

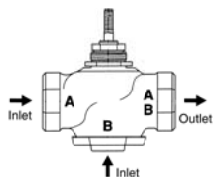


| Technical Data | | |
|-------------------------|--------------------------------------|------------------------|
| | G3 | G3...(D) |
| Service | chilled or hot water, 60% glycol | |
| Flow characteristic | linear | |
| Action | stem up - open B to AB | stem up - open B to AB |
| Sizes | ½" to 2" | |
| End fitting | NPT female ends | |
| Materials | | |
| Body | bronze | |
| Seat | bronze | |
| Stem | stainless steel | |
| Plug | brass | |
| Packing | spring loaded TFE | |
| Disc | none | |
| ANSI class | ANSI 250 (up to 400 psi below 150°F) | |
| Leakage | ANSI III | |
| Media temperature water | 20°F to 250°F (-7°C to 120°C) | |
| Maximum ΔP* water | 35 psi (241 kPa) | |
| Rangeability | 500:1 | |
| Valve weights | G314, G315(D) | 2 lbs |
| | G320 | 3 lbs |
| | G320D | 2.5 lbs |
| | G325, G332(D) | 2.5 lbs |
| | G325D | 5 lbs |
| | G340(D), G350(D) | 14 lbs |

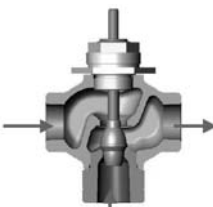
* (50% or more open)

G3...(D) 3-way Flow Patterns

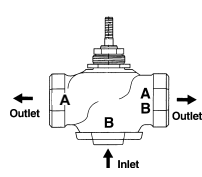
G3 3-way Mixing Valve



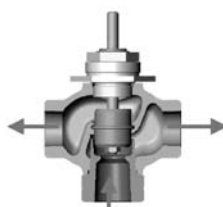
Stem Up- Open B to AB



G3...(D) 3-way Diverting Valve



Stem Up- Open B to AB



Note: Flow B to A travels through center of plug (as shown).

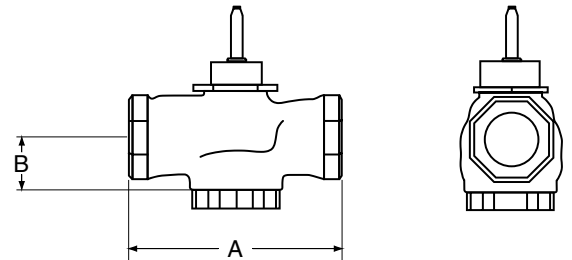
Application

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 reheat coils and bypass loops. This valve is suitable for use in a hydronic system with constant or variable flow.

3-way valves are available with mixing or diverting flow patterns.

| Valve Nominal Size | | | Type | Suitable Actuators | | |
|--------------------|--------|---------|-----------|--------------------|--------------|------------|
| C _v | Inches | DN [mm] | 3-way NPT | Non-Spring | Spring | |
| 2.2 | ½ | 15 | G314 | LM Series | NV Series | LF Series |
| 4.4 | ½ | 15 | G315(D) | | | |
| 7.5 | ¾ | 20 | G320(D) | NM | NF | NVF Series |
| 14 | 1 | 25 | G325(D) | | | |
| 20 | 1¼ | 32 | G332(D) | AM Series | AF(X) Series | NVF Series |
| 28 | 1½ | 40 | G340(D) | | | |
| 41 | 2 | 50 | G350 | | | |
| 40 | 2 | 50 | G350(D) | | | |

Dimensions



D078-3W

| Valve Body | Valve Nominal Size | | Dimensions (Inches [mm]) | |
|------------|--------------------|---------|--------------------------|------------|
| | Inches | DN [mm] | A | B |
| G314 | ½" | 15 | 3.06" [78] | 1.37" [35] |
| G315(D) | ½" | 15 | 3.06" [78] | 1.37" [35] |
| G320(D) | ¾" | 20 | 3.62" [92] | 1.68" [43] |
| G325(D) | 1" | 25 | 4.62" [117] | 1.56" [40] |
| G332(D) | 1¼" | 32 | 4.62" [117] | 1.62" [41] |
| G340(D) | 1½" | 40 | 5.37" [137] | 1.62" [41] |
| G350(D) | 2" | 50 | 6.12" [156] | 1.87" [48] |

Piping

The valves should be mounted in a weather-protected area in a location that is within the ambient limits of the actuator. Allow sufficient room for valve with actuator and for service. For the NV Series, allow 6" for cover removal and 12" for complete actuator removal. The G2(S) and G3(D) preferred mounting position of the valve is with the valve stem vertical above the valve body, for maximum life. However, the assemblies can be mounted with the valve stem vertical or horizontal in relation to the pipe. The actuators should never be mounted underneath the valve, as condensation can build up and result in a failure of the actuators. Do not reverse flow direction.



