

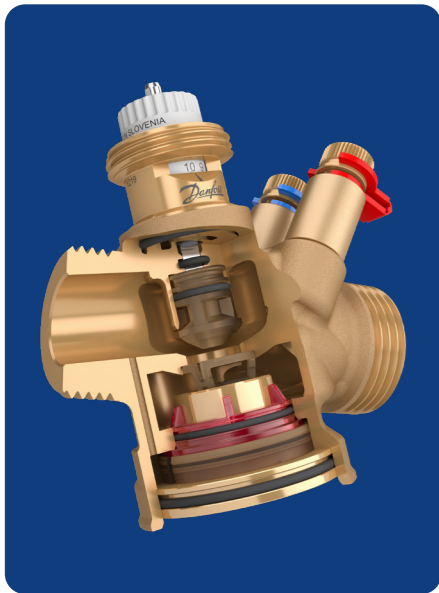


Danfoss

Even Flow

News from Danfoss Building Solutions
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BACS Efficiency Class A: Why dynamic balancing matters

BACS Efficiency Class A is increasingly recognised as the target for high-performance HVAC control. Yet advanced control strategies can only deliver their intended performance if the hydronic system stays balanced and stable as loads change across the building.

In brief

As BS EN 15232 transitions to ISO 52120-1, BACS Efficiency Class A is increasingly used as the reference point for high-energy-performance building automation and control (BACS). For HVAC engineers and consultants, the key question is practical: can the water side stay stable and controllable at part load—when terminal units open/close and differential pressures fluctuate? That is exactly where “true dynamic” hydronic balancing becomes critical.



What is BACS Efficiency Class A?

BACS Efficiency Class A is the highest performance level for building automation and control, as defined in BS EN 15232 and its successor ISO 52120-1. The standards classify BACS from Class D (lowest) to Class A (highest) based on the functionality and quality of control. In HVAC applications, Class A aligns with advanced, demand-based control (communication-enabled, modulating control where applicable) and—with the latest clarification of “balanced dynamically”—requires hydronic distribution that remains stable under both design and partial flow conditions.

What Class A can deliver

- Significant energy savings: Moving from Class C to Class A is associated with major reductions in energy use — up to 39% in offices and up to 49% in shopping centres

Better comfort at part load: Buildings spend most of their time away from design conditions. Class A performance is about keeping rooms stable and controllable during partial load—where poor hydronic balance often shows up as hot/cold spots, noise, and complaints

Lower emissions at scale: The BCIA estimates that requiring Class A BACS in commercial and public buildings with HVAC outputs over 180 kW could reduce emissions by 39.6 MtCO₂e by 2040

Lower running costs: Over the same period, the BCIA projects potential savings of £16.9bn in energy bills—showing why controls upgrades are increasingly seen as a high-ROI retrofit lever



Where Danfoss fits: dynamic hydronic balancing in practice

For Class A-aligned performance, the control loop cannot be considered in isolation. If differential pressure varies widely as branches open and close, control valves lose authority, terminal units hunt, and setpoints drift—especially at part load. “True dynamic” balancing addresses this by automatically maintaining stable differential pressure across the room/terminal-unit control valve at both design and partial flow conditions, helping preserve controllability, comfort and system efficiency.

Typical building-side solutions include:

- AB-QM 4.0 pressure independent control valves (PICVs) for accurate flow control and automatic balancing on coils/terminal unit
- NovoCon® S digital actuators for higher-accuracy control, faster commissioning and BMS connectivity
- RA-DV / RAS-B2 dynamic radiator valves to help maintain stable differential pressure and true dynamic balancing per emitter

