

- Nominal voltage AC/DC 24 V
- Control communicative
- Communication via BACnet MS/TP, Modbus RTU, Belimo-MP-Bus or conventional control
- Conversion of active sensor signals and switching contacts



5-year warranty



## Technical data

|                               |                                |   |
|-------------------------------|--------------------------------|---|
| <b>Electrical data</b>        | Nominal voltage                | AC/DC 24 V  |
|                               | Nominal voltage frequency      | 50/60 Hz  |
|                               | Power consumption in operation | 8.5 W   |
| <b>Data bus communication</b> | Communicative control          | BACnet MS/TP<br>MP-Bus<br>Modbus RTU  |
|                               | Number of nodes                | Max. 32 (without repeater)  |
| <b>Functional data</b>        | Valve size [mm]                | 2" [50]   |
|                               | Operating range Y              | 2...10 V  |
|                               | Operating range Y note         | Hybrid via 2...10 V   |
|                               | Input Impedance                | 100 kΩ (0.1 mA), 500 Ω  |
|                               | Options positioning signal     | VDC variable  |
|                               | Position feedback U            | 2...10 V  |
|                               | Position feedback U variable   | VDC variable  |
|                               | Running Time (Motor)           | 90 s  |
|                               | Sound power level Motor        | 45 dB(A)  |
|                               | Control accuracy               | ±5%   |
|                               | Min. controllable flow         | 1% of V'nom   |
|                               | Fluid                          | chilled or hot water, up to 60% glycol max<br>(open loop/steam not allowed) |
|                               | Fluid Temp Range (water)       | 14...250°F [-10...120°C]  |
|                               | Close-off pressure Δps         | 200 psi   |
|                               | Differential Pressure Range    | 5...50 psi or 1...50 psi see flow reductions chart<br>in tech doc           |
|                               | Flow characteristic            | equal percentage or linear  |
|                               | Body Pressure Rating           | 360 psi   |
|                               | GPM                            | 76.1  |
|                               | Servicing                      | maintenance-free  |
|                               | Manual override                | external push button  |
| <b>Flow measurement</b>       | Measuring accuracy flow        | ±2%*  |
|                               | Measurement Repeatability      | ±0.5% (Flow)  |
|                               | Sensor Technology              | Ultrasonic with glycol and temperature<br>compensation                      |
| <b>Safety data</b>            | Degree of protection IEC/EN    | IP54  |
|                               | Degree of protection NEMA/UL   | NEMA 2  |

|                    |                     |  |
|--------------------|---------------------|--|
| <b>Safety data</b> | Enclosure           | UL Enclosure Type 2  |
|                    | Agency Listing      | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU; Listed to UL 2043 - suitable for use in air plenums per Section 300.22(c) of the NEC and Section 602.2 of the IMC |
|                    | Quality Standard    | ISO 9001   |
|                    | Ambient temperature | -22...122°F [-30...50°C]   |
|                    | Storage temperature | -40...176°F [-40...80°C]   |
| <b>Materials</b>   | Ambient humidity    | Max. 95% RH, non-condensing  |
|                    | Valve body          | Nickel-plated brass body   |
|                    | Flow measuring pipe | brass body nickel-plated   |
|                    | Spindle             | stainless steel  |
|                    | Spindle seal        | EPDM (lubricated)  |
|                    | Characterized disc  | stainless steel TEFZEL®  |
|                    | Seat                | PTFE   |
|                    | Pipe connection     | NPT female ends  |
|                    | O-ring              | EPDM   |
|                    | Ball                | stainless steel  |

## Safety notes



- This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Outdoor application: only possible in case that no (sea) water, snow, ice, insulation or aggressive gases interfere directly with the actuator and that is ensured that the ambient conditions remain at any time within the thresholds according to the data sheet.
- Only authorized specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- WARNING: This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

