear	Thermal
Why choose?	<ul style="list-style-type: none"> connectivity & data HVAC 4.0 BMS integration high accuracy remote possibilities 	<ul style="list-style-type: none"> high accuracy high quality 	<ul style="list-style-type: none"> high quality 	<ul style="list-style-type: none"> low noise operation 	<ul style="list-style-type: none"> high quality speed 	<ul style="list-style-type: none"> low-price PWM complete series
Actuator	NovoCon® S	AME 110/120 NL(X)	AMV 110/120 NL	ABNM A5	AMI 140	TWA-Q
						
Specification summary						
Control signals	BACnet; Modbus; 0-10V; 4-20mA	0-10V; 4-20mA	3-point	0-10V	on-off 24/230V AC	on-off (PWM) 24/230V AC/DC
Power supply	24V AC/DC	24V AC	24V AC	24V AC/DC	24/230V AC	24/230V AC/DC
Feedback signal	BACnet; Modbus	x-signal	--	--	--	--
Speed	24/12/6/3 sec./mm	24/12 sec./mm	24/12 sec./mm	30 sec./mm	12 sec./mm	30 sec./mm
Characteristic	Logarithmic / Linear	Logarithmic / Linear	--	Logarithmic / Linear	--	--
Valve open/close detection	yes	yes	yes	yes	no	no
Cable	plug-in	standard	standard	plug-in	standard	standard
Mounting adapter	--	--	--	VA41 (incl.)	--	--
IP class	IP54	IP42	IP42	IP54	IP42	IP54
Options & accessories						
Power cable lengths	1.5/5/10 m	1.5/5/10 m	1.5/5/10 m	1/5/10 m	1.5/5 m	1.2/2/5 m
Daisy-chain cable length	0.5/1.5/5/10 m	--	--	--	--	--
Halogen free cables	standard	standard	standard	standard	standard	optional
DC power supply	standard	--	--	optional	--	standard
Expand features	energy cable; remote I/O cable; ChangeOver ⁶ actuator					
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[AB-QM size M >](#)

Medium combinations for air handling units

AB-QM valves size M

AB-QM NovoCon[®] for NovoCon M actuator

DN	Qmin.	Qnom.
40 (G 2A)	3 m ³ /h	7,5 m ³ /h
50 (G 2 ½A)	5 m ³ /h	12,5 m ³ /h
50	5 m ³ /h	12,5 m ³ /h
65	8 m ³ /h	20 m ³ /h
65 HF	10 m ³ /h	25 m ³ /h
80	11,2 m ³ /h	28 m ³ /h
80 HF	16 m ³ /h	40 m ³ /h
100	15,2 m ³ /h	38 m ³ /h
100 HF	23,6 m ³ /h	59 m ³ /h

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Why choose?

- pressure independent control performance
- high accuracy control of low flows at partial load conditions
- for heating and cooling systems
- increase HVAC system efficiency

AB-QM for AME and AMV actuators

DN	Qmin.	Qnom.
40 (G 2A)	3 m ³ /h	7,5 m ³ /h
50 (G 2 ½A)	5 m ³ /h	12,5 m ³ /h
50	5 m ³ /h	12,5 m ³ /h
65	8 m ³ /h	20 m ³ /h
65 HF	10 m ³ /h	25 m ³ /h
80	11,2 m ³ /h	28 m ³ /h
80 HF	16 m ³ /h	40 m ³ /h
100	15,2 m ³ /h	38 m ³ /h
100 HF	23,6 m ³ /h	59 m ³ /h

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[Actuators size M](#) >

Actuators size M - specifications

The overview shows the most common used actuators for AB-QM PICVs.
For special needs or applications contact our local Sales representative.

	Digital	Modulating / Floating	
Control principle			
Actuator principle	Step motor	Gear	
Why choose?	<ul style="list-style-type: none"> connectivity & data high accuracy HVAC 4.0 	<ul style="list-style-type: none"> high accuracy speed 	<ul style="list-style-type: none"> speed
Actuator	NovoCon® M	AME 435 QM	AMV 435
			
Specification summary			
For valves	AB-QM NovoCon®	AB-QM	AB-QM
Control signals	BACnet; Modbus; 0-10V; 4-20mA	0-10V; 4-20mA	3-point
Power supply	24V AC/DC	24V AC/DC	24V AC / 230V AC
Feedback signal	BACnet; Modbus	x-signal	--
Speed	24/12/6/3 sec./mm	15/7.5 sec./mm	15/7.5 sec./mm
Characteristic	Logarithmic / Linear	Logarithmic / Linear	--
Valve open/close detection	yes	yes	no
Cable	--	--	--
Mounting adapter	--	--	--
Actuator connection	push/pull	push/pull	push/pull
IP class	IP54	IP54	IP54
Options & accessories			
Expand features	3x Temperature sensors; 1x Analog Input; 1x Analog Output		
Stem heater	--	for AB-QM generation 2 = 065Z0315	for AB-QM generation 2 = 065Z0315
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Large combinations for chillers

