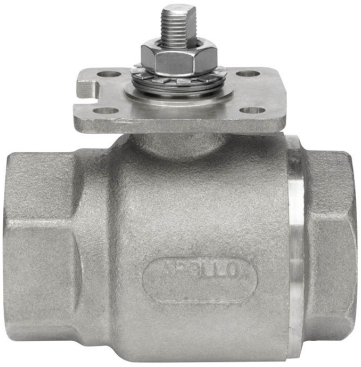
Ball Valve (VSS), 1", 2-way, Cv 43

- NSF/ANSI 61 – Water Quality – C. Hot
- NSF/ANSI 372 - Lead Free



2-year warranty

## Type overview

| Type | DN |
|---|---|
| B224VSS | 25 |

## Technical data

| | | |
|---|---|---|
| **Functional data** | Valve size [mm] | 1" [25] |
| | Fluid | chilled or hot water, up to 60% glycol, steam |
| | Fluid Temp Range (water) | -30...148°C [-22...298°F] |
| | Body Pressure Rating | 1500 psig WOG |
| | Close-off pressure Δps | 1000 psi |
| | Flow characteristic | modified equal percentage |
| | Leakage rate | ANSI Class VI |
| | Pipe connection | Internal thread<br>NPT (female) |
| | Max Differential Pressure (Steam) | 50 psi |
| | Flow Pattern | 2-way |
| | Controllable flow range | 90° rotation |
| | Cv | 43 |
| | Maximum Inlet Pressure (Steam) | 50 psi |
| | Maximum Velocity | 15 FPS |
| **Materials** | Valve body | Stainless steel A351-CF8M 316 |
| | Housing seal | PTFE |
| | Stem | 316 stainless steel |
| | Stem seal | RPTFE |
| | Seat | RPTFE |
| | Lock nut | stainless steel |
| | Ball | 316 stainless steel |
| **Suitable actuators** | Non Fail-Safe | AMB(X)<br>GRCB(X)<br>GRB(X) |
| | Spring | AF |

Note: NSF/ANSI/CAN 61 Section 8, Annex G, NSF/ANSI 372 - Drinking Water System Components - Lead Content. Suitable for Cold, Domestic Hot, and Commercial Hot applications.

## Product features

**Application**

These threaded valves are designed to provide modulating or two position control of hot or chilled water and saturated steam systems under 50 psi.

Typical applications include reheat coils, VAV terminal control, unit ventilators, and air handlers, especially in areas which have minimum profile requirements.

