

ENGINEERING  
TOMORROW

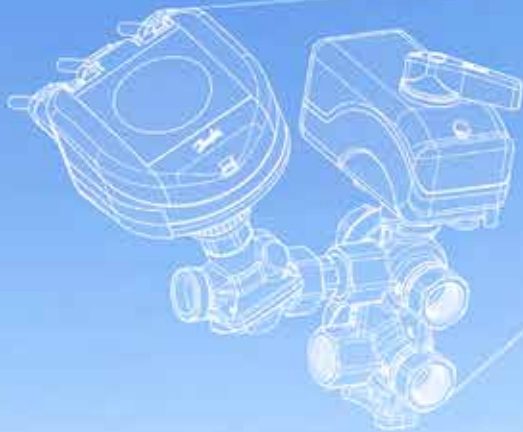
*Danfoss*

ChangeOver<sup>6</sup> | 6-port motorized ball valve

Simply **change between heating and cooling** with the **ChangeOver<sup>6</sup>**

**Perfect partners**

pressure independent flow control with risk-free switching



[hbc.danfoss.com](http://hbc.danfoss.com)

# ChangeOver<sup>6</sup>

## Saves time, removes risk, cuts cost

Danfoss ChangeOver<sup>6</sup> is a 6-port motorized ball valve that switches flow between heating and cooling circuits in 4-pipe systems and eliminates cross-flow.

From office blocks and hospitals to schools and colleges, large buildings present major heating and cooling challenges and not just at different seasons of the year.

Demand levels vary widely over the course of a single day depending on sun and shade, the number of people in each space, and equipment in use amongst other factors.

Achieving optimum comfort relies on precisely meeting the varying needs for cooling or heating in different parts of a building at the same time. To achieve this, a 4 pipe system is used for the

separate supply and return of both heating and cooling water.

The Danfoss ChangeOver<sup>6</sup> is used to select between these two separate circuits and eliminate the possibility of cross-flow. Removing risk and saving time for installation.

To precisely meet each temperature demand and avoid wasteful overflow due to the varying system pressure, flow rate is controlled by a pressure independent balancing and control valve, the AB-QM. This cuts cost by increasing pump, boiler, and chiller efficiency.

### Typical applications

- Office blocks, large retail stores, hospitals, schools, etc.
- Radiant ceiling panels supplied by 4 pipes
- Fan coil units with single coil supplied by 4 pipes



## Simplicity: Combining efficiency, precise control, and communication

A no compromise solution. ChangeOver<sup>6</sup> for perfect flow changeover and AB-QM for perfect flow control.

Choose the flow control actuator to suit your needs: Danfoss offers all.

The AME110NL geared actuator, modulated by 0-10V signal, ensures stable flow and temperature with reduced pump speeds and helps maintain delta T.

The NovoCon<sup>®</sup> digital geared actuator adds communication and automation, offering optimum time savings from remote installation onwards. Alarms and status are fed back via BACnet or Modbus to the Building Automation System enabling problem avoidance, energy monitoring, and remote maintenance.



**AB-QM DN 15 + NovoCon<sup>®</sup>**  
Superior hydronic performance combined with BMS connectivity. A digital actuator with Fieldbus communication (BACnet, Modbus), remote commissioning and maintenance, flow indication, and data logging.

**AB-QM DN 15 + AME110NL**  
0-10 V geared actuator. Designed for the AB-QM valve for cost-efficient precise flow modulation.

# Switching between heating and cooling

## A single signal switches supply and return simultaneously

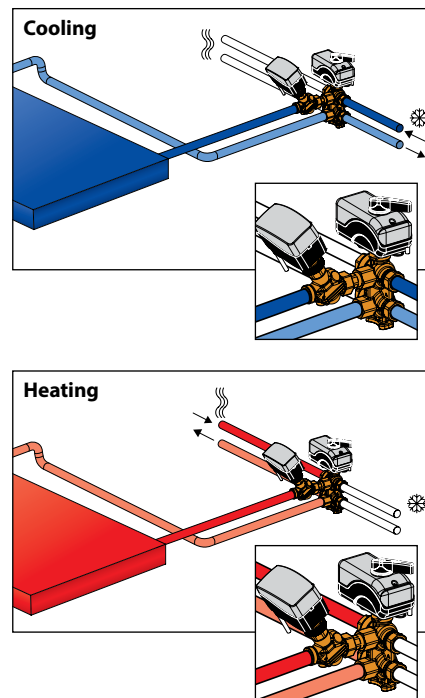
Both heating and cooling supply and return pipes attach to the ChangeOver<sup>6</sup>, but only one circuit can flow at any time.

Changing the control signal rotates the actuator, switching the supply and return ports between heating and cooling or vice versa. During rotation, the valve passes through a zero flow position. The ChangeOver<sup>6</sup> can be manually positioned to shut-off (zero flow up to 800 kPa) for service purposes.

The ChangeOver<sup>6</sup> has a very low differential pressure – equivalent to 3.6 kPa at 450 l/h.