AB-QM valves size L

AB-QM

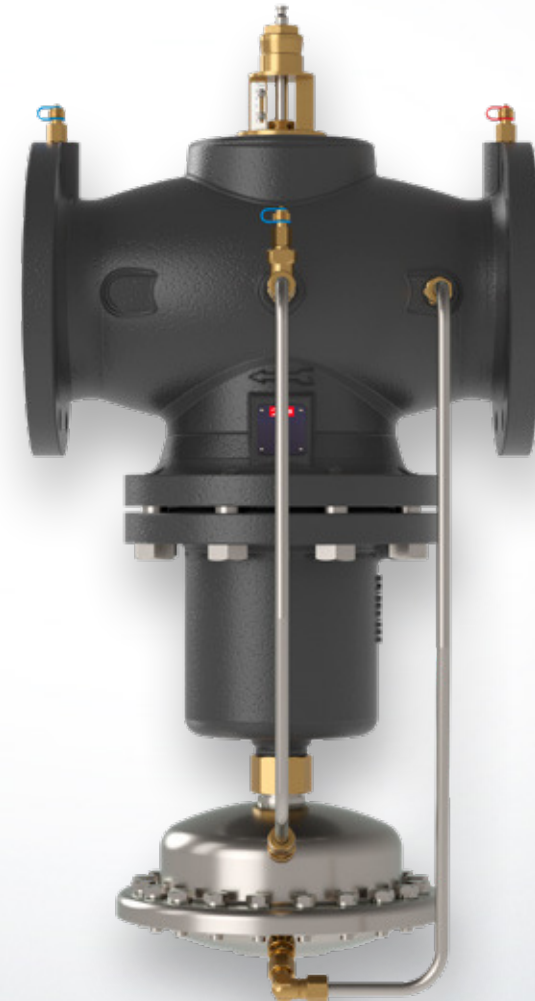
DN	Qmin.	Qnom.
125	36 m ³ /h	90 m ³ /h
125 HF	44 m ³ /h	110 m ³ /h
150	58 m ³ /h	145 m ³ /h
150 HF	76 m ³ /h	190 m ³ /h

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Why choose?

- pressure independent control performance
- high accuracy control of low flows at partial load conditions
- for heating and cooling systems
- increase HVAC system efficiency



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[Actuators size L](#)



Actuators size L - specifications

The overview shows the most common used actuators for AB-QM PICVs.
For special needs or applications contact our local Sales representative.

Control principle	Digital		Modulating / Floating		
	Step motor		Gear		
Actuator principle	Step motor		Gear		
Why choose?	<ul style="list-style-type: none"> connectivity & data BMS integration remote possibilities 	<ul style="list-style-type: none"> high accuracy HVAC 4.0 	<ul style="list-style-type: none"> high accuracy low-price 	<ul style="list-style-type: none"> speed high accuracy DC power supply 	<ul style="list-style-type: none"> UL certification high accuracy UL certification DC power supply SU/SD
Actuator	NovoCon® L	AME 55 QM	AME 655-1	AME 658-1	
					
Specification summary					
Control signals	BACnet; Modbus; 0-10V; 4-20mA	0-10V; 4-20mA; 3-point	0-10V; 4-20mA; 3-point	0-10V; 4-20mA; 3-point	
Power supply	24V AC/DC	24V AC	24V AC/DC	24V AC/DC	
Feedback signal	BACnet; Modbus	x-signal	x-signal	x-signal	
Speed	24/12/6/3 sec./mm	8 sec./mm	6/2 sec./mm	6/4 sec./mm	
Characteristic	Logarithmic / Linear	Logarithmic / Linear	Logarithmic / Linear	Logarithmic / Linear	
Valve open/close detection	yes	yes	yes	yes	
Cable	--	--	--	--	
Mounting adapter	--	--	--	--	
Actuator connection	push/pull	push/pull	push/pull	push/pull	
IP class	IP54	IP54	IP54	IP54	
Options & accessories					
Expand features	3x Temperature sensors; 1x Analog Input; 1x Analog Output				
Stem heater	065Z7022	065Z7022	065Z7022	065Z7022	
Spring return	Spring up / Spring down	--	--	Spring up / Spring down	
UL certification	--	--	yes	yes	
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[AB-QM size XL](#) >

