

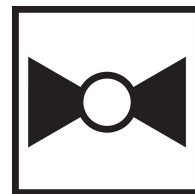
2-way, Characterized Control Valve, Stainless Steel Ball and Stem



Picture may differ from product



5-year warranty



## Type overview

| Type | DN      |
|------|---------|
| B277 | 3" [80] |

## Technical data

|                    |                          |                                        |
|--------------------|--------------------------|----------------------------------------|
| Functional data    | Valve size [mm]          | 3" [80]                                |
|                    | Fluid                    | chilled or hot water, up to 60% glycol |
|                    | Fluid Temp Range (water) | 0...212°F [-18...100°C]                |
|                    | Body Pressure Rating     | 400 psi                                |
|                    | Close-off pressure Δps   | 100 psi                                |
|                    | Flow characteristic      | equal percentage                       |
|                    | Leakage rate             | 0% for A-AB                            |
|                    | Pipe connection          | Internal thread<br>NPT (female)        |
|                    | Servicing                | maintenance-free                       |
|                    | Flow Pattern             | 2-way                                  |
|                    | Controllable flow range  | 75°                                    |
|                    | Cv                       | 70                                     |
| Materials          | Valve body               | Nickel-plated brass body               |
|                    | Stem                     | stainless steel                        |
|                    | Stem seal                | EPDM (lubricated)                      |
|                    | Seat                     | PTFE                                   |
|                    | Characterized disc       | TEFZEL®                                |
|                    | O-ring                   | EPDM (lubricated)                      |
|                    | Ball                     | stainless steel                        |
| Suitable actuators | Non Fail-Safe            | ARB(X)<br>ARQB(X)<br>ARB(X) N4         |
|                    | Spring                   | AFRB(X)                                |

## Safety notes



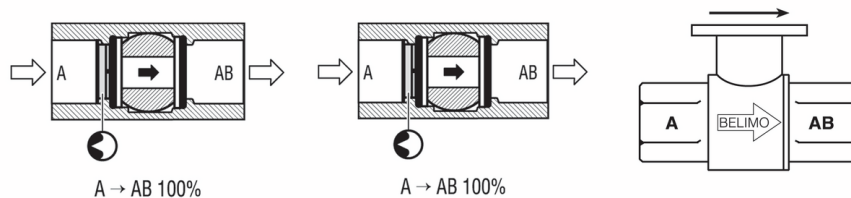
- **WARNING:** This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

## Product features

**Application** This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable flow.

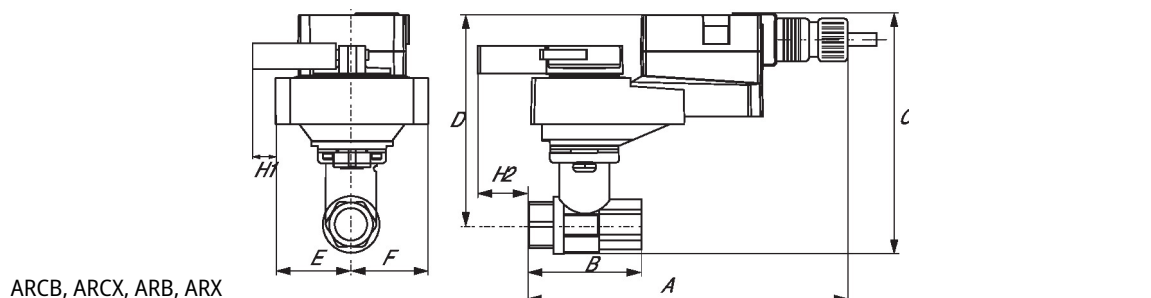
## Flow/Mounting details

Two-way valves should be installed with the disc upstream.



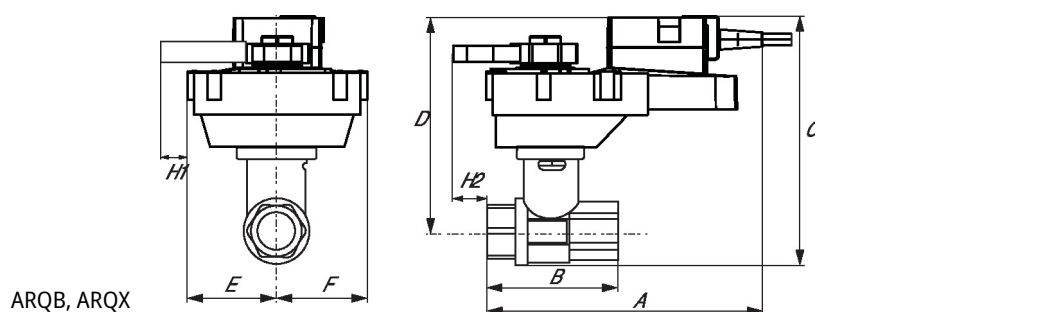
## Dimensions

| Type | DN      | Weight          |
|------|---------|-----------------|
| B277 | 3" [80] | 9.0 lb [4.1 kg] |