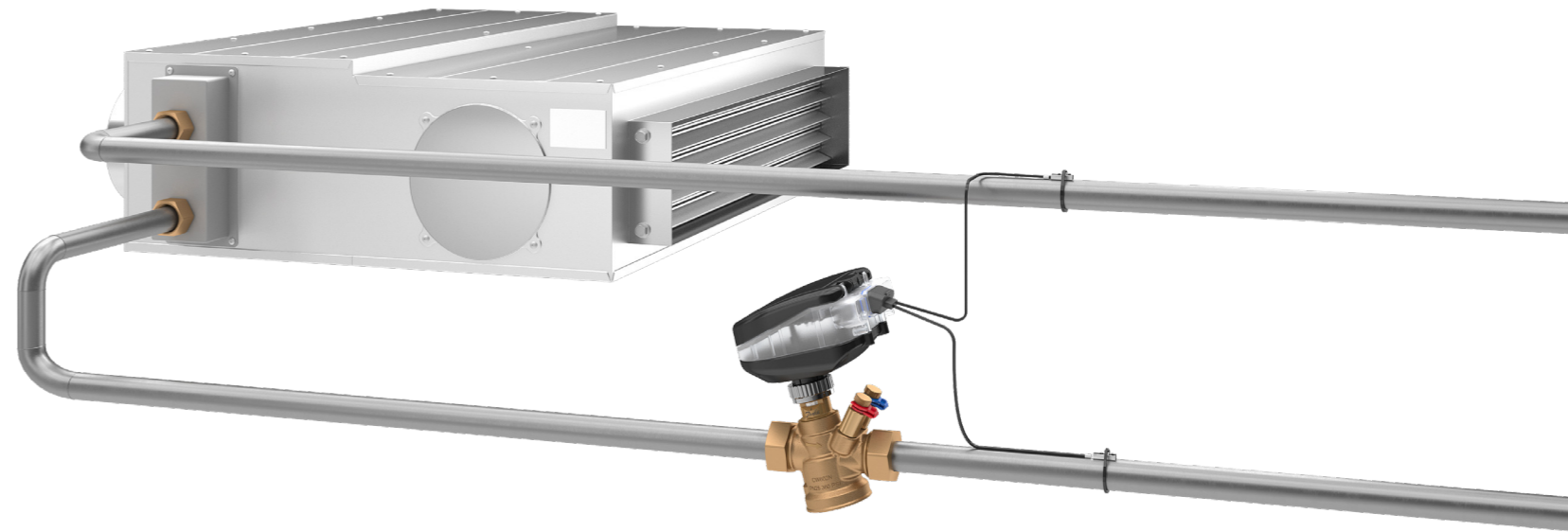
if you’re aiming for Class A performance, you need control strategies that work in real-world part-load operation—and the hydronic side must be able to keep up. With the right combination of dynamic balancing and demand-based control, building owners can cut waste, protect comfort, and create a stronger baseline for wider decarbonisation upgrades.

Explore more

For further reading, explore these Danfoss resources:

Whitepaper: [How to achieve 'Class A' BACS with hydronic balancing](#)

eBrochure: [AB-QM PICVs and actuators](#)



Product Spotlight



RAS-B2 Straight: Completing the pressure independent TRV range

Poor hydronic balance is still one of the most common root causes behind uneven room temperatures, noisy radiators and unnecessary energy use—especially in 2 pipe heating systems where differential pressure varies as valves open and close.



Danfoss is expanding the RAS B2 Dynamic Valve™ portfolio with a new straight-body option, giving engineers and installers more flexibility when selecting valve geometry on site.

What's new

RAS B2 Straight introduces two new 15 mm straight valve sets for the UK market, designed for optimal performance in 2 pipe heating systems. The straight format complements the existing angled options, making it easier to specify the right configuration for radiator connections and pipework layouts—particularly in tight installs or where straight geometry is preferred.

Why it matters for system performance

Unlike conventional TRVs that primarily act as a temperature control valve (with any balancing typically attempted on the return), RAS B2 is pressure independent. A built in differential pressure regulator maintains a constant pressure drop across the control section, helping to keep radiator flow stable as system conditions change. In practice, this supports more consistent comfort at part load, helps reduce the

likelihood of noise, and can simplify commissioning because maximum flow is set on the valve.

Availability

The RAS B2 Straight TRVs are available now in two 15 mm pack options:

- Dynamic Combi Pack (15 mm) – code 013G7666
- Dynamic Radiator Pack (15 mm) – code 013G7668

Key features (RAS-B2 Straight)

- Pressure independent design to help maintain stable radiator flow as differential pressure varies
- Integrated flow limiting with presetting to set maximum flow at the valve (supporting faster, repeatable commissioning)
- Built in differential pressure regulator maintaining Δp at 0.1 bar across the valve

RAS-B2 - Now available in Straight & Angled Versions

Show me more



Insight



InstallerSHOW 2026: Demos, dancing and real trade talk

Danfoss will be on **Stand 5C28** at the NEC Birmingham from 23-25 June with plenty to see, hear and try for yourself.

Live Podcast Studio on the stand

Expect real-world conversations with installers and industry experts—practical, honest and focused on the challenges you face day to day. Sessions will cover topics such as making the move into heat pump installations, avoiding costly on-site bodes, and growing your business while staying ahead of evolving regulations, alongside discussions on supporting mental health and getting started in the trade.