The maximum design flow through AB-QM can be manually preset for cooling, corresponding to the maximum 10V input signal and modulating to zero flow at 0V.

Since heating requires a lower maximum flow rate, due its higher delta T, the same AB-QM is used to modulate heating as cooling, with the maximum flow corresponding input voltage, modulating to zero flow at 0V. Modulation via Fieldbus can be set in percentage or litres per hour.



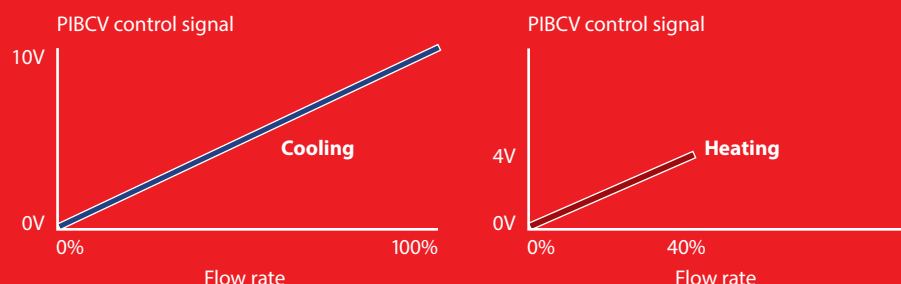
## AB-QM and ChangeOver<sup>6</sup> Perfect partners

The Danfoss AB-QM is a compact automatic balancing valve and pressure independent control valve in one. Combined with the ChangeOver<sup>6</sup>, less time is required for installation and commissioning and the need for manual balancing is eliminated in both heating and cooling circuits.

The AB-QM automatically balances system pressure changes and the maximum flow rate is determined by the actuator. For example via Fieldbus with NovoCon<sup>®</sup> or a 0-10V control signal if using the AME110NL.

A variety of actuators are available for the AB-QM offering different functionality.

Uniting pressure independent flow control and switching between heating and cooling circuits in one solution makes the combination AB-QM and ChangeOver<sup>6</sup> the ideal solution for climate ceilings and single coil fan coils.



# Connect with us online to **learn more**

At Danfoss, we engineer the most innovative HVAC solutions of tomorrow... today. We do this by focusing on solutions that reduce climate impact while contributing to the productivity and well-being of the people that work with and rely on our services all over the world.

To learn more about the ChangeOver<sup>6</sup>, the AB-QM valve, the NovoCon<sup>®</sup> digital actuator, AME actuators, as well as the Danfoss organization, please visit our website at:

**[hbc.danfoss.com](http://hbc.danfoss.com)**

Choose the ChangeOver<sup>6</sup> combination to suit your needs from the table below, based on the maximum flow rate required and the actuator functions. Contact us for additional actuator types.

## ChangeOver<sup>6</sup>

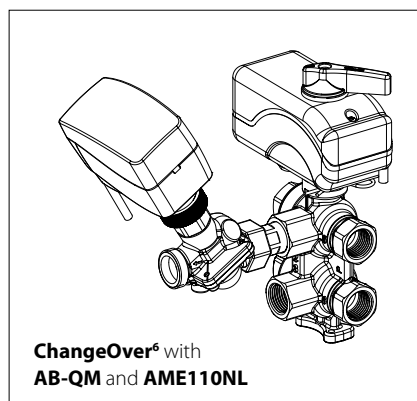
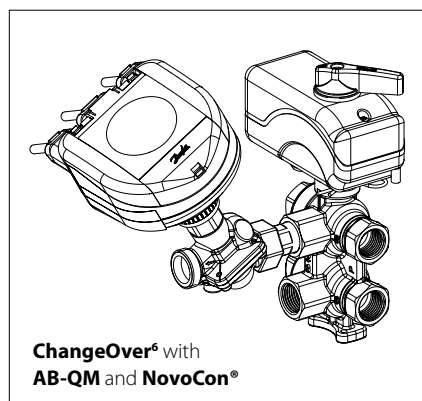
Description	Code number
ChangeOver <sup>6</sup> valve	<b>003Z3150</b>
ChangeOver <sup>6</sup> actuator	<b>003Z3155</b>
<b>OPTION</b>	
ChangeOver <sup>6</sup> valve insulation	<b>003Z3159</b>

## AB-QM

Pressure independent control valve	Maximum flow rate	Code number	Changeover <sup>6</sup> to AB-QM connector
AB-QM DN 15 LF	275 l/h	<b>003Z1252</b>	<b>003Z0232</b>
<b>OR</b>			
AB-QM DN 15	450 l/h	<b>003Z1202</b>	<b>003Z0232</b>
<b>OR</b>			
AB-QM DN 20	900 l/h	<b>003Z1203</b>	<b>Upon request</b>

## NovoCon<sup>®</sup> / AME110NL

Control valve actuator	Code number
NovoCon <sup>®</sup> Hybrid	<b>003Z8500</b>
<b>OR</b>	
AME110NL	<b>082H8057</b>



Scan QR code to  
see the ChangeOver<sup>6</sup>  
datasheet.

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