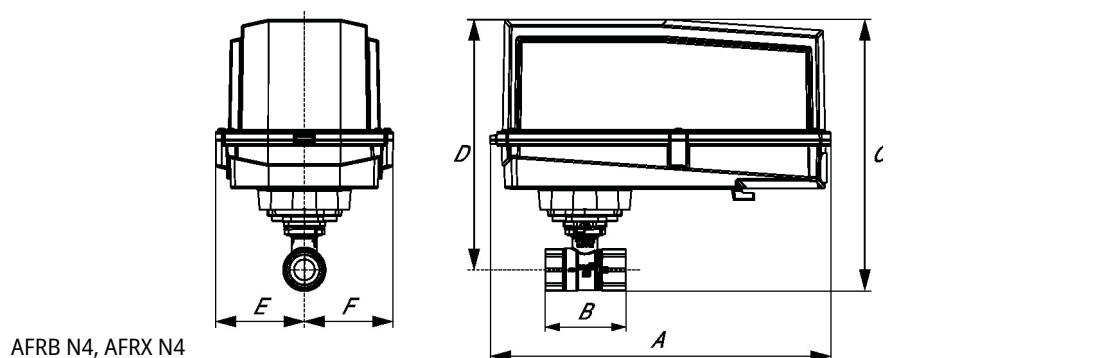
ARCB, ARCX, ARB, ARX

| A           | B          | C          | D          | E         | F         | H1        |
|-------------|------------|------------|------------|-----------|-----------|-----------|
| 10.1" [257] | 5.8" [148] | 8.5" [217] | 6.0" [153] | 2.8" [71] | 2.8" [71] | 2.1" [53] |



ARQB, ARQX

| A          | B          | C          | D          | E         | F         | H1        | H2        |
|------------|------------|------------|------------|-----------|-----------|-----------|-----------|
| 9.9" [251] | 5.8" [148] | 8.6" [219] | 6.1" [155] | 2.3" [58] | 2.3" [58] | 0.8" [20] | 0.6" [15] |

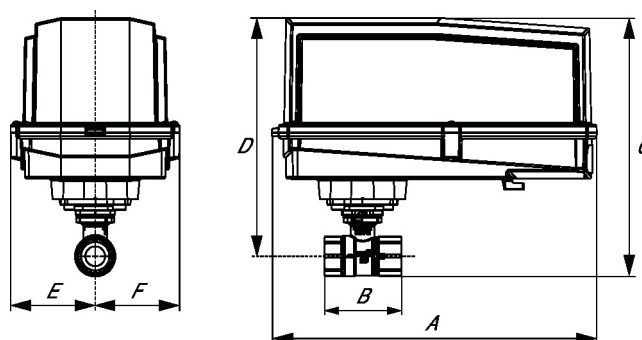


AFRB N4, AFRX N4

| A           | B          | C           | D          | E         | F         |
|-------------|------------|-------------|------------|-----------|-----------|
| 13.0" [330] | 5.8" [148] | 10.3" [262] | 9.3" [235] | 3.4" [86] | 3.4" [86] |

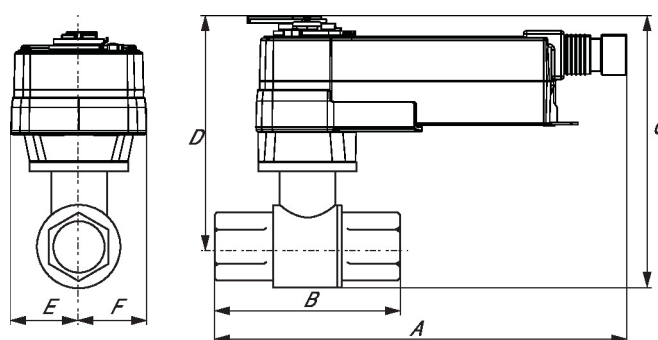
**Dimensions**

ARB N4, ARX N4, NRB N4, NRX N4



| A           | B          | D          | E         | F         |
|-------------|------------|------------|-----------|-----------|
| 11.4" [289] | 5.8" [148] | 8.0" [203] | 3.1" [80] | 3.1" [80] |

AFRB, AFRX



| A           | B          | C          | D          | E         | F         |
|-------------|------------|------------|------------|-----------|-----------|
| 11.8" [299] | 5.8" [148] | 9.1" [231] | 6.6" [168] | 2.0" [51] | 2.0" [51] |