Up to 50 psi steam

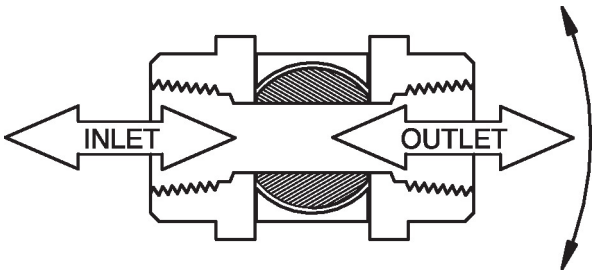
1/2" - 2000 PSIG WOG, Cold Non-Shock

Federal Specification: WW-V-35C, Type II

Composition: SS

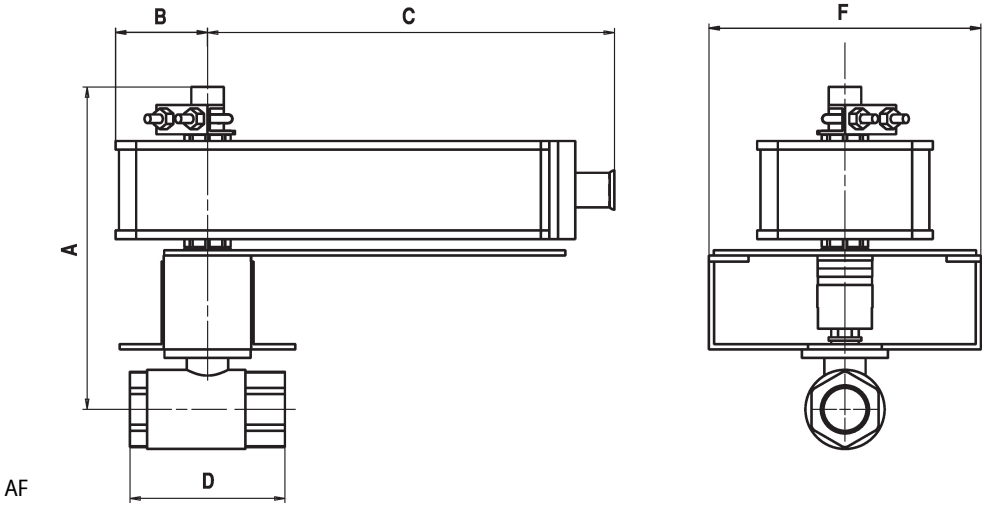
Style: 3

**Flow/Mounting details**



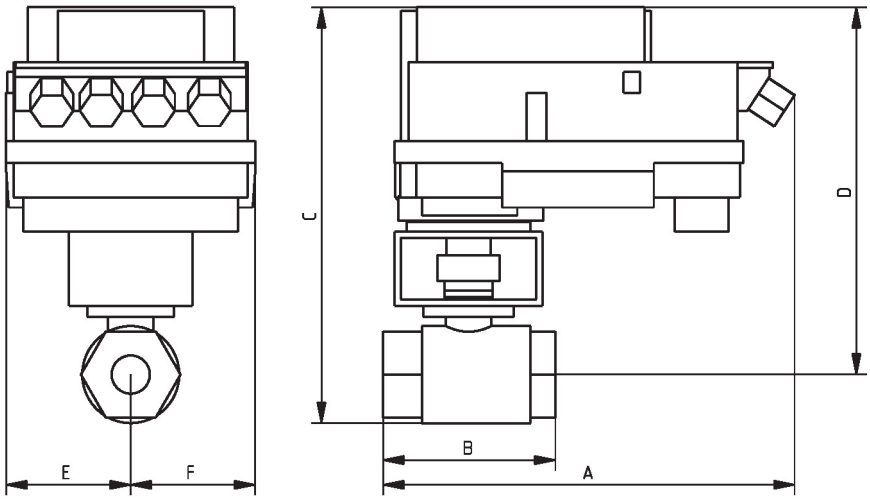

## Dimensions

| Type | DN | Weight |
|---|---|---|
| B224VSS | 25 | 1.8 lb [0.80 kg] |




| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 14.1" [358] | 2.0" [52] | 8.0" [203] | 3.3" [85] | 3.4" [86] | 3.4" [86] |

## Dimensions




B249VSS+PKR..

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 14.1" [358] | 3.4" [86] | 12.1" [307] | 11.1" [283] | 3.4" [86] | 3.4" [86] |

MFT/programmable, Non fail-safe, 24 V

2-year warranty

MFT

## Technical data

| | | |
|---|---|---|
| **Electrical data** | Nominal voltage | AC/DC 24 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Nominal voltage range | AC 19.2...28.8 V / DC 21.6...28.8 V |
| | Power consumption in operation | 3.5 W |
| | Power consumption in rest position | 1.3 W |
| | Electrical Connection | 18 GA appliance cable, 3 ft [1 m], with 1/2" NPT conduit connector |
| | Overload Protection | electronic throughout 0...95° rotation |
| **Functional data** | Torque motor | 20 Nm |
| | Operating range Y | 0...135 Ω |
| | Operating range Y note | Honeywell Electronic Series 90, input 0...135 Ω |
| | Input impedance | 600 Ω |
| | Position feedback U | 2...10 V |
| | Position feedback U note | Max. 0.5 mA |
| | Position feedback U variable | VDC variable |
| | Direction of motion motor | selectable with switch 0/1 |
| | Manual override | external push button |
| | Angle of rotation | Max. 95° |
| | Angle of rotation note | adjustable with mechanical stop |
| | Running Time (Motor) | 150 s / 90° |
| | Running time motor variable | 90...350 s |
| | Noise level, motor | 45 dB(A) |
| | Position indication | Mechanical, 30...65 mm stroke |
| **Safety data** | 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<br>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] |

## Technical data

| | | |
|---|---|---|
| **Safety data** | Storage temperature | -40...176°F [-40...80°C] |
| | Servicing | maintenance-free |
| **Weight** | Weight | 1.9 lb [0.88 kg] |
| **Materials** | Housing material | Galvanized steel and plastic housing |

**Footnotes** †Rated Impulse Voltage 800V, Type action 1, Control Pollution Degree 3.

## Accessories

| Electrical accessories | Description | Type |
|---|---|---|
| | Battery backup system, for non-spring return models | NSV24 US |
| | Battery, 12 V, 1.2 Ah (two required) | NSV-BAT |
| | Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices | ZTH US |

## Electrical installation

**INSTALLATION NOTES**

1 Provide overload protection and disconnect as required.

3 Actuators may also be powered by DC 24 V.

22 Actuators and controller must have separate transformers.

23 Consult controller instruction data for more detailed information.

24 Resistor value depends on the type of controller and the number of actuators. No resistor is used for one actuator. Honeywell® resistor kits may also be used.

