



ENGINEERING  
TOMORROW

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



# 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.


	Digital	Modulating / Floating	On-off
<b>Control principle</b>	<b>Step motor</b>		
<b>Actuator principle</b>	<ul style="list-style-type: none"> <li>connectivity &amp; data</li> <li>BMS integration</li> <li>high accuracy</li> <li>remote possibilities</li> </ul>		
<b>Why choose?</b>		<ul style="list-style-type: none"> <li>high accuracy</li> <li>high quality</li> </ul>	<ul style="list-style-type: none"> <li>high quality</li> <li>speed</li> </ul>
<b>Actuator</b>	<b>NovoCon® S</b>	<b>AME 110/120 NL(X)</b>	<b>AMI 140</b>
			
<b>Specification summary</b>			<b>TWA-Q</b>
<b>Control signals</b>	BACnet; Modbus; 0-10V; 4-20mA		on-off (PWM) 24/230V AC/DC
<b>Power supply</b>	24V AC/DC	0-10V; 4-20mA	24/230V AC/DC
<b>Feedback signal</b>	BACnet; Modbus	x-signal	–
<b>Speed</b>	24/12/6/3 sec./mm	24/12 sec./mm	30 sec./mm
<b>Characteristic</b>	Logarithmic / Linear	Logarithmic / Linear	–
<b>Valve open/close detection</b>	yes	yes	no
<b>Cable</b>	plug-in	standard	standard
<b>Mounting adapter</b>	--	–	–
<b>IP class</b>	IP54	IP42	IP54
<b>Options &amp; accessories</b>			
<b>Power cable lengths</b>	1.5/5/10 m	1.5/5/10 m	1.2/2/5 m
<b>Daisy-chain cable length</b>	0.5/1.5/5/10 m	–	–
<b>Halogen free cables</b>	standard	standard	optional
<b>DC power supply</b>	standard	–	standard
<b>Expand features</b>	energy cable; remote I/O cable; ChangeOver <sup>®</sup> actuator		
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[AB-QM 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
<b>Control principle</b>	<b>Step motor</b>	<b>Gear</b>
<b>Actuator principle</b>		
<b>Why choose?</b>	<ul style="list-style-type: none"> <li>• connectivity &amp; data</li> <li>• high accuracy</li> <li>• HVAC 4.0</li> </ul>	<ul style="list-style-type: none"> <li>• speed</li> </ul>
<b>Actuator</b>	<b>NovoCon® M</b>	<b>AME 435 QM</b>
		
<b>Specification summary</b>		
<b>For valves</b>	<b>AB-QM NovoCon®</b>	<b>AB-QM</b>
<b>Control signals</b>	BACnet; Modbus; 0-10V; 4-20mA	3-point
<b>Power supply</b>	24V AC/DC	24V AC / 230V AC
<b>Feedback signal</b>	BACnet; Modbus	–
<b>Speed</b>	24/12/6/3 sec./mm	15/7.5 sec./mm
<b>Characteristic</b>	Logarithmic / Linear	–
<b>Valve open/close detection</b>	yes	no
<b>Cable</b>	–	–
<b>Mounting adapter</b>	–	–
<b>Actuator connection</b>	push/pull	push/pull
<b>IP class</b>	IP54	IP54
<b>Options &amp; accessories</b>		
<b>Expand features</b>	3x Temperature sensors; 1x Analog Input; 1x Analog Output	
<b>Stem heater</b>	–	for AB-QM generation 2 = 065Z0315
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[AB-QM 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.



		Modulating / Floating	
Control principle	Digital		
Actuator principle	Step motor		Gear
Why choose?	<ul style="list-style-type: none"> <li>connectivity &amp; data</li> <li>BMS integration</li> <li>remote possibilities</li> </ul>	<ul style="list-style-type: none"> <li>high accuracy</li> <li>low-price</li> </ul>	<ul style="list-style-type: none"> <li>high accuracy</li> <li>DC power supply</li> <li>SU/SD</li> <li>UL certification</li> </ul>
Actuator	<b>NovoCon® L</b>	<b>AME 55 QM</b>	<b>AME 655-1</b>
			
Specification summary			
Control signals	BACnet; Modbus; 0-10V; 4-20mA	0-10V; 4-20mA; 3-point	0-10V; 4-20mA; 3-point
Power supply	24V AC/DC	24V AC	24V AC/DC
Feedback signal	BACnet; Modbus	x-signal	x-signal
Speed	24/12/6/3 sec./mm	8 sec./mm	6/4 sec./mm
Characteristic	Logarithmic / Linear	Logarithmic / Linear	Logarithmic / Linear
Valve open/close detection	yes	yes	yes
Cable	–	–	–
Mounting adapter	–	–	–
Actuator connection	push/pull	push/pull	push/pull
IP class	IP54	IP54	IP54
<b>Options &amp; accessories</b>			
Expand features	3x Temperature sensors; 1x Analog Input; 1x Analog Output		
Stem heater	065Z7022	065Z7022	065Z7022
Spring return	Spring up / Spring down	–	Spring up / Spring down
UL certification	–	–	yes
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[AB-QM 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	
<b>Control principle</b>		
<b>Actuator principle</b>	<b>Step motor</b>	<b>Gear</b>
<b>Why choose?</b>	<ul style="list-style-type: none"> <li>connectivity &amp; data</li> <li>BMS integration</li> <li>remote possibilities</li> </ul>	<ul style="list-style-type: none"> <li>speed</li> <li>high accuracy</li> <li>power supply</li> </ul>
<b>Actuator</b>	<b>NovoCon® XL</b>	<b>AME 685-1</b>
		
<b>Specification summary</b>		
<b>Control signals</b>	BACnet; Modbus; 0-10V; 4-20mA	0-10V; 4-20mA; 3-point
<b>Power supply</b>	24V AC/DC	24V AC/DC
<b>Feedback signal</b>	BACnet; Modbus	x-signal
<b>Speed</b>	24/12/6/3 sec./mm	6/3 sec./mm
<b>Characteristic</b>	Logarithmic / Linear	Logarithmic / Linear
<b>Valve open/close detection</b>	yes	yes
<b>Cable</b>	–	–
<b>Mounting adapter</b>	–	–
<b>Actuator connection</b>	Push/pull	Push/pull
<b>IP class</b>	IP54	IP54
<b>Options &amp; accessories</b>		
<b>Expand features</b>	3x Temperature sensors; 1x Analog Input; 1x Analog Output	
<b>Stem heater</b>	–	–
<b>Spring return</b>	–	–
<b>UL certification</b>	–	yes
	<a href="#">Go to datasheet</a>	<a href="#">Go to datasheet</a>

## 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](http://hvac40.danfoss.com)

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