



2-year warranty

Type overview

|            |    |
|------------|----|
| Type       | DN |
| B2050VS-01 | 15 |

Technical data

|                           |                                   |   |
|---------------------------|-----------------------------------|---|
| <b>Functional data</b>    | Valve size [mm]                   | 0.5" [15]                                     |
|                           | Fluid                             | chilled or hot water, up to 60% glycol, steam |
|                           | Fluid Temp Range (water)          | -22...280°F [-30...138°C]                     |
|                           | Body Pressure Rating              | 600 psig WOG                                  |
|                           | Close-off pressure Δps            | 600 psi                                       |
|                           | Flow characteristic               | modified equal percentage                     |
|                           | Max Differential Pressure (Steam) | 35 psi  |
|                           | Flow Pattern                      | 2-way   |
|                           | Leakage rate                      | ANSI Class VI                                 |
|                           | Controllable flow range           | 90° rotation                                  |
|                           | Cv                                | 1   |
|                           | Maximum Inlet Pressure (Steam)    | 35 psi [241 kPa]                              |
|                           | Maximum Velocity                  | 15 FPS  |
| <b>Materials</b>          | Valve body                        | Bronze B584-C84400                            |
|                           | Housing seal                      | PTFE  |
|                           | Spindle                           | 316 stainless steel                           |
|                           | Spindle seal                      | RPTFE   |
|                           | Seat                              | RPTFE   |
|                           | Lock nut                          | stainless steel                               |
|                           | Pipe connection                   | NPT female ends                               |
|                           | Retainer                          | B16 Brass                                     |
| Ball                      | 316 stainless steel               |   |
| <b>Suitable actuators</b> | Non-Spring                        | LMB(X)<br>GRCB(X)<br>GRB(X)                   |
|                           | Spring                            | LF  |

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 flow. This valve is designed with MFT functionally which facilitates the use of various control input.

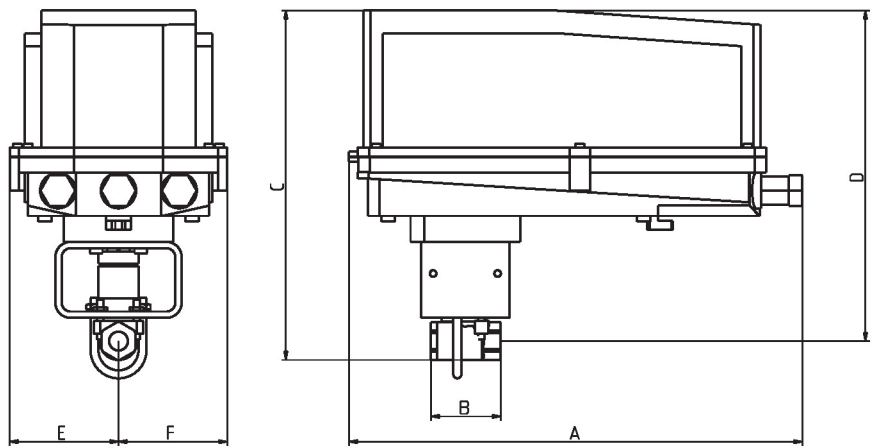
Up to 35 psi steam  
 1/2" - 2" 600 PSIG WOG, Cold Non-Shock  
 Federal Specification: WW-V-35C, Type II  
 Composition: BZ  
 Style: 3

Flow/Mounting details



Dimensions

|            |    |
|------------|----|
| Type       | DN |
| B2050VS-01 | 15 |



B2050VS..+GRC..N4

| A           | B         | C           | D            | E         | F         |
|-------------|-----------|-------------|--------------|-----------|-----------|
| 14.1" [358] | 2.2" [56] | 10.9" [277] | 10.28" [261] | 3.4" [86] | 3.4" [86] |



