

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



5-year warranty



### Type overview

<b>Type</b>	<b>DN</b>
B331	32

### Technical data

<b>Functional data</b>	Valve size [mm]	1.25" [32]
	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	25
	<b>Materials</b>	Valve body
Stem		stainless steel
Stem seal		EPDM (lubricated)
Seat		PTFE
Characterized disc		Ryton PPS
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

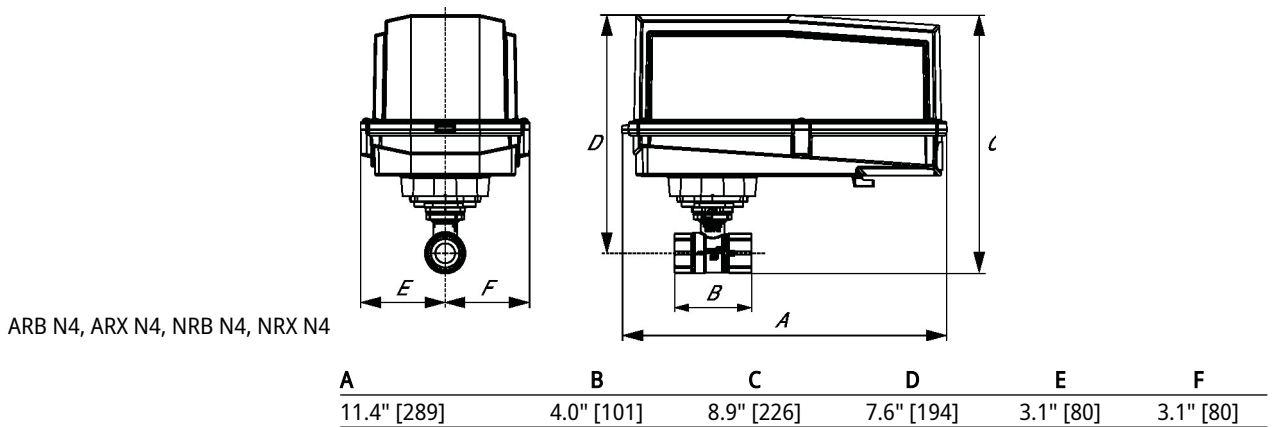
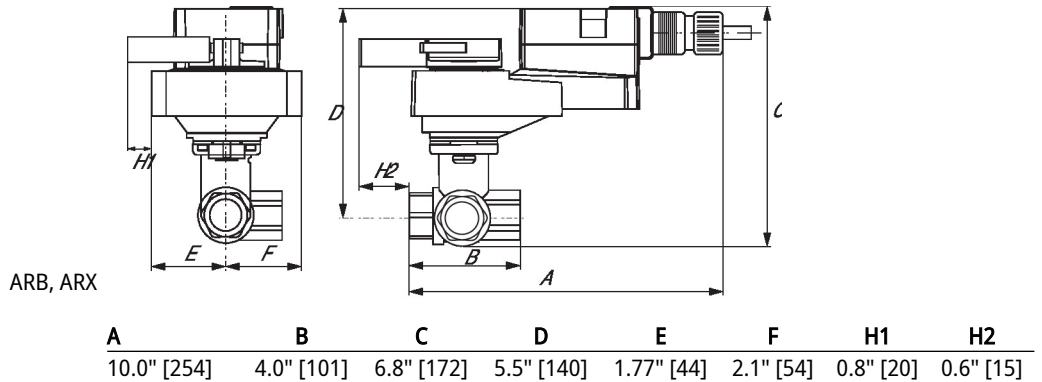
**Application** This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable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

Flow/Mounting details

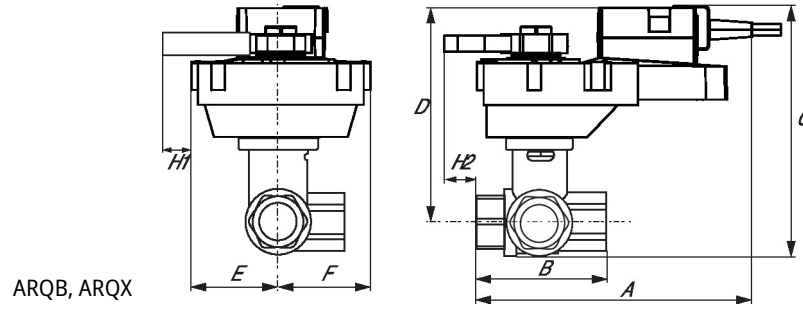


Dimensions

<b>Type</b>	<b>DN</b>	<b>Weight</b>
B331	32	2.5 lb [1.1 kg]

