BELIMO

# Technical data sheet G780D

5-year warranty

## Type overview

| Type | DN |
|---|---|
| G780D | 80 |

## Technical data

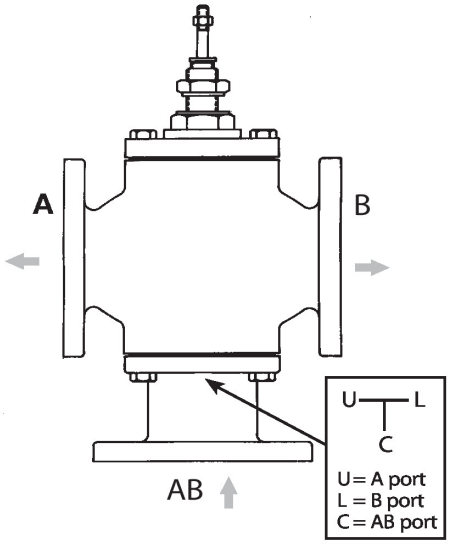
| | | |
|---|---|---|
| **Functional data** | Valve size [mm] | 3" [80] |
| | Fluid | chilled or hot water, up to 60% glycol |
| | Fluid Temp Range (water) | 32...300°F [0...149°C] |
| | Body Pressure Rating | ANSI Class 125, up to 175 psi below 150°F |
| | Flow characteristic | linear |
| | Servicing | repack/rebuild kits available |
| | Rangeability Sv | 50:1 |
| | Flow Pattern | 3-way Diverting |
| | Leakage rate | ANSI Class III |
| | Controllable flow range | stem up - open AB – B |
| | Cv | 85 |
| **Materials** | Valve body | Cast iron - ASTM A126 Class B |
| | Valve plug | bronze |
| | Stem | stainless steel |
| | Stem seal | NLP EPDM (no lip packing) |
| | Seat | Stainless steel AISI 316 |
| | Pipe connection | 125 lb flanged |
| **Suitable actuators** | Non-Spring | EVB(X) |
| | Spring | AF |
| | Electrical fail-safe | AVKB(X) |

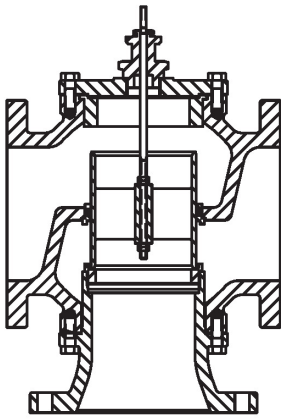
## Safety notes

- 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
- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorized specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

## Product features

### Flow/Mounting details

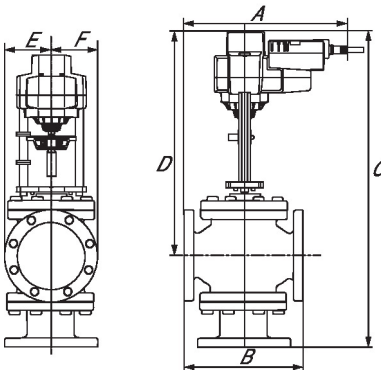


## Dimensions

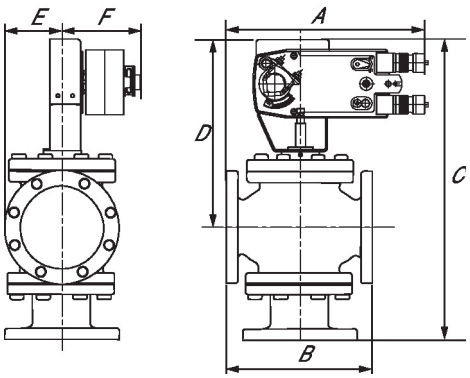
| Type | DN | Weight |
|---|---|---|
| G780D | 80 | 77.18 lb [35 kg] |

EVB, EVX, RVB, RVX



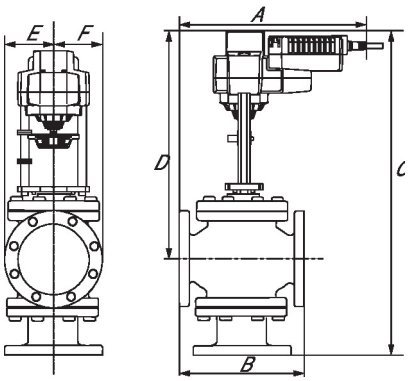

| A | B | C | D | E | F | Number of Bolt Holes |
|---|---|---|---|---|---|---|
| 12.2" [310] | 10.0" [254] | 27.3" [693] | 19.0" [483] | 3.9" [100] | 3.9" [100