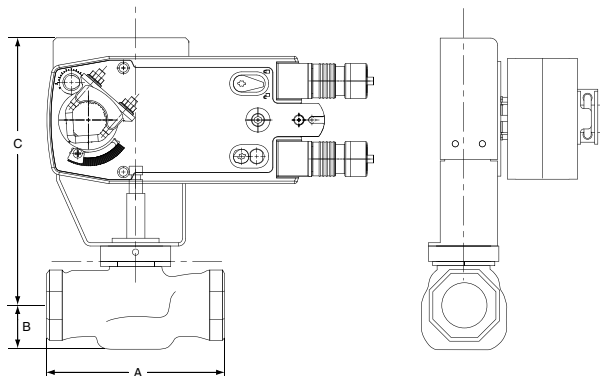
Models

NFBUP-X1
NFBUP-S-X1 w/built-in Aux. Switch



| Technical Data | |
|---|--|
| Power supply | 24...240 VAC -20% / +10%, 50/60 Hz 24...125 VDC ±10% |
| Power consumption | running 6 W holding 2.5 W |
| Transformer sizing | 9.5 VA (Class 2 power source) |
| Electrical connection | 3 ft, 18 GA appliance cable, ½" conduit connector -S models: two 3 ft, 18 gauge appliance cables with ½" conduit connectors |
| Overload protection | electronic throughout 0 to 95° rotation |
| Control | on/off |
| Torque | 90 in-lb [10 Nm] minimum |
| Direction of rotation | spring reversible with CW/CCW mounting |
| Mechanical angle of rotation | 95° (adjustable with mechanical end stop, 35° to 95°) |
| Running time | motor <75 sec spring 20 sec @ -4°F to 122°F [-20°C to 50°C]; <60 sec @ -22°F [-30°C] |
| Position indication | visual indicator, 0° to 95° (0° is full spring return position) |
| Manual override | 5 mm hex crank (¾" Allen), supplied |
| Humidity | max. 95% RH non-condensing |
| Ambient temperature | -22°F to 122°F [-30°C to 50°C] |
| Housing | Nema 2, IP54, Enclosure Type2 |
| Housing material | Zinc coated metal and plastic casing |
| Agency listings † | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC & 2006/95/EC |
| Noise level | <50dB(A) motor @ 75 seconds ≤62dB(A) spring return |
| Quality standard | ISO 9001 |
| Weight | 4.15 lbs (1.9 kg), 4.25 lbs (1.9 kg) with switches |
| † Rated Impulse Voltage 4kV, Type of action 1.AA (1.AA.B for -S version), Control Pollution Degree 3. | |
| NFBUP-S-X1 | |
| Auxiliary switches | 2 x SPDT 3A (0.5A) @ 250 VAC, UL approved one set at +10°, one adjustable 10° to 90° |

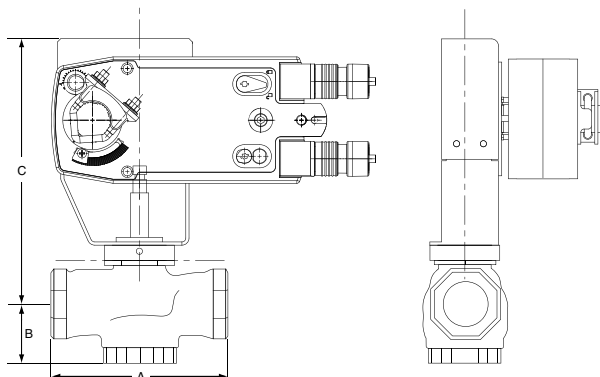
Dimensions with G2...(S) Series 2-Way Valve



D180

| Valve Body | Valve Nominal Size | | Dimensions (Inches [mm]) | | |
|------------|--------------------|---------|--------------------------|------------|-------------|
| | Inches | DN [mm] | A | B | C |
| G2(S) | 1" | 32 | 4.62" [117] | 1.12" [29] | 8.12" [206] |
| G2(S) | 1¼" | 40 | 4.62" [117] | 1.37" [35] | 8.37" [213] |

Dimensions with G3...(D) Series 3-Way Valve



D185

| Valve Body | Valve Nominal Size | | Dimensions (Inches [mm]) | | |
|------------|--------------------|---------|--------------------------|------------|-------------|
| | Inches | DN [mm] | A | B | C |
| G3(D) | 1" | 25 | 4.62" [117] | 1.56" [40] | 8.56" [217] |
| G3(D) | 1¼" | 32 | 4.62" [117] | 1.62" [41] | 8.62" [219] |

Wiring Diagrams

✂️ INSTALLATION NOTES

1 Provide overload protection and disconnect as required.

2 **CAUTION Equipment Damage!**
Actuators may be connected in parallel.
Power consumption and input impedance must be observed.

