

NovoCon® S Digital Actuator

Connect hydronics and
Building Automation **and**
save time in every phase

4-in-1

Actuator, Bus
communication
device, flow indicator,
and data logger.



Connect the best of HVAC with tomorrow's benefits. **Today.**

Danfoss introduces the digital actuator NovoCon® S, a true revolution in hydronic balancing and control. The actuator is tailor made to fit the AB-QM – the market-leading pressure independent balancing and control valve for more than a decade – creating a perfect connection between superior hydronic performance and Building Automation. This gives you complete control and access to tomorrow's HVAC benefits today.

Together.

The AB-QM valve and the NovoCon® S actuator unleash ground-breaking features and possibilities. NovoCon® S adds value throughout a building's lifetime: during installation and commissioning, system integration, operation, and maintenance. The digital actuator connects your heating or cooling system to the Building Management Systems (BMS) and adds new levels of hydronic balancing and control and remote functionality.

The results are, for example: time savings during installation, remote commissioning and fine tuning, access to system data and remote identification of valve blockages or installation errors. In essence the digital actuator replaces multiple on-site visits with remote control of the system from the comfort of your office.

The new era of hydronic balancing and control begins with the NovoCon® S actuator.

NovoCon® S

Four-in-one actuator

Actuator

NovoCon® is a highly accurate multi-functional actuator designed for use with AB-QM in sizes from DN 10-32. It delivers best-in-class hydronic performance in, e.g. fan coil units, chilled beams, and radiant panels.

Flow indicator

NovoCon® functions as a flow indicator thanks to the high position accuracy of the actuator and the pressure independent and linear characteristics of the AB-QM valve.



Bus communication device

With the NovoCon® it is now possible to connect hydronics to Building Automation. All setting and control is possible via Fieldbus and requires only minimal data points.

Data logger*

The NovoCon® facilitates collection and storage of data that can be used to benchmark building performance over time, and to identify best practice in energy consumption behavior.

Best in class hydronic performance
combined with BMS connectivity



Remote

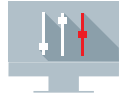
functionality is possible via Building Automation connectivity.

Enable the power of **truly connected** Building Automation

Most modern buildings have some sort of automated communication across units, floors, and rooms for real-time control and overview. This goes for lighting, security, energy, etc. Until now, hydronic balancing and control has not been part of Building Automation. This changes with NovoCon®.

The digital actuator enables BMS connection via Fieldbus, allowing information to be collected from each individual actuator. Connecting NovoCon® improves building management in two significant ways. It activates remote features, such as commissioning, flow indication, and flushing – all at the click of a mouse. It also enables status feedback and alarms for instant problem solving in the system, and data logging helps you uncover energy consumption potential and behaviour.

Changing the future of HVAC today



Remote features

Imagine having complete control of a heating or cooling system directly through a computer screen. Remote functionality is a core feature of connecting the AB-QM valve and NovoCon® to a Building Management System. Remote commissioning, flushing, and control not only save valuable time in different phases of the installation and commissioning process – they also eliminate your need for a technician or engineer to perform standard service checks or carry out intrusive searches for hard to find faults in dark ceilings.



From data to energy savings

Data is at the very heart of change. Unless we have knowledge of the past, it is almost impossible to qualify the decisions of the future. NovoCon® will excel in data logging and thus offer new points of analysis. Benchmark per floor, over time, or predict future behavior within the system or in the consumption behavior. With data at hand, it will be possible to gain an in-depth and genuine understanding of the building dynamics and to identify points of optimization.



A true winner in **the long run**

In terms of performance and total cost of ownership, the NovoCon® digital actuator is a true winner. The savings come from an abundance of features: a highly efficient installation process with fewer cables and wiring, the efficiency of remote pre-setting and function testing before hand-over, the ease of remote monitoring and maintenance, system error detection – and not least through identification of energy optimizations. Before, during and after the installation, the NovoCon® and the AB-QM valve are truly best-in-class.

NovoCon® offers value **for everyone**

During all typical phases of a building's lifetime, the NovoCon® adds significant value and thus offers the benefits of tomorrow's engineering, today.

1 click

All it takes to flush
hundreds of AB-QM
valves from the
comfort of an office.

