

ENGINEERING
TOMORROW

Danfoss

Hydronic Balancing & Control

The **solutions** are here
The **choice is yours ...**

1114

products to support
your business's water-
based heating or
cooling applications

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Well balanced and controlled solutions

Hydronic Balancing & Control

If you are dedicated to establish indoor climate solutions that provide optimal air quality, comfortable living and/or work conditions and maximum energy efficiency, then Danfoss is your ideal partner.

You already know that the most efficient heating or cooling installations can only be realised by ensuring optimal hydronic balance and perfect temperature control. We have many years of experience and a complete range of products in this area. We supply high quality products for innovative, energy saving and easy to use solutions. Our expertise is to create more comfort for less money.

And our expertise is everywhere. Everybody involved from R&D to after sales service are highly skilled professionals offering you knowledge, experience and deep customer and application understanding.

In this brochure we present a basic overview of our many products for different applications. Each has its own special features and benefits to make your daily work easier, faster or better. Find the products you need for your projects and let us help you to become your customer's preferred partner in realizing hydronic balancing solutions.



3 reasons for choosing
Danfoss as your Hydronic Balancing & Control partner:



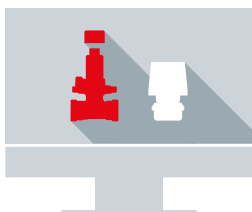
Benefit from a complete product range



Gain knowledge from our highly skilled professionals



**Feel confident about our products,
support and service**



Learn more about our products at our website:

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Manual balancing valves

Manual balancing valves provide a static, basic balancing solution for many applications. The valves limit the flow through different parts in heating, cooling and domestic hot water systems. Since manual balancing valves can not react to changing conditions the valves are recommended to be used in constant flow systems.



LENO™ MSV-BD / MSV-B / MSV-O

Danfoss LENO™ range offers the latest technology in manual balancing. To save costs for often used shut-off valves the MSV-BD, MSV-B and MSV-O valves combine both a balancing and shut-off function. For that purpose the principle design is based on a ball valve, making sure the shut-off offers 100% watertight closure of the system. Using the shut-off ball valve, which has a red/white colored closed/open indication, will not influence the settings.

Furthermore the hand wheel can temporarily be removed for easier installation in narrow spaces. The numeric presetting indications can be viewed from different angles making the commissioning easier as well. All three types of LENO™ valves offer built-in measuring nipples for 3 mm needles. In case of the MSV-BD these can even be rotated over 360° to any preferred position. The MSV-O has a fixed venturi orifice.

LENO™ MSV-S

MSV-S is a manual shut-off partner valve in the LENO™ range which can be used to close the system's return pipe in case the balancing valve is mounted in the supply pipe. It uses the same high quality ball valve and offers a high capacity drain.



MSV-F2

The MSV-F2 has a range from size DN15 up to DN 400. The flanges are according to international standards. The valves have a position indicator, a stroke limiter and the settings can be locked.

| Type | MSV-BD | MSV-B | MSV-O | MSV-S | MSV-F2 |
|------------------------------|--------------------|--------------------|--------------------|----------|-----------|
| Function | Balancing Shut-off | Balancing Shut-off | Balancing Shut-off | Shut-off | Balancing |
| Version | Thread | Thread | Thread | Thread | Flange |
| DN range | 15 – 50 | 15 –50 | 15-50 | 15 –50 | 15 - 400 |
| PN | 20 | 20 | 20 | 20 | 16/25 |
| Integrated ball valve | Yes | Yes | Yes | Yes | No |
| Measuring nipples | Rotating | Fixed | Fixed | No | Fixed |
| Drain tap | Yes | No | No | Yes | No |

Automatic balancing valves

Automatic balancing valves provide a dynamic solution for balancing of two-pipe heating systems in multi-family buildings. They are the best solution for both new build or renovation of existing systems with radiators or floor heating.

The hydronic balance is optimized under all possible loads by controlling the differential pressure. Commissioning efforts are minimum and the result is a reliable heating system with improved indoor temperature control, significant energy savings and low noise emission.



ASV & partner valves

Return pipe mounted differential pressure controllers are available with fixed setting of 10 kPa (ASV-P) or adjustable setting (ASV-PV). In case of ASV-PV the setting is simply adjusted by turning the setting scale. ASV-PV differential pressure controllers are available with different setting ranges to match any application. For high volume systems also flanged versions ASV-PV are available.

Supply pipe mounted shut-off partner valves are used to measure the differential pressure by an impulse tube connected to both valves. ASV-P and ASV-PV can be connected to ASV-M, ASV-I or ASV-BD partner valves. Flanged ASV-PV can be connected to MSV-F2 partner valves. Some partner valves can also be used for manual limitation of the maximum system flow.

| Type | ASV-PV | ASV-P | ASV-M/I/BD | MSV-F2 |
|-------------------|--|------------|------------|----------|
| Function | ΔP control | ΔP control | Shut-off | Shut-off |
| Version | Thread / Flange | Thread | Thread | Flange |
| DN range | 15 – 100 | 15 – 40 | 15 – 50 | 15 – 400 |
| ΔP Setting | <ul style="list-style-type: none"> • 5 – 25 kPa • 20 – 60 kPa • 20 – 80 kPa • 60 – 100 kPa | 10 kPa | -- | -- |

AB-PM

This compact differential pressure controller automatically balances the system and also offers other functionalities such as flow limitation and zone control. The valve is the best option for heating systems with manifolds for either radiator or floor heating in each apartment. The AB-PM is installed in the flow pipe and is connected to the return pipe with either an impulse tube adapter or a partner valve.



| Type | AB-PM | AB-PM HP | MSV-S | TWA-Z / ABN A5 |
|-----------------|---|---|---|--|
| Function | <ul style="list-style-type: none"> • ΔP control • Flow limitation • Zone control | <ul style="list-style-type: none"> • ΔP control • Flow limitation • Zone control | <ul style="list-style-type: none"> • Shut-off • Impulse tube connection | <ul style="list-style-type: none"> • Thermal on/off control |
| Version | Thread | Thread | Thread | 24 V / 230 V |
| DN range | 15 – 25 | 15 – 25 | 15 – 25 | -- |
| Settings | 300 – 1200 l/h at ΔP = 10 kPa | 300 – 1200 l/h at ΔP = 20 kPa | Open – closed | -- |