



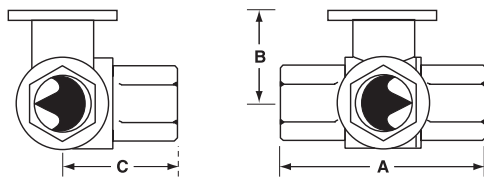
## Application

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.

Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage B-port modified for constant common port flow
Action	90° rotation
Sizes	½", ¾", 1", 1¼", 1½", 2"
Type of end fitting	NPT female ends
Materials:	
Body	forged brass, nickel plated
Ball	stainless steel
Stem	stainless steel
Seats	PTFE
Characterizing disc	Tefzel®
Packing	2 EPDM O-rings, lubricated
Body Pressure rating	
600 psi	½" - 1"
400 psi	1¼" - 2"
Media temp. range	0°F to 212°F [-18°C to 100°C]
Close off pressure	
200 psi	½" - 2"
Maximum differential pressure (ΔP)	30 psi for typical applications
Leakage	0% for A to AB <2.0% for B to AB
C <sub>v</sub> rating	A-port: see product chart for values B-port: 70% of A to AB C <sub>v</sub>

Tefzel® is a registered trademark of DuPont

## Dimensions

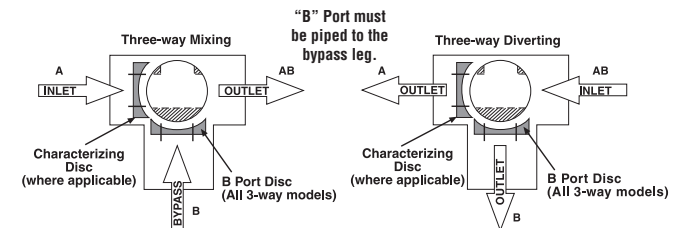


Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B307-B311	½"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312-B315	½"	15	2.38" [60.4]	1.72" [43.7]	1.26" [32.1]
B317-B320	¾"	20	2.73" [69.3]	1.81" [45.9]	1.45" [36.8]
B322-B325	1"	25	3.09" [78.4]	1.81" [45.9]	1.56" [39.8]
B329-B331	1¼"	32	3.96" [100.6]	2.21" [56.2]	2.14" [54.3]
B338-B341	1½"	40	4.39" [111.6]	2.45" [62.2]	2.33" [59.1]
B347-B352	2"	50	4.90" [124.5]	2.68" [68.0]	2.60" [66.0]

C <sub>v</sub>	Valve Nominal Size		Type	Suitable Return Actuators				
	Inches	DN [mm]		Non-Spring		Spring		
0.3	½"	15	B307	TR Series	LR Series	NR...N4 Series	TF Series	LF Series
0.46	½"	15	B308					
0.8	½"	15	B309					
1.2	½"	15	B310					
1.9	½"	15	B311					
3	½"	15	B312					
4.7	½"	15	B313					
10	½"	15	B315*					
4.7	¾"	20	B317					
24	¾"	20	B320*					
7.4	1"	25	B322	AR Series	AR...N4 Series	AF Series		
10	1"	25	B323					
30	1"	25	B325*					
10	1¼"	32	B329					
19	1¼"	32	B330					
25	1¼"	32	B331					
19	1½"	40	B338					
29	1½"	40	B339					
37	1½"	40	B340					
46	1½"	40	B341					
29	2"	50	B347	AF Series				
37	2"	50	B348					
46	2"	50	B349					
57	2"	50	B350					
68	2"	50	B351					
83	2"	50	B352					

\*Models without characterizing disc

## Flow Patterns





## Models

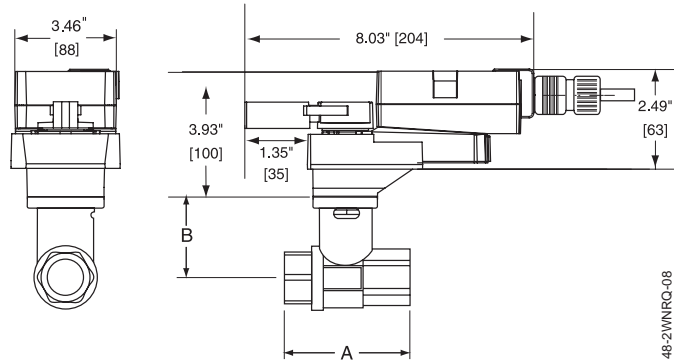
NRQB24-1	Basic Version
NRQX24-1	Flexible Version

## Technical Data

Control	On/Off
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running 12 W holding 1.5 W
Transformer sizing	18 VA (Class 2 power source)
Electrical connection	½" conduit connector, 18 GA plenum rated cable 3 ft [1m] NRQB24-1 NRQX24-1 □ 3 ft [1m] □ 10 ft [3m] □ 16 ft [5m]
Overload protection	electronic throughout 0 to 95° rotation
Input impedance	600 Ω
Angle of rotation	max 95°, adjustable with mechanical stop
Direction of rotation	reversible with ↻/↻ switch
Position indication	reflective visual indicator (snap-on)
Manual override	external push button
Running time	constant of independent load
NRQB24-1	5 seconds
NRQX24-1	5, 10 or 15 seconds
Humidity	5 to 95% RH non-condensing (EN 60730-1)
Ambient temperature	-22°F to 122°F [-30°C to 50°C]
Storage temperature	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2/IP54
Housing material	UL94-5VA
Agency listings†	UL60730-1A/-2-14, CAN/CSA E60730-1:02, CSA C22.2 No. 24-93, CE acc. to 2004/108/EC and 89/336/EEC
Noise level	<52 dB(A)
Quality standard	ISO 9001

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

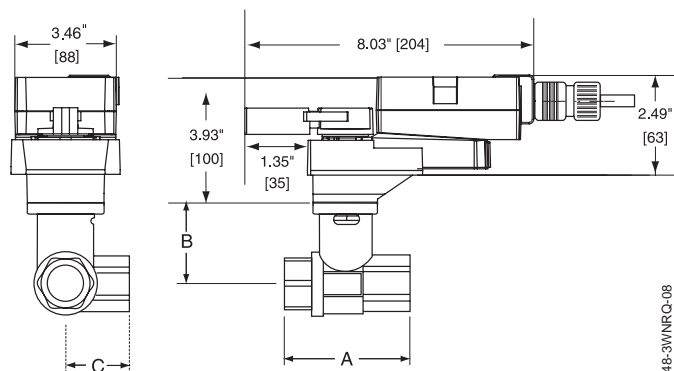
## Dimensions with 2-Way Valve



D148-2VNRQ-08

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
B231-B232	1¼"	32	3.72" [94.6]	1.98" [50.4]
B238-B240	1½"	40	3.88" [98.5]	1.98" [50.4]
B248-B250	2"	50	4.21" [107]	2.21" [56.15]

## Dimensions with 3-Way Valve





D148-3VNRQ-08

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B329-B331	1¼"	32	3.96" [100.6]	2.21" [56.2]	2.14" [54.3]

### Wiring Diagrams

#### **INSTALLATION NOTES**

-  Provide overload protection and disconnect as required.
-  Actuators may also be powered by 24 VDC.

#### **APPLICATION NOTES**

-  Meets cULus or UL and CSA 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.