5-year warranty



## Technical data

|                        |                                     |   |
|------------------------|-------------------------------------|---|
| <b>Electrical data</b> | Nominal voltage                     | AC 120 V  |
|                        | Nominal voltage frequency           | 50/60 Hz  |
|                        | Power consumption in operation      | 5.5 W   |
|                        | Power consumption in rest position  | 3.5 W   |
|                        | Transformer sizing                  | 7.5 VA  |
|                        | Auxiliary switch                    | 1 x SPDT, 3 A resistive (0.5 A inductive) @ AC 250 V, adjustable 0...95°  |
|                        | Switching capacity auxiliary switch | 3 A resistive (0.5 A inductive) @ AC 250 V  |
|                        | Electrical Connection               | (2) 18 GA appliance cables with 1/2" conduit connectors, 3 ft [1 m],  |
|                        | Overload Protection                 | electronic throughout 0...95° rotation  |
|                        | Electrical Protection               | actuators are double insulated  |
| <b>Functional data</b> | Torque motor                        | 35 in-lb [4 Nm]   |
|                        | Direction of motion motor           | selectable with switch 0/1  |
|                        | Direction of motion fail-safe       | reversible with cw/ccw mounting   |
|                        | Angle of rotation                   | Max. 95°  |
|                        | Running Time (Motor)                | 75 s / 90°  |
|                        | Running time fail-safe              | <25 s @ -4...122°F [-20...50°C], <60 s @ -22°F [-30°C]  |
|                        | Noise level, motor                  | 50 dB(A)  |
|                        | Noise level, fail-safe              | 62 dB(A)  |
|                        | Shaft Diameter                      | 3/8...1/2" round, centers on 1/2"   |
|                        | Position indication                 | Mechanical  |
| <b>Safety data</b>     | Degree of protection IEC/EN         | IP54  |
|                        | Degree of protection NEMA/UL        | NEMA 2  |
|                        | Enclosure                           | UL Enclosure Type 2   |
|                        | Agency Listing                      | cULus acc. To UL 873 and CAN/CSA C22.2 No. 24-93; Listed to UL 2043 - suitable for use in air plenums per Section 300.22(c) of the NEC and Section 602.2 of the IMC |
|                        | Quality Standard                    | ISO 9001  |
|                        | Ambient temperature                 | -22...122°F [-30...50°C]  |
|                        | Storage temperature                 | -40...176°F [-40...80°C]  |
|                        | Ambient humidity                    | Max. 95% RH, non-condensing   |
|                        | Servicing                           | maintenance-free  |
|                        | <b>Materials</b>                    | Housing material  |

