

Hydronic Balancing and Control | NovoCon® digital IoT actuators

## Connectivity and data integration for all hydronic HVAC applications

Danfoss NovoCon® S was the first of its kind digital actuator for innovative IoT HVAC solutions on the market. It accurately controls design flows through AB-QM and AB-QM 4.0 Pressure Independent Control Valves (PICVs) for Terminal Units. Besides that it provides BMS systems with real-time data via BACnet MS/TP or Modbus RTU bus-communication protocols.

Now we extend the portfolio with NovoCon® M, L and XL actuators. These actuators fit our AB-QM valves for high flow hydronic HVAC applications in DN 40 up to DN 250 as used for e.g. Air Handling Units (AHUs), chillers and district cooling connections.

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Hydronic HVAC data parameters possible to exchange with a Building Management System (BMS)



# Engineering HVAC 4.0 for smart buildings

Digitalization is changing the way we live, work and interact. As result it is also changing the way HVAC systems are controlled. The ongoing development of smart buildings is changing the heating and/or cooling system requirements in buildings as well. With NovoCon® S, we have set the trend for using digital, connected, HVAC actuators. NovoCon® actuators provide high-accuracy control and exchange valuable data with a BMS system via BACnet or Modbus bus communication. This enables IoT driven, energy efficient solutions. The NovoCon® S actuators are used for AB-QM PICVs in DN 15 - DN 32 to control design flows between 20-4,000 l/h through terminal units.

Danfoss NovoCon® M, L and XL are our newest digital IoT actuators. They are designed for high flow AB-QM PICVs in DN 40 up to DN 250 to control design flows between 3-370 m³/h. The series of NovoCon® actuators expands the usability of digital actuators to cover all main hydronic HVAC applications. This allows high-accuracy control of, and data exchange to a BMS from, Air Handling Units (AHUs), chillers and other high flow hydronic applications.



Series of Danfoss NovoCon® digital IoT actuators for AB-QM PICVs

## NovoCon® innovative 4-in-1 digital IoT actuator for smart building solutions

### Accurate flow control

- Step motor with >1,000 steps for open <-> close valve
- Linear characteristic at different differential pressures and loads
- Best performance room temperature control
- Possibility to indicate flow, power and energy consumption
- Accurate pressure and flow measuring via PFM 1000 measuring instrument on Android or iOS mobile devices

### I/O device

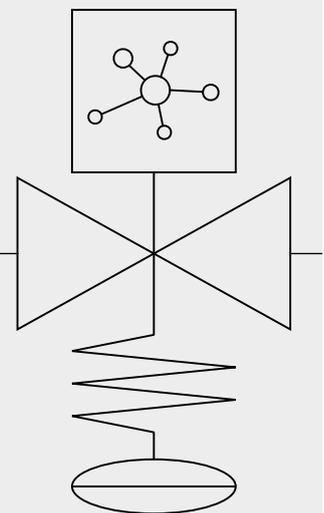
- Analogue Inputs: 2 or 3x ΩI for Pt1000, NTC (°C/°F/Ω) + 1x AI (V/mA)
- For temperature sensors, humidity sensors or pressure switches
- Analogue outputs: - 1x AO (0-10V)
- For Variable Speed Drive (VSD), damper actuator, pump or fan
- Multiple data points on one bus
- Enables sequenced change-over in 4-pipe heating and cooling systems

### Bus actuator

- High-accuracy digital actuator and hydronic flow control
- For BACnet MS/TP or Modbus RTU bus communication
- Bi-directional communication and data exchange with BMS
- Auto baud rate detection and MAC addressing
- Fits AB-QM DN 15LF - 250HF for 20 - 370,000 l/h
- Easy configuration with NovoCon® configuration tool
- Remote commissioning, design flow setting, flushing and alarming
- Operation status reporting

### Energy manager

- Energy monitoring for energy consumption analyses, benchmark and problem solving
- Energy management via DDC controller with Delta T or return temperature limitation
- Energy management as standalone Delta T or return temperature controller
- Energy cost allocation as alternative for flow and energy meters
- BREEAM credits (Ene 02a)
- Enables continuous commissioning



### Danfoss A/S

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