MFT/programmable, Spring return, 24 V



Picture may differ from product



5-year warranty



## Technical data

|                        |                                    |                                                                                             |
|------------------------|------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Electrical data</b> | Nominal voltage                    | AC/DC 24 V                                                                                  |
|                        | Nominal voltage frequency          | 50/60 Hz                                                                                    |
|                        | Nominal voltage range              | AC 19.2...28.8 V / DC 21.6...28.8 V                                                         |
|                        | Power consumption in operation     | 7.5 W                                                                                       |
|                        | Power consumption in rest position | 3 W                                                                                         |
|                        | Transformer sizing                 | 10 VA                                                                                       |
|                        | Electrical Connection              | 18 AWG appliance cable, 1 m, with 1/2" NPT conduit connector                                |
|                        | Overload Protection                | electronic throughout 0...95° rotation                                                      |
| <b>Functional data</b> | Operating range Y                  | 0...135 Ω                                                                                   |
|                        | Operating range Y note             | Honeywell Electronic Series 90, input 0...135 Ω                                             |
|                        | Position feedback U                | 2...10 V                                                                                    |
|                        | Position feedback U note           | Max. 0.5 mA                                                                                 |
|                        | Position feedback U variable       | VDC variable                                                                                |
|                        | Direction of motion motor          | selectable with switch                                                                      |
|                        | Direction of motion fail-safe      | reversible with cw/ccw mounting                                                             |
|                        | Manual override                    | 5 mm hex crank (3/16" Allen), supplied                                                      |
|                        | Angle of rotation                  | 90°                                                                                         |
|                        | Running Time (Motor)               | 150 s / 90°                                                                                 |
|                        | Running time motor variable        | 70...220 s                                                                                  |
|                        | Running time fail-safe             | <20 s @ 68°F [20°C]                                                                         |
|                        | Sound power level, motor           | 45 dB(A)                                                                                    |
|                        | Sound power level, fail-safe       | 62 dB(A)                                                                                    |
|                        | Adaptation Setting Range           | off (default)                                                                               |
|                        | Position indication                | Mechanical                                                                                  |
| <b>Safety data</b>     | Power source UL                    | Class 2 Supply                                                                              |
|                        | Degree of protection IEC/EN        | IP54                                                                                        |
|                        | Degree of protection NEMA/UL       | NEMA 2                                                                                      |
|                        | Housing                            | UL Enclosure Type 2                                                                         |
|                        | Agency Listing                     | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02<br>CE acc. to 2014/30/EU and 2014/35/EU |
|                        | Quality Standard                   | ISO 9001                                                                                    |
|                        | UL 2043 Compliant                  | Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC |
|                        | Ambient humidity                   | Max. 95% RH, non-condensing                                                                 |

## Technical data

|                    |                                                                              |                                      |
|--------------------|------------------------------------------------------------------------------|--------------------------------------|
| <b>Safety data</b> | Ambient temperature                                                          | -22...122°F [-30...50°C]             |
|                    | Storage temperature                                                          | -40...176°F [-40...80°C]             |
|                    | Servicing                                                                    | maintenance-free                     |
| <b>Weight</b>      | Weight                                                                       | 4.9 lb [2.2 kg]                      |
| <b>Materials</b>   | Housing material                                                             | Galvanized steel and plastic housing |
| <b>Footnotes</b>   | †Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3 |                                      |

## Accessories

|                               |                                                                                                                                       |                                                                                                                                       |             |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------|
|                               | <b>Tools</b>                                                                                                                          | <b>Description</b>                                                                                                                    | <b>Type</b> |
|                               |                                                                                                                                       | Connecting cable 10 ft [3 m], A: RJ11 6/4 LINK.10, B: 3-pin Weidmüller and supply connection                                          | ZK4-GEN     |
|                               |                                                                                                                                       | Service tool, with ZIP-USB function, for configurable and communicative Belimo actuators, VAV controller and HVAC performance devices | ZTH US      |
| <b>Electrical accessories</b> | <b>Description</b>                                                                                                                    | <b>Type</b>                                                                                                                           |             |
|                               | Service tool, with ZIP-USB function, for configurable and communicative Belimo actuators, VAV controller and HVAC performance devices | ZTH US                                                                                                                                |             |
| <b>Gateways</b>               | <b>Description</b>                                                                                                                    | <b>Type</b>                                                                                                                           |             |
|                               | Gateway MP to BACnet MS/TP                                                                                                            | UK24BAC                                                                                                                               |             |
|                               | Gateway MP to Modbus RTU                                                                                                              | UK24MOD                                                                                                                               |             |
|                               | Gateway MP to LonWorks                                                                                                                | UK24LON                                                                                                                               |             |