Hands-on product demos

Get up close with Danfoss' latest solutions, including RAX Living designer TRVs and the self-balancing RAS B2, plus smart heating controls Ally and Icon2—helping users manage heating remotely from virtually anywhere. If you're involved in larger commercial projects,

our PICV range will also be on display, supporting hydronic balancing, simpler commissioning and stable temperature control across variable loads.

Ask us anything

Got questions? The Danfoss team will be on hand throughout the show to demonstrate how these products can improve efficiency, simplify installation and support compliance across a wide range of projects.

Silent disco from 3pm

And when the day winds down, it's time to switch channels—pick your playlist and enjoy the silent disco from 3pm each day.

Headline sponsor: CIPHE's Monday night member event (eve of InstallerSHOW)

We're proud to be headline sponsor of the CIPHE Monday night member event, taking place at the Lake Lounge, NEC Birmingham, on the eve of InstallerSHOW 2026.

From 7pm onwards, it'll be a chance for CIPHE members, delegates from the World Plumbing Council, and industry media to get together ahead of the show for an evening of networking and conversation.

Interested in attending? The event is open to CIPHE member installers and plumbers, with registration [here](#).

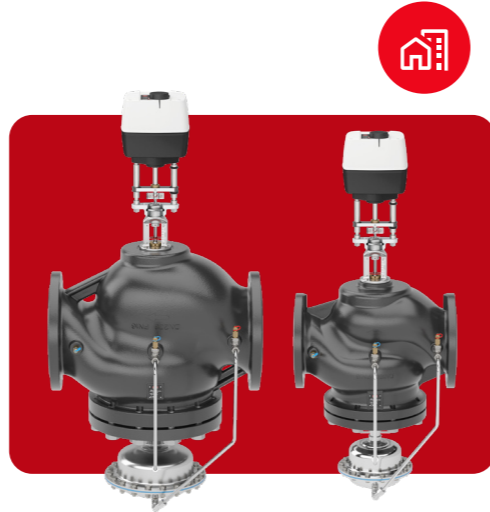
Not already a member? Now might be a good time to take a look at www.ciphe.org.uk.



Product Spotlight

Optimised Range AB-QM DN125-250: PICVs with higher flow rates

The optimised design, featuring automatic hydraulic balancing, achieves higher flow rates while ensuring superior control accuracy, energy efficiency, and operational reliability. This equips the new generation AB-QM with a future-proof solution for modern HVAC applications demanding enhanced performance.

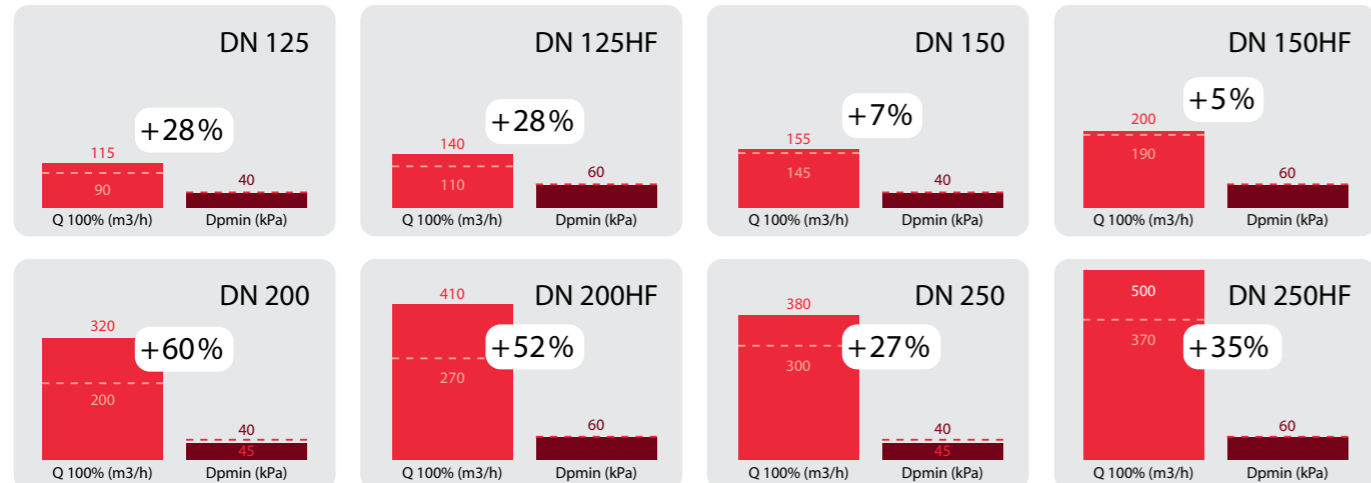


Higher flow rate

The new series features an optimised design that allows for higher volume flows without changing the nominal size, maintaining a compact form. This makes it particularly

well-suited for modern heating and cooling systems that demand enhanced performance.

