

Hydronic Balancing & Control | AB-PM

# Total control over the HVAC system for staged installation, handover and commissioning

The exceptional solution for shell & core and base building.

4

functions in one valve provides flexible flow control

## The quick-and-easy design-and-build process

# Unique differential pressure and flow limitation for individual zones



SHOPPING CENTERS



OFFICE BUILDINGS

In the construction or renovation of shopping malls and shell & core office buildings, not all HVAC installations are designed and built by the same company or at the same time. The concept of base building is that the owners design and construct the main building, while the completion of the individual shops in a mall, or offices in an office complex, including the HVAC installation, is done by the tenants.

### This presents a number of challenges

The building owner has little or no control over the HVAC system in each zone, resulting in a system that is oversized and difficult to balance. Building owners risk complaints from users about poor levels of comfort as some zones or shops will not get sufficient flow due to overflow in others. Many building owners also experience delays in the handover of a base building due to a very complicated commissioning and re-commissioning process.

### Meet AB-PM, the innovative Automatic Balancing valve

By using the AB-PM Differential Pressure Control Valve (DPCV), building owners can design and install the base of the heating and cooling system in their building before tenants move in. Installing AB-PM will ensure the building owner a reliable HVAC system and a quick-and-easy design-and-build process. With AB-PM, the building owner can easily divide the HVAC system into individual zones for each shop or office. AB-PM will automatically balance the system by providing the correct flow to each zone at full load or partial load, no matter how many terminal units are to be installed. The handover time for the base HVAC system can be very fast as less time is needed for installation and commissioning.

## Flexibility

### DPCV or PIBCV

#### Vacant zone (DPCV)

At the 1<sup>st</sup> stage, or when zones are vacant, the AB-PM is installed as DPCV ensuring design flow and differential pressure are available for the zone.

#### Multiple terminal units (DPCV)

When multiple terminal units with individual controls are installed, the AB-PM valve is used as a DPCV, ensuring proper control, flow and differential pressure across the zone.

#### Single terminal unit (PIBCV)

When only a single terminal unit is installed, the AB-PM is connected as a Pressure Independent Balancing and Control Valve (PIBCV) to enable perfect control and authority.

#### Actuator

If required, an actuator can be mounted on the AB-PM for zone control e.g. to shut-off the installation at night.



# Get satisfied tenants while saving time and effort

A HVAC system installed with Danfoss AB-PM hydronic balancing valves enables building owners to run their buildings' heating and cooling system efficiently. The pre-commissioning of the system also makes life much easier for the tenants of the individual zones, enabling them to connect their HVAC systems with less work and expense.



## Design

- Save design time
- No Kv and authority calculations
- Easy pump-sizing



## Construction

- Easy to set
- No need for commissioning – just set and forget
- Phased handovers
- Save installation and commissioning time



## Operation

- Guaranteed flow and differential pressure for tenants
- No problems from badly designed/executed tenant installations
- Unrented shops or floors do not impact other tenants
- Flow verification and easy troubleshooting

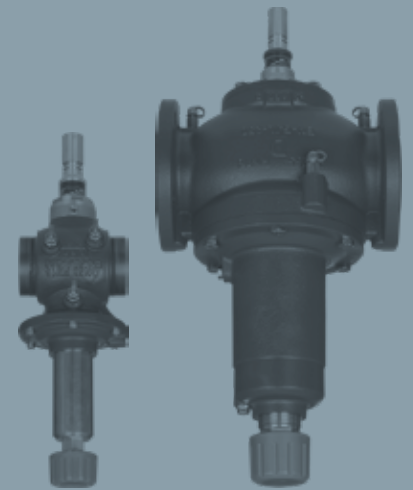


## Results

- Better comfort for tenants
- Fewer complaints
- Save money with increased energy efficiency
- Flexible design and re-design of zones and shops

# Danfoss AB-PM 6 benefits in one compact valve body

- ✓ Controls the differential pressure
- ✓ Limits the flow
- ✓ Zone control with actuator
- ✓ Flexible zone design
- ✓ Shut-off
- ✓ Flow verification