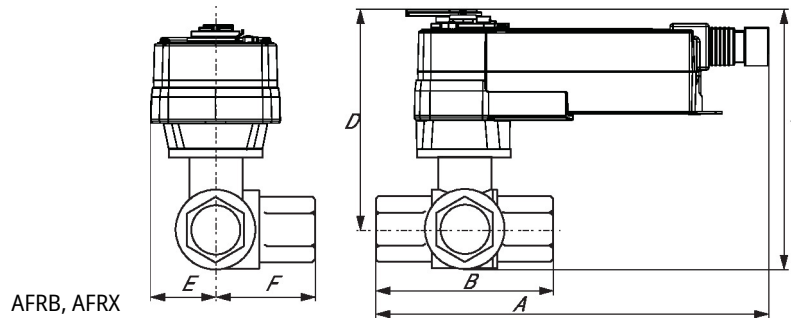


## Dimensions



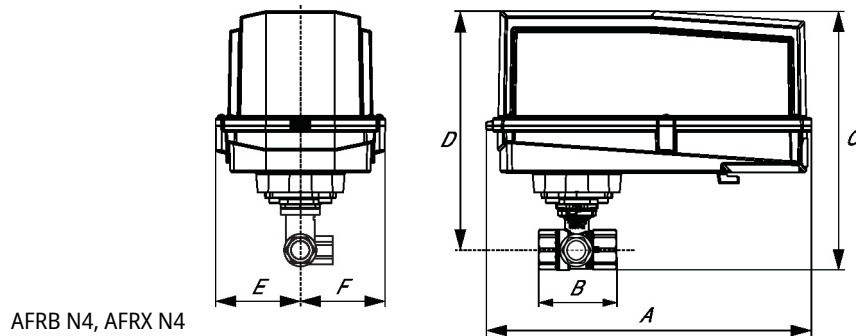
ARQB, ARQX

A	B	C	D	E	F	H1	H2
9.7" [246]	4.0" [101]	7.5" [191]	6.2" [158]	1.77" [44]	2.1" [54]	1.4" [34]	0.8" [20]



AFRB, AFRX

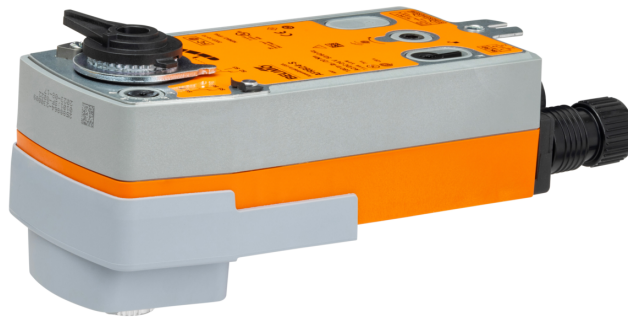
A	B	C	D	E	F
10.6" [269]	4.0" [101]	6.9" [175]	5.7" [146]	2.1" [54]	1.3" [33]



AFRB N4, AFRX N4

A	B	C	D	E	F
13.0" [330]	4.0" [101]	10.5" [267]	9.5" [241]	3.7" [95]	3.7" [95]

On/Off, Spring return, 24...240 V



5-year warranty


**Technical data**

<b>Electrical data</b>	Nominal voltage	AC 24...240 V / DC 24...125 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...264 V / DC 21.6...137.5 V
	Power consumption in operation	7 W
	Power consumption in rest position	3.5 W
	Transformer sizing	18 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
<b>Functional data</b>	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	
<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

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.
- UP Universal Power Supply (UP) models can be supplied with AC 24...240 V, or DC 24...125 V.
- 1 Provide overload protection and disconnect as required.
- 4 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.
- ◆ 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.
- ⚡ 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.

**Wiring diagrams**  
On/Off