## Product features

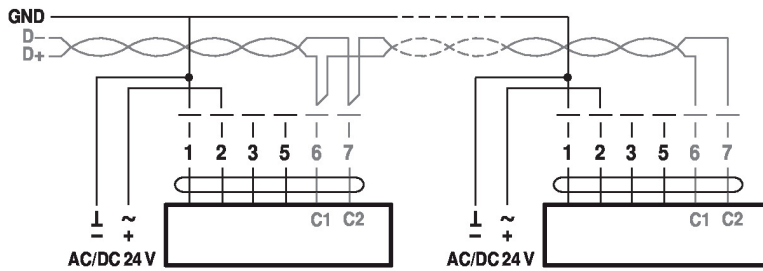
**Flow measurement** \*All flow tolerances are at 68°F [20°C] & water.

## Accessories

|                               |   |                    |
|-------------------------------|---|--------------------|
| <b>Electrical accessories</b> | <b>Description</b>  | <b>Type</b>        |
|                               | Replacement flow sensor for EPIV, Ultrasonic 2" 50 GPM 76.1   | M2450-EP           |
|                               | Service Tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices | ZTH US             |
| <b>Mechanical accessories</b> | <b>Description</b>  | <b>Type</b>        |
|                               | Weather shield for Belimo Energy Valve™, 25...50, Ultrasonic models only  | ZS-EPIV-EV-50-SCNF |
|                               | Valve neck extension for ball valve DN 15...50  | ZR-EXT-01          |

### Electrical installation

BACnet MS/TP / Modbus RTU



#### Cable colors:

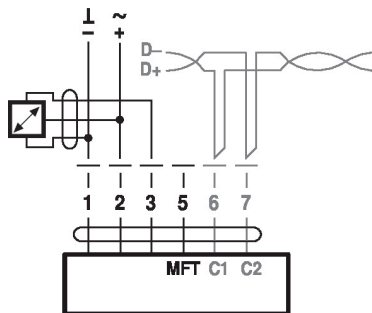
- 1= black
- 2 = red
- 3 = white
- 5 = orange
- 6 = pink
- 7 = grey

BACnet / Modbus signal assignment:

C1 = D- = A

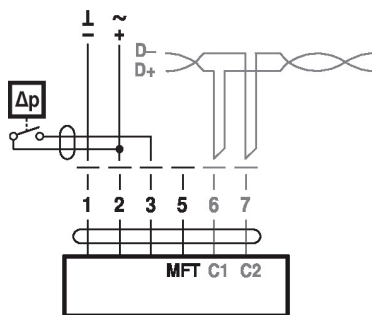
C2 = D+ = B

Connection with active sensor, e.g. 0...10 V @ 0...50°C



Possible voltage range:  
0...32 V (resolution 30 mV)

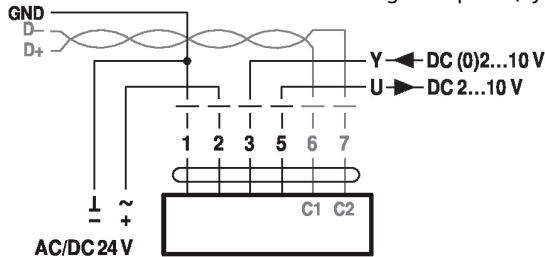
Connection with switching contact, e.g. Δp monitor



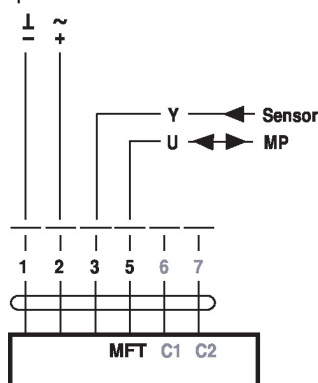
Requirements for switching contact:

The switching contact must be able to accurately switch a current of 16 mA @ 24 V.

Modbus RTU / BACnet MS/TP with analogue setpoint (hybrid mode)



Operation on the MP-Bus



## Dimensions

Dimensional drawings

