

3-way Mixing/Diverting, Characterized Control Valve, Stainless Steel Ball and Stem



5-year warranty



Type overview

| | |
|-------------|-----------|
| Type | DN |
| B349 | 50 |

Technical data

| | | |
|---------------------------|--------------------------|--|
| Functional data | Valve size [mm] | 2" [50] |
| | Fluid | chilled or hot water, up to 60% glycol |
| | Fluid Temp Range (water) | 0...250°F [-18...120°C] |
| | Body Pressure Rating | 400 psi |
| | Close-off pressure Δps | 200 psi |
| | Flow | A-port: as stated in chart B-port: 70% of A – AB Cv |
| | Flow characteristic | A-port equal percentage, B-port modified for constant common port flow |
| | Leakage rate | 0% for A – AB, <2.0% for B – AB |
| | Pipe connection | Internal thread NPT (female) |
| | Servicing | maintenance-free |
| | Flow Pattern | 3-way Mixing/Diverting |
| | Controllable flow range | 75° |
| | Cv | 46 |
| | Materials | Valve body |
| Stem | | stainless steel |
| Stem seal | | EPDM (lubricated) |
| Seat | | PTFE |
| Characterized disc | | stainless steel |
| O-ring | | EPDM (lubricated) |
| Ball | | stainless steel |
| Suitable actuators | Non Fail-Safe | ARB(X) ARQB(X) 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

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 or constant flow.

Flow/Mounting details



Dimensions

| | | |
|-------------|-----------|-----------------|
| Type | DN | Weight |
| B349 | 50 | 5.5 lb [2.5 kg] |

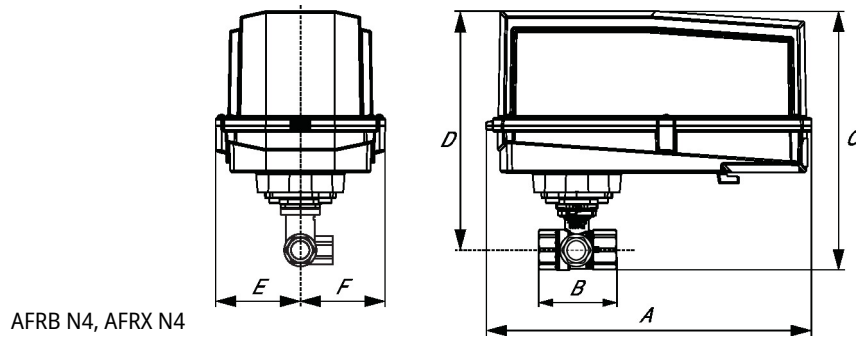


Dimensions



AFRB, AFRX

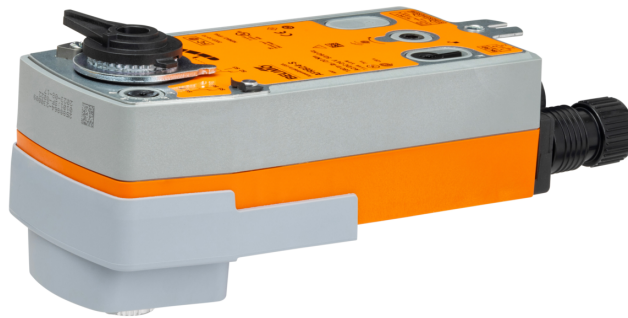
| A | B | C | D | E | F |
|-------------|------------|------------|------------|-----------|-----------|
| 11.3" [286] | 4.9" [125] | 8.3" [211] | 6.6" [168] | 2.6" [66] | 2.6" [66] |



AFRB N4, AFRX N4

| A | B | C | D | E | F |
|-------------|------------|-------------|------------|-----------|-----------|
| 13.0" [330] | 4.9" [125] | 11.8" [300] | 9.9" [251] | 3.7" [95] | 3.7" [95] |

On/Off, Spring return, 24 V



5-year warranty


Technical data

| | | |
|------------------------|-------------------------------------|---|
| Electrical data | 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 | 5 W |
| | Power consumption in rest position | 2.5 W |
| | Transformer sizing | 7.5 VA |
| | Auxiliary switch | 2x SPDT, 1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V, 1x 10% / 1x 11...90% |
| | Switching capacity auxiliary switch | 1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V |
| | Electrical Connection | (2) 18 GA appliance cables, 3 ft [1 m], with 1/2" NPT conduit connectors |
| | Overload Protection | electronic throughout 0...95° rotation |
| Functional data | Direction of motion motor | selectable by ccw/cw mounting |
| | 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) | 75 s / 90° |
| | Running time fail-safe | <20 s |
| | Noise level, motor | 45 dB(A) |
| | Noise level, fail-safe | 62 dB(A) |
| Position indication | Mechanical | |
| Safety data | Power source UL | Class 2 Supply |
| | Degree of protection IEC/EN | IP54 |
| | Degree of protection NEMA/UL | NEMA 2 |
| | 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 |
| | 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 |
| | Ambient temperature | -22...122°F [-30...50°C] |
| | Storage temperature | -40...176°F [-40...80°C] |
| | Servicing | maintenance-free |
| | Weight | Weight |

Technical data

Materials Housing material Galvanized steel and plastic housing

Footnotes †Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3

Electrical installation

✂ INSTALLATION NOTES

- Ⓐ Actuators with appliance cables are numbered.
- ⚠ Provide overload protection and disconnect as required.
- ⚠ Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
- ⚠₄₅ Actuators may be powered in parallel. Power consumption must be observed.
- ⚠₄₈ Parallel wiring required for piggy-back applications.
- ⚠ Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.
- ◆ Meets cULus requirements without the need of an electrical ground connection.
- ⚠ **Warning! Live electrical components!**
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Wiring diagrams
On/Off