25 To reverse control rotation, use the reversing switch.

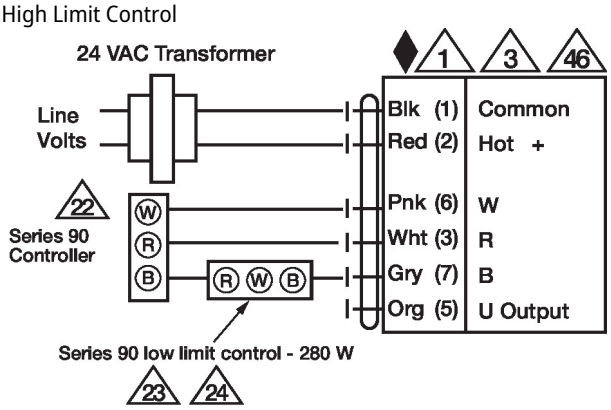
46 Actuators may be controlled in parallel. Current draw and input impedance must be observed.

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

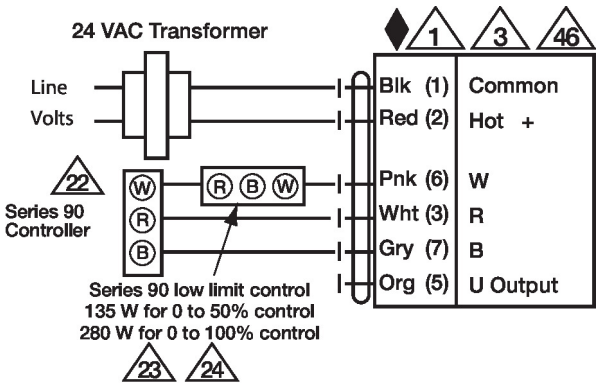
! **Warning! Live electrical components!**
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

### Wiring diagrams

High Limit Control



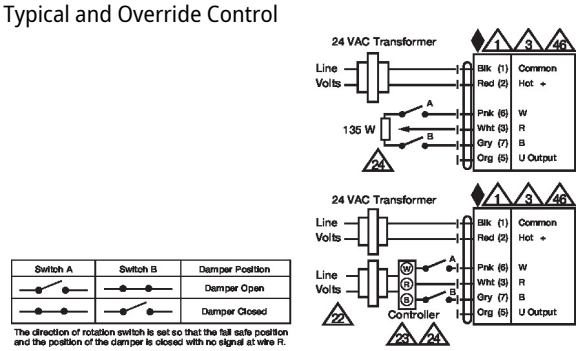

Low Limit Control



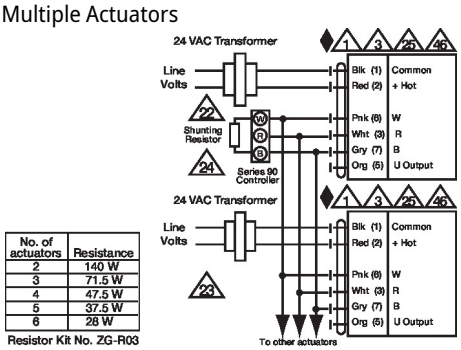
## Electrical installation

### Wiring diagrams

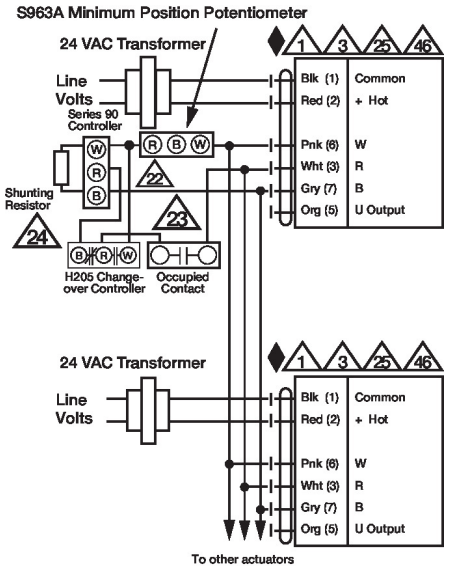
Typical and Override Control




Multiple Actuators




Multiple Actuators with Minimum Position Potentiometer




Multiple Actuators Used with W973, W7100 and T775