How smart are buildings?
4-in-1

Bus actuator
a highly accurate actuator for AB-QM DN10-32 with BACnet and ModBus

I/O device
possible to connect other devices to it

Energy allocator
It indicate flow and energy and offers other intelligent features

Controller
Power and temperature control options
Remote commissioning

- Design flow presetting
- Flushing of system
- Alarms and warnings

1h/valve time saving

Digital PRE-SET

NO MANUAL PRE-SET
Remote design flow setting

Example:
Designflow: 225 [l/h]
Maximum flow AB-QM DN15: 450 [l/h]

Limitation stroke: \[
\frac{\text{Designflow}}{\text{Maximum flow}} \times 100 \%\]
Remote flushing

60 min.
Time to close ceiling

**Traditional**
- Install AB-QM
- Fill the system
- Flush
- De-air
- Pre-set
- Install actuator
- Close the ceiling

**NovoCon**
- Install Novocon + AB-QM
- Close the ceiling

Afterwards by BMS
- Flush
- De-air
- Flow setting

1 month faster handover
No project hand over delays

Traditional

Peak workload before handover

NovoCon®

Evenly distributed workload
Plug&Play integration

- BACnet & Modbus in single product
- Auto baud rate detection
- Auto MAC addressing
- Auto Parity detection
- Daisy chaining & plug in cables
- Configuration tool

0.5h/valve
vs other bus actuators
NovoCon I/O: connect to...

Temperature sensors

Window sensors

Control 6-way valve

Dew-point sensors

Room set point

Control FCU fan speed

Available:
- Analog Output
- Analog Input
- 2x resistance input
Eliminate local room controllers

**Conventional**

**NovoCon**

**Building Automation System**

120 EUR/terminal unit
NovoCon I/O FCU 4-pipe example

Window contact

Room temperature and setpoint

Key card reader contact

Floor DDC

BACnet ms tp

Output from Controller
Input to Controller
PT1000 input to Controller
RS485

120 EUR/FCU
saving on room controller

Window contact

Room temperature and setpoint

Key card reader contact

Floor DDC

BACnet ms tp

V Output from NovoCon
0-4mA Input to NovoCon
PT1000 Input to NovoCon
RS485

Key card reader contact

Room temperature and setpoint

Floor DDC

BACnet ms tp

V Output from NovoCon
0-4mA Input to NovoCon
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Key card reader contact

Room temperature and setpoint

Floor DDC

BACnet ms tp
Office space flexibility: traditionally

- Rewiring is needed
- Some new controllers need to be added to new zones
Office space flexibility: NovoCon

- Minor reprogramming is needed
- Sensors need to be added in new zones
Energy management: is it needed?

• In typical building **data for energy consumption of specific HVAC devices is not available**! What you cannot measure you cannot save!

• Even buildings with PIBCV sometimes run **part-time in Low Delta T regime** due to oversized coils, clogged coils & filters, wrong fan speed settings, poor design flow commissioning...

![Graph showing energy consumption](source: Greensense)
Flow indication

- Flow is based valve opening measurement
- NovoCon position accuracy ±0.05mm
- AB-QM is linear and pressure independent
Energy data
- Supply temperature
- Return temperature
- Flow rate*
- Power*
- Energy counter*

*not MID approved

Energy management
- Delta T Manager
- Power Manager

>20% energy saving with energy monitoring and optimization
Energy Data

BILLING
Building level

- High accuracy MID certified data
- Sonometer 30/31 DN15-1200

10% energy saving potential with energy monitoring

MANAGEMENT
Terminal unit

- Real time localized data
- NovoCon + AB-QM
Delta T Manager: Min Delta T limitation

- Limits Delta T between supply and return to selected value
- Prevents overflows also at oversized coils, clogged coils & filters, wrong fan speed settings, poor design flow commissioning...

10% energy saving compared to PIBC V without ΔT mng on pumping and chiller energy
Predictive Maintenance Data

- Valve and actuator remaining **lifetime prediction** based on running cycles.
- **Warning valve leakage** indicating flushing and water quality maintenance is needed.
- **Too high/too low voltage warning** indicate challenges in electrical system.
- **Monitoring of ∆T** indicates filters or coils require cleaning.
- **Integrated energy counter** shows too high/too low energy consumption.
- Alarm if actuator is **not mounted** on the valve.

Reduced downtime and complaints with predictive maintenance
Best hydronic performance meets building automation

- Smart automation system for **comparable total investment**
- **Remote** commissioning and monitoring saves your time
- **Data** for energy management and predictive maintenance
- **10% energy savings** using dT controller solution
NovoCon reference projects

- 30+ buildings globally
  - Orion, Brazil
  - Liebherr, Deggendorf
  - Corthouse, Breda
  - Novartis, Basel
  - Sony Center, Berlin
  - Office building, Katowice
  - Business center, Gdansk
  - Delfese Poort, Roterdam
  - Altus, Katowice
  - WTC Toren i Amsterdam, Netherlands
  - The International Quarter TIQ Stratford, UK
  - Lambeth Civic Centre, London, UK
  - Orion, Brazil
  - Marsa al Seef, Dubai