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

**Accessories**

| Electrical accessories | Description   | Type          |
|------------------------|---|---------------|
|                        | Auxiliary switch, mercury-free  | P475          |
|                        | Auxiliary switch, mercury-free  | P475-1        |
|                        | Signal simulator, Power supply AC 120 V   | PS-100        |
|                        | <p>Conduit box converter</p>  | ZG-CBLS       |
| Mechanical accessories | Description   | Type          |
|                        | Shaft extension 170 mm Ø10 mm for damper shaft Ø 6...16 mm  | AV6-20        |
|                        | End stop indicator  | IND-LF        |
|                        | Shaft clamp<br>for LF..   | K6 US         |
|                        | Shaft clamp reversible, clamping range Ø16...20 mm  | K6-1          |
|                        | Ball joint suitable for damper crank arm KH8 / KH10, Multipack 10 pcs.  | KG10A         |
|                        | Ball joint suitable for damper crank arm KH8, Multipack 10 pcs.   | KG6           |
|                        | Ball joint suitable for damper crank arm KH8, Multipack 10 pcs.   | KG8           |
|                        | Damper crank arm Slot width 8.2 mm, for Ø1.05"  | KH12          |
|                        | Damper crank arm Slot width 6.2 mm, clamping range Ø10...18 mm  | KH6           |
|                        | Damper crank arm Slot width 8.2 mm, clamping range Ø10...18 mm  | KH8           |
|                        | Actuator arm, clamping range Ø8...16 mm, Slot width 8.2 mm  | KH-LF         |
|                        | V-bolt Kit for KH-LF.   | KH-LFV        |
|                        | Anti-rotation bracket LF.   | LF-P          |
|                        | Push rod for KG10A ball joint 36" L, 3/8" diameter  | SH10          |
|                        | Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).   | SH8           |
|                        | Wrench 0.32 in and 0.39 in [8 mm and 10 mm]   | TOOL-06       |
|                        | Angle of rotation limiter, with end stop  | ZDB-LF        |
|                        | Form fit adapter 8x8 mm   | ZF8-LF        |
|                        | <p>Mounting Bracket: ZS-260 Right Angle</p>   | ZG-109        |
|                        | <p>Linkage kit</p>  | ZG-110        |
|                        | Mounting bracket<br>for LF..  | ZG-112        |
|                        | Damper clip for damper blade, 3.5" width.   | ZG-DC1        |
|                        | Damper clip for damper blade, 6" width.   | ZG-DC2        |
|                        | LF crankarm adaptor kit (includes ZG-112).  | ZG-LF112      |
|                        | LF crankarm adaptor kit (T bracket included).   | ZG-LF2        |
|                        | Shaft extension for 3/8" diameter shafts (4" L).  | ZG-LMSA-1     |
|                        | Shaft extension for 1/2" diameter shafts (5" L).  | ZG-LMSA-1/2-5 |
|                        | Weather shield 330x203x152 mm [13x8x6"] (LxBxH)   | ZS-100        |
|                        | Base plate, for ZS-100  | ZS-101        |
|                        | Weather shield 406x213x102 mm [16x8-3/8x4"] (LxWxH)   | ZS-150        |
|                        | Explosion proof housing 406x254x164 mm [16x10x6.435"] (LxBxH), UL<br>and CSA, Class I, Zone 1&2, Groups B, C, D, (NEMA 7), Class III, Hazardous<br>(classified) Locations | ZS-260        |
|                        | Weather shield 438x222x140 mm [17-1/4x8-3/4x5-1/2"] (LxBxH), NEMA<br>4X, with mounting brackets   | ZS-300        |
|                        | Weather shield 438x222x140 mm [17-1/4x8-3/4x5-1/2"] (LxBxH), NEMA<br>4X, with mounting brackets   | ZS-300-5      |
|                        | Shaft extension 1/2"  | ZS-300-C1     |
|                        | Shaft extension 3/4"  | ZS-300-C2     |
|                        | Shaft extension 1"  | ZS-300-C3     |

**Electrical installation**

**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.

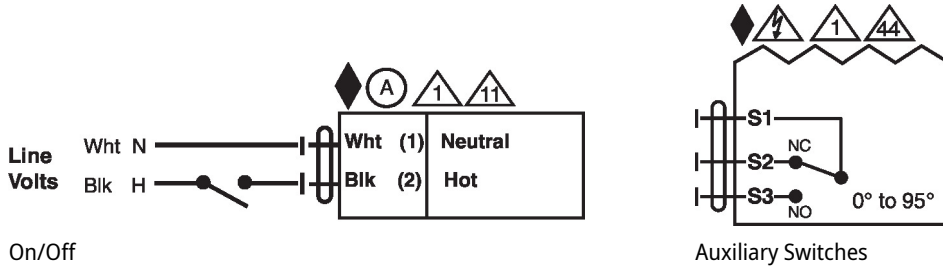


Meets cULus requirements without the need of an electrical ground connection.



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.

- Ⓐ Actuators with appliance cables are numbered.
- ⚠ Provide overload protection and disconnect as required.
- ⚠⚠ Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- ⚠⚠⚠ One built-in auxiliary switch (1x SPDT), for end position indication, interlock control, fan startup, etc.



Dimensions