Specifying

Build **tomorrow's business** on innovation

When planning and scoping a new build or a large renovation project, total cost of ownership is a main driver. The durability, performance and quality of units, platforms and hardware must be considered when totalling up the best and worst case scenarios in this phase of a HVAC project.

In both the short and long run, NovoCon® and the market-leading AB-QM valve excel in hydronic performance and contribute to lower total cost of ownership.

Your customers save time and money on:

- An efficient installation, commissioning, and hand-over process
- Superior hydronic balancing and control
- Remote maintenance and error detection in the system by means of alarms
- Easy day-to-day operation and access to valuable data

Installation and commissioning

Time saved in **every step**

Timing is everything during installation and commissioning. The normal procedure during commissioning is to assemble the valves, flush and fill the system, then preset valves and add the actuators. If there is air in the system, you have to fully open all valves, i.e. remove the actuator, change valve setting manually, flush and clear branches, then return to each valve and preset design flow manually and refit actuator again.

This time-consuming routine is a thing of the past.

With the NovoCon[®], all this is done in reduced time:

- Fit the valve and the actuator at the same time
- No pre-setting required at the valve
- Pre-fabricated plug-in cables simplify and speed-up installation
- Ceilings can be closed immediately after receiving visual feedback from the actuator
- No need to visit the FCU or to remove the actuator
- Hundreds of valves can be fully opened for flushing with a single mouse click
- After flushing, valves are pre-set again with just one mouse click

System integration

Connect the final piece to Building Automation

With NovoCon[®], the connection is established via Fieldbus, which significantly reduces the amounts of data points. This reduces programming costs and it minimizes both the risk of system errors and the total energy consumption in the system.

The advantages are many:

- Set and control via Fieldbus
- Monitor multiple functions and alarms in daily management
- Automatic addressing, no need to use DIP switches
- Receive data for analysis and benchmark building dynamics
- Automatic baud-rate detection

Fewer wires Less cables **No hassle**

NovoCon[®] uses Fieldbus cables with pre-fabricated plugs for daisy chain connection. You do not need multiple wires from the controller to each actuator, which will save money as each connected cable adds cost to the project.

Pre-fabricated plugs and daisy-chain connection result in:

- Faster and simpler installation
- Reduced miswiring risk
- Smaller cable trays needed
- Reduced fire risk

Wrenches, ladders, and flashlights are no longer required to perform basic tasks when maintaining the heating or cooling system.

A computer and a mouse is really all you need.



Building management

Daily operation from the comfort of an office

NovoCon® provides intelligent feedback about the system and various types of alarms via Fieldbus. This makes daily operation a task that can be performed from the office. The digital actuator actively shows the exact location of potential problem areas thus allowing you to take the appropriate action directly from a computer.

Maintenance and potential troubleshooting is normally a time consuming affair. The maintenance staff manually checks the valves and if they encounter faults, they often need to involve a HVAC engineer. The engineer then spends time and resources to identify the fault, which means opening ceilings and climbing ladders while disturbing users in the building.

In daily operation, BMS connectivity means:

- Remote commissioning
- Remote monitoring and maintenance
- Intrinsic alarms
- Identification of blockage/valve leakage by adding temperature sensors
- Fewer site visits
- Insight in historical data
- Predictive maintenance

Long term operation

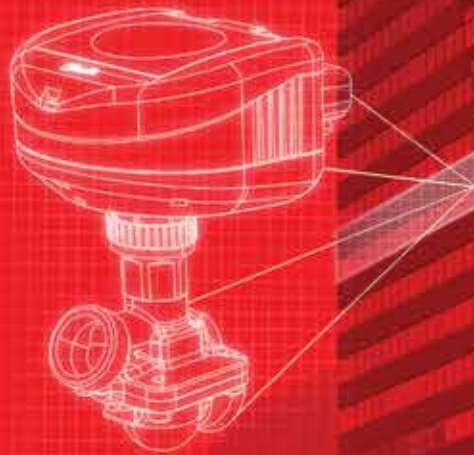
The benefits of **tomorrow**

Today, data plays an increasingly important role in the optimization of a building's energy management. Data makes it possible to identify irregularities in both system and energy consumption behavior. With the proper data at hand, it is possible to analyze and benchmark the building's performance over time and ultimately save time and energy by correcting flaws and incorrect use of the heating or cooling system.