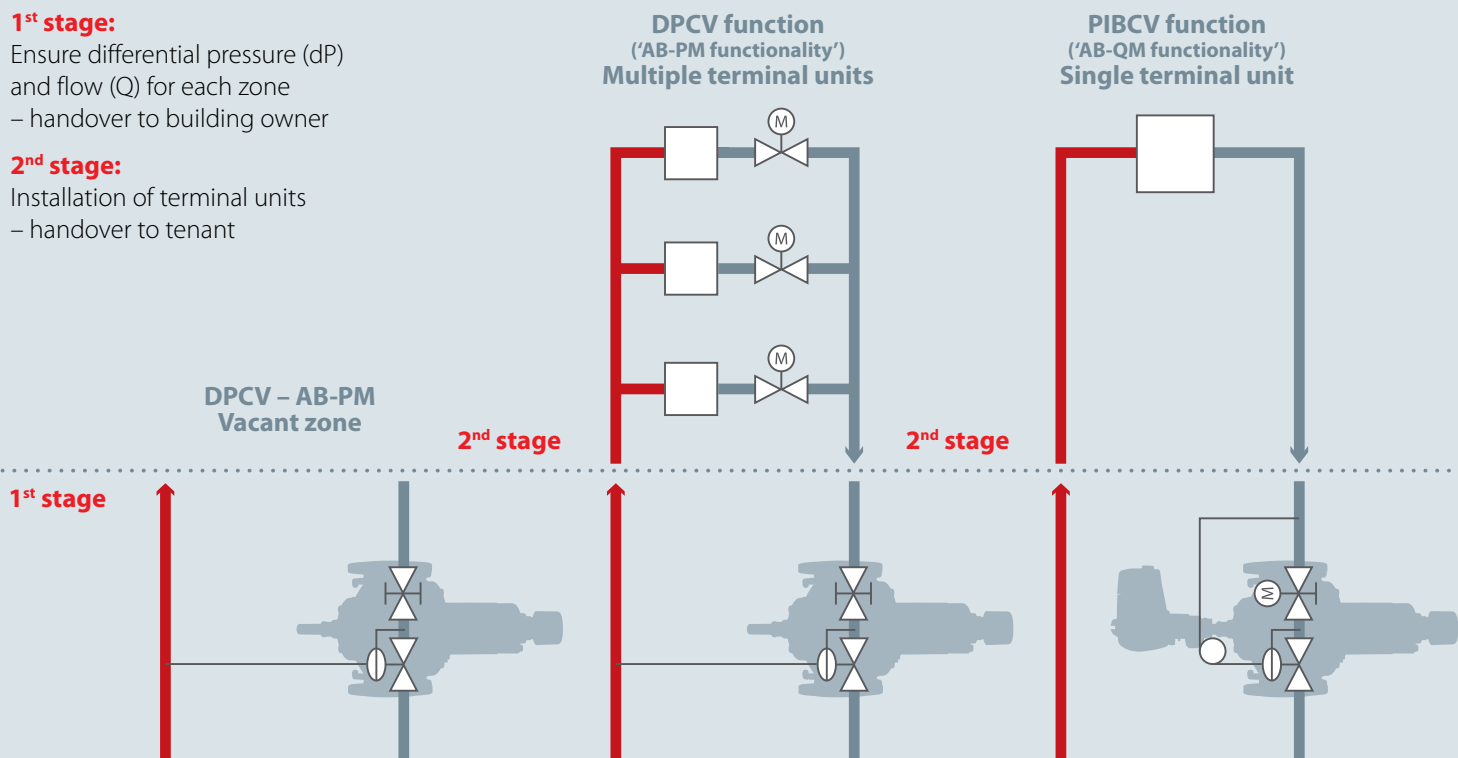
## Staged installation, handover and commissioning:

### 1<sup>st</sup> stage:

Ensure differential pressure (dP) and flow (Q) for each zone – handover to building owner

### 2<sup>nd</sup> stage:

Installation of terminal units – handover to tenant



# A wide range of sizes to suit every installation

Danfoss has the right size AB-PM valve for every job, whether the building is a new construction or a renovation project.

Type	Code No.
AB-PM HP DN10-32 *)	
AB-PM DN 40	003Z1435
AB-PM DN 50	003Z1436
AB-PM DN 65	003Z1438
AB-PM DN 80	003Z1439
AB-PM DN 100	003Z1440

\*) See datasheet AB-PM DN 10-32

## Technical specifications

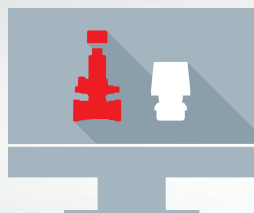
Nominal maximal pressure: 16 bar

Temperature: -10...+120

Connections: DN 10-50: External thread (ISO 288/1)  
DN 65-100: Flange (EN 1092-2)



**For more information, contact your Danfoss sales representative or nearest Danfoss office.**



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our products at  
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