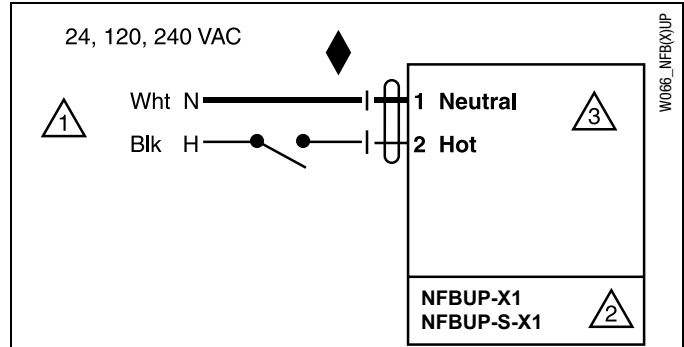
3 No ground connection is required.

4 For end position indication, interlock control, fan startup, etc., NFBUP-S-X1 incorporates two built-in auxiliary switches: 2 x SPDT, 3A (0.5A) @250 VAC, UL Approved, one switch is fixed at +10°, one is adjustable 10° to 90°.

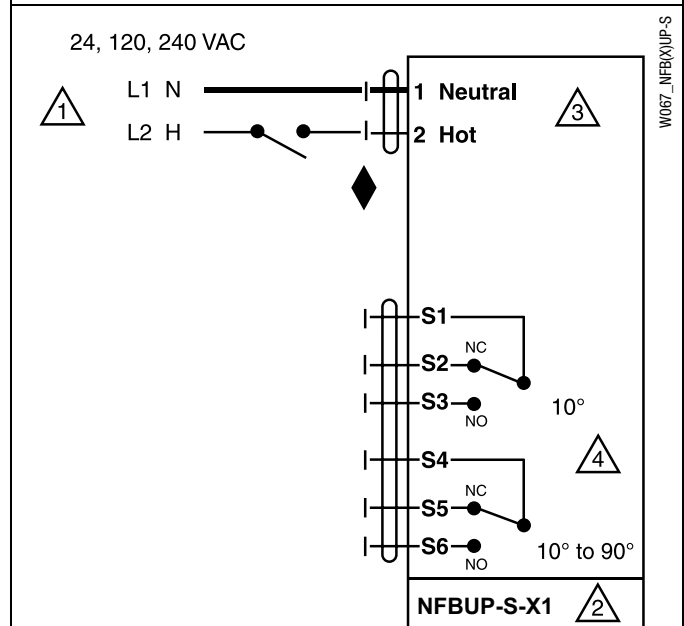
📄 APPLICATION NOTES

◆ 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.



On/Off wiring for NFBUP-X1



Auxiliary Switches for NFBUP-S-X1

| | Non-Spring Return | | | | | | Spring Return | | | | | |
|------------------------|-------------------|-----|-----|-----|-----|-----|---------------|-----|-----|-----|-----|-----|
| | NVD | NV | NVG | LM | NM | AM | NVFD | NVF | LF | NF | AF | AFX |
| 2-way | | | | | | | | | | | | |
| G212(S) | 250 | | | 250 | | | 250 | | 250 | | | |
| G213(S) | 250 | | | 250 | | | 250 | | 250 | | | |
| G214(S) | 250 | | | 250 | | | 250 | | 250 | | | |
| G215(S) | 250 | | | 250 | | | 250 | | 250 | | | |
| G219(S) | 250 | | | 242 | | | 250 | | 185 | | | |
| G220(S) | 250 | | | 242 | | | 250 | | 185 | | | |
| G224(S) | | 250 | | | 250 | | | 207 | | 250 | | |
| G225(S) | | 250 | | | 250 | | | 207 | | 250 | | |
| G232(S) | | 162 | | | 158 | | | 130 | | 158 | | |
| G240(S) | | 110 | 160 | | | 230 | | 88 | | | 169 | 230 |
| G250(S) | | 58 | 190 | | | 127 | | 47 | | | 93 | 127 |
| 3-way Mixing | | | | | | | | | | | | |
| G314 | 250 | | | 250 | | | 250 | | 250 | | | |
| G315 | 250 | | | 250 | | | 250 | | 250 | | | |
| G320 | 250 | | | 242 | | | 250 | | 185 | | | |
| G325 | | 250 | | | 250 | | | 207 | | 250 | | |
| G332 | | 162 | | | 158 | | | 130 | | 158 | | |
| G340 | | 110 | | | | 230 | | 88 | | | 169 | 230 |
| G350 | | 58 | | | | 127 | | 47 | | | 93 | 127 |
| 3-way Diverting | | | | | | | | | | | | |
| G315D | 250 | | | 250 | | | 250 | | 250 | | | |
| G320D | 250 | | | 250 | | | 250 | | 250 | | | |
| G325D | 250 | | | | 250 | | 250 | | | 250 | | |
| G332D | | 250 | | | 250 | | | 250 | | 250 | | |
| G340D | | 250 | | | | 250 | | 250 | | | 250 | 250 |
| G350D | | 250 | | | | 250 | | 250 | | | 250 | 250 |