NovoCon® stores status information in data files, which can be used for benchmarking in the building management process.

NovoCon® data logging equals:

- Compare cooling and heating demands as well as peaks in usage
- Evaluate design flow settings after installation – and change them remotely if necessary
- Independent data evaluation available remotely
- Regular downloads at off-peak times
- Target energy saving areas



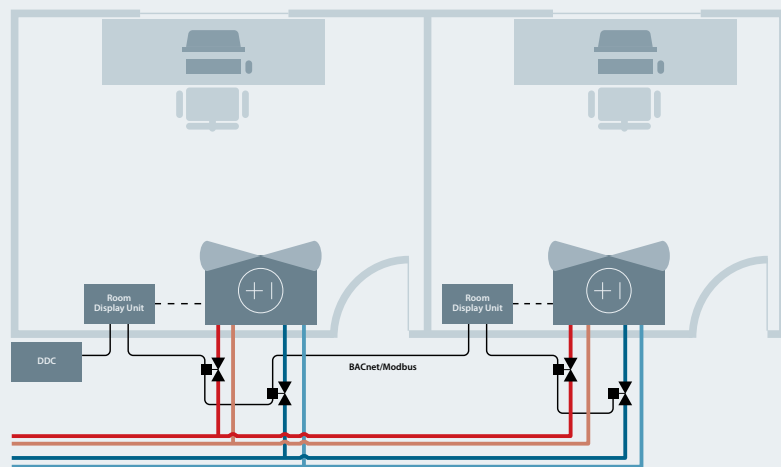
True digital or hybrid ... the **choice is yours**

The NovoCon® actuator is first and foremost a digital actuator, but it is also available in a hybrid version for use in buildings where a custom-made solution is required. The hybrid actuator offers control via Fieldbus or 0-10V control signal and is especially useful in buildings where the existing system requires, e.g. an analog control signal. It comes with most of the same features as the digital version, such as superior accuracy, remote functionality and flow indication – all of which offer significant time and energy savings.

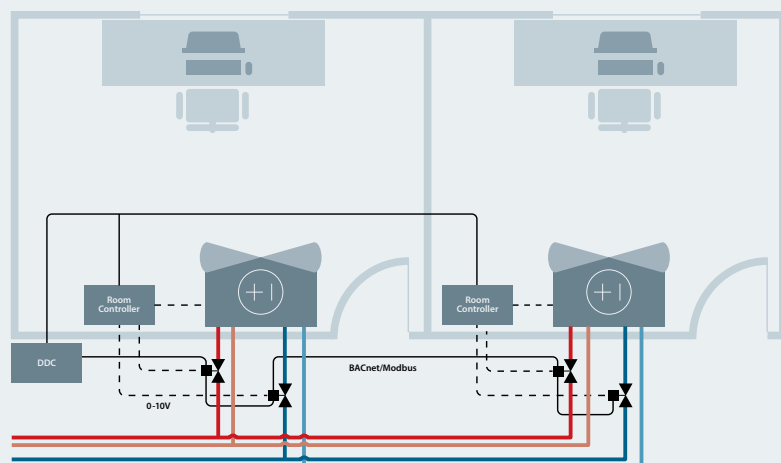
The hybrid version offers:

- Compatibility with traditional system architecture and controllers (retro-fit)
- Possibility to use local control loop instead of centralized control via Fieldbus

NovoCon® S Digital application



NovoCon® S Hybrid application



NovoCon® S

- Configuration via Fieldbus
- BACnet MS/TP and Modbus RTU*
- 0-10V flow control with Hybrid version
- Flow indication
- Multiple alarms
- Auto MAC addressing
- Auto baud rate detection
- Linear, log and alpha setting
- Pre-fabricated plug-in halogen free cables
- Protection class IP54
- Power Supply 24V AC or DC

* available by the end of 2015



Easy to understand. LED status lights offer a quick overview of actuator and system performance.



NovoCon® connects the AB-QM valve to the Building Management System.



Easy daisy-chain connection due to pre-fabricated plug-in cables.



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 NovoCon®, the AB-QM valve or the Danfoss organization, please visit our website at:

novocon.com



The NovoCon® S movie

Scan the QR code and see how we connect experience and innovation.

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