X-large combinations for district cooling

AB-QM valves size XL

AB-QM

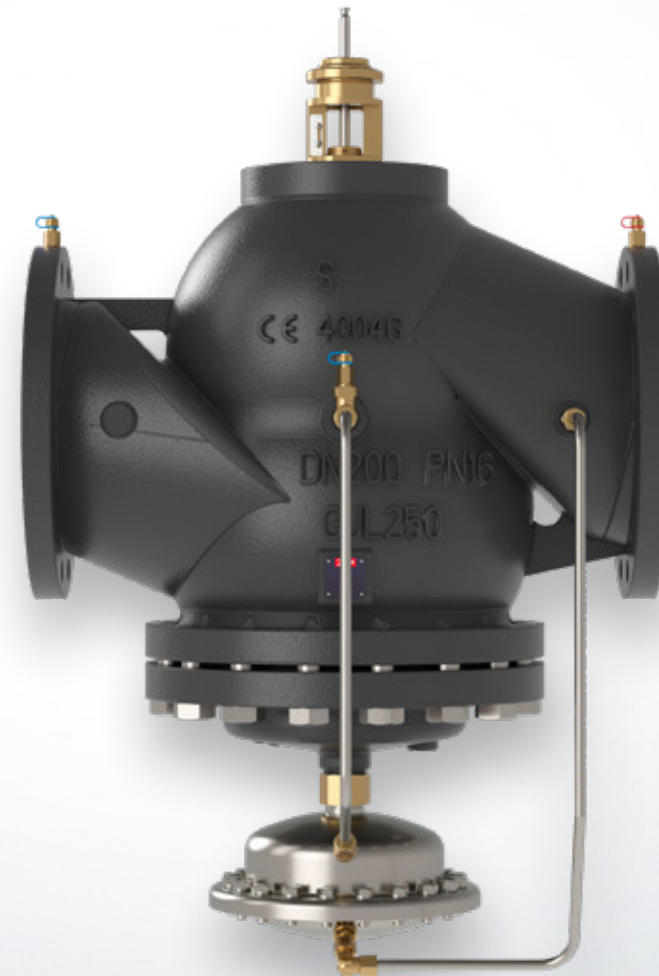
DN	Qmin.	Qnom.
200	80 m ³ /h	200 m ³ /h
200 HF	108 m ³ /h	270 m ³ /h
250	120 m ³ /h	300 m ³ /h
250 HF	148 m ³ /h	370 m ³ /h

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Why choose?

- pressure independent control performance
- high accuracy control of low flows at partial load conditions
- for district energy systems
- increase system efficiency



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[Actuators size XL](#)



Actuators size XL - specifications

The overview shows the most common used actuators for AB-QM PICVs.
For special needs or applications contact our local Sales representative.

	Digital	
Control principle		
Actuator principle	Step motor	Gear
Why choose?	<ul style="list-style-type: none"> • connectivity & data • BMS integration • remote possibilities • high accuracy • HVAC 4.0 	<ul style="list-style-type: none"> • speed • high accuracy • power supply • UL certification
Actuator	NovoCon® XL	AME 685-1
		
Specification summary		
Control signals	BACnet; Modbus; 0-10V; 4-20mA	0-10V; 4-20mA; 3-point
Power supply	24V AC/DC	24V AC/DC
Feedback signal	BACnet; Modbus	x-signal
Speed	24/12/6/3 sec./mm	6/3 sec./mm
Characteristic	Logarithmic / Linear	Logarithmic / Linear
Valve open/close detection	yes	yes
Cable	--	--
Mounting adapter	--	--
Actuator connection	Push/pull	Push/pull
IP class	IP54	IP54
Options & accessories		
Expand features	3x Temperature sensors; 1x Analog Input; 1x Analog Output	
Stem heater	--	--
Spring return	--	--
UL certification	--	yes
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Engineering HVAC 4.0 for smart buildings

As studies by the International Energy Agency (IEA) show 30% of the global energy consumption is caused by HVAC and lighting of buildings.

To make buildings more energy efficient and comfortable for it's occupants we need to use smart technologies.

The combinations of Danfoss AB-QM PICVs and NovoCon® digital actuators are a good example of what we call HVAC 4.0

The actuators provide the Building Management System (BMS) with real-time performance data. By continuously analyzing the data and remotely adapting the HVAC system to perform better, we help reduce the global energy consumption. For a better tomorrow.

Find out more on hvac40.danfoss.com