

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



5-year warranty



### Type overview

<b>Type</b>	<b>DN</b>
B349	50

### Technical data

<b>Functional data</b>	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
	<b>Materials</b>	Valve body
Stem		stainless steel
Stem seal		EPDM (lubricated)
Seat		PTFE
Characterized disc		stainless steel
O-ring		EPDM (lubricated)
Ball		stainless steel
<b>Suitable actuators</b>	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](http://www.p65warnings.ca.gov)

Product features

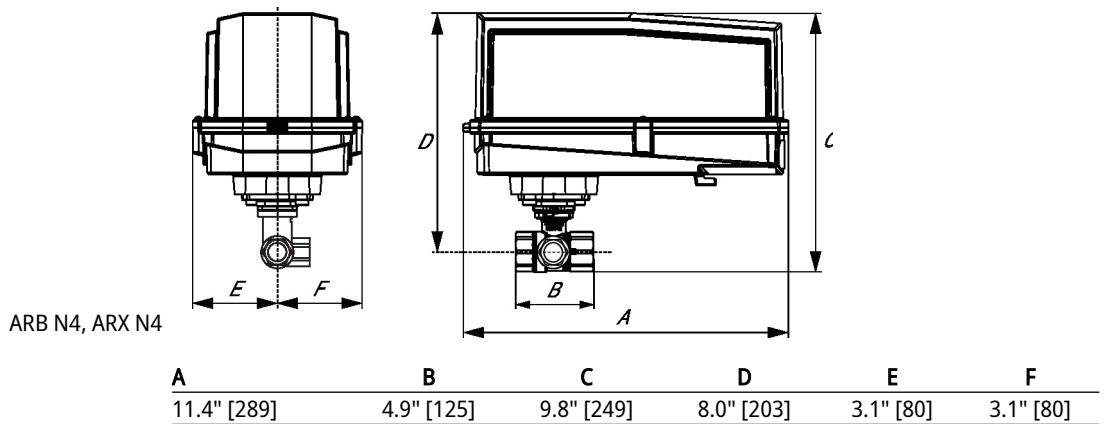
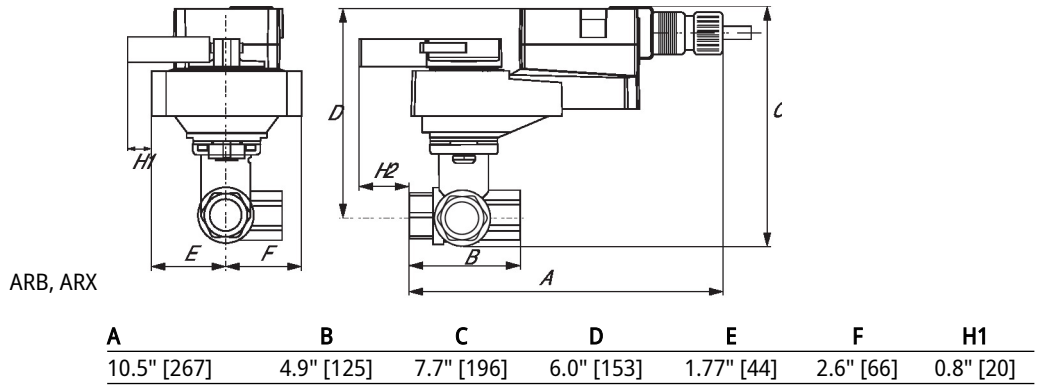
**Application** This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable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

Flow/Mounting details



Dimensions

<b>Type</b>	<b>DN</b>	<b>Weight</b>
B349	50	5.5 lb [2.5 kg]

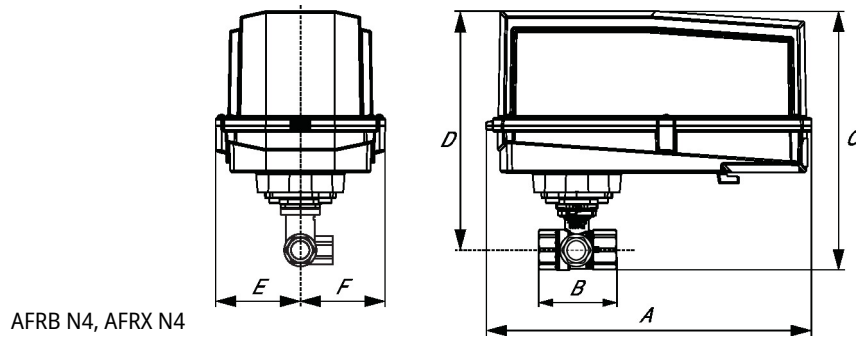


Dimensions



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]



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Technical data

<b>Electrical data</b>	Nominal voltage	AC 100...240 V	
	Nominal voltage frequency	50/60 Hz	
	Nominal voltage range	AC 85...265 V	
	Power consumption in operation	4 W	
	Power consumption in rest position	1 W	
	Transformer sizing	7.5 VA	
	Electrical Connection	18 GA appliance cable, 1 m, 3 m or 5 m, with 1/2" NPT conduit connector, degree of protection NEMA 2 / IP54	
	Overload Protection	electronic throughout 0...90° rotation	
<b>Functional data</b>	Operating range Y	2...10 V	
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)	
	Input impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA	
	Position feedback U	2...10 V	
	Position feedback U note	Max. 1 mA	
	Direction of motion motor	selectable with switch 0/1	
	Manual override	external push button	
	Angle of rotation	90°	
	Angle of rotation note	adjustable with mechanical stop	
	Running Time (Motor)	90 s / 90°	
	Running time motor variable	90 or 150 s	
	Noise level, motor	45 dB(A)	
	Position indication	Mechanical, pluggable	
	<b>Safety data</b>	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	
<b>Weight</b>		Weight	2.3 lb [1 kg]

**Materials** Housing material Galvanized steel and plastic housing

**Footnotes** †Rated Impulse Voltage 4kV, Type of action 1, Control Pollution Degree 3.

**Electrical installation**

**✂ INSTALLATION NOTES**

- (A)** Actuators with appliance cables are numbered.
- (1)** Provide overload protection and disconnect as required.
- (2)** Actuators may be connected in parallel. Power consumption and input impedance must be observed.
- (5)** Only connect common to negative (-) leg of control circuits.
- (7)** A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
- ◆** Meets cULus requirements without the need of an electrical ground connection.
- (1) 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**

2...10 V / 4...20 mA Control AC 100...240 V