Comparative Performance Enhancements – New vs. Old



Smaller Actuators – NovoCon® L & AME 655 cover DN 125 to DN 250

Thanks to the optimised valve design, more compact actuators can be used, covering the entire portfolio from DN 125 to DN 250. An optional feature ensures the valve reaches a defined end position (open/closed) in the event of a fault, thereby increasing operational reliability.



Lower starting pressure Δp_{min}

The standard version operates pressure-independently at a reduced minimum differential pressure, ensuring stable control even when pressure reserves are low. This enables optimal pump design and improves partial load operation.

Soft-sealing valve cone (Leakage rate IV according to BS EN ISO 60534)

The soft-sealing valve cone guarantees exceptionally tight closure of the control valve, achieving low internal leakage in compliance with Class IV of BS EN ISO 60534. This design effectively prevents unwanted residual flows and enhances precise system control

8 bar maximum differential pressure

Engineered to withstand a maximum differential pressure of 8 bar, the valve maintains full functionality even under high-pressure conditions. This design delivers exceptional operational reliability and flexibility, making it ideal for large or complex systems.

Replaceable packing gland (on control valve)

The packing gland is designed for easy replacement during maintenance, eliminating the need to replace the entire valve. This feature reduces service costs, minimizes downtime, and extends the service life of the fitting.

Insight



Simplifying District Heating: Pre-assembled substation

District heating projects are under pressure to deliver more, with less complexity. From design and approval through to installation and commissioning, every extra variation can slow progress, introduce risk and make performance harder to predict..

For this reason pre-assembled substations are attracting more attention. By taking a more modular, standardised approach, project teams can reduce complexity early, simplify decision-making and create a smoother path from specification to operation.

A simpler route from design to delivery

A modular solution such as DSP MOD@ is designed to help make that possible. By combining key components into a coordinated, pre-engineered substation, it supports a faster, more straightforward route through specification, approval and delivery. Instead of managing a long list of separate choices and interfaces, consultants and project teams can work from a more standardised platform that still offers the flexibility needed for real project requirements. That can help save time during planning, make approvals easier to manage and reduce complexity before the station even reaches site.

Built for efficient system performance

DSP MOD@ is designed not only to simplify delivery, but also to support long-term system performance by integrating key components such as the ECL Comfort 310 controller for weather compensation, data logging and alarm monitoring, alongside Micro Plate™ heat exchangers engineered to enhance heat transfer, optimise flow distribution and minimise pressure loss.

The platform has been designed to meet more than 90% of typical district heating network technical connection

requirements, helping engineers balance efficiency, reliability and end-user comfort in a single pre-assembled solution.

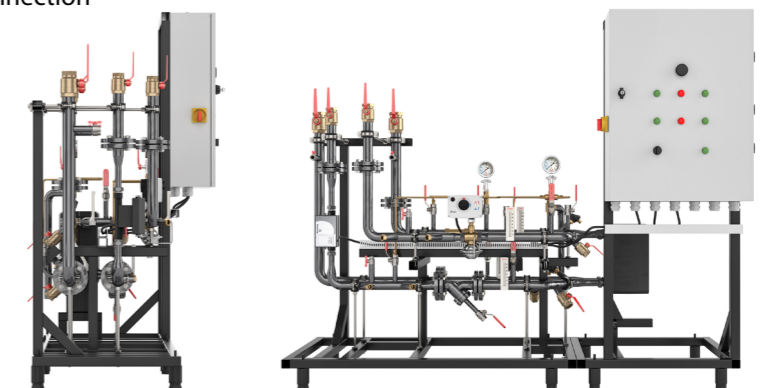
Supporting optimisation beyond commissioning

That matters because district heating performance is shaped by more than the hardware alone. Ongoing visibility and optimisation are increasingly important, particularly when operators are looking to improve network efficiency and tackle return temperature. DSP MOD@ works with Leanheat® Monitoring as part of Danfoss' wider digital portfolio, helping operators gain better visibility of system behaviour and identify opportunities to optimise performance over time. Taking this approach can help lower return temperature in district heating networks by 1–2°C.

A practical approach to modern district heating

For project teams looking to reduce complexity without compromising control or efficiency, pre-assembled substations offer a practical way forward. They help simplify the journey from design to delivery, while supporting the kind of stable, efficient operation that modern district heating networks increasingly demand.

Learn more: Explore [DSP MOD@](#) and see how a pre-engineered, modular substation platform can support modern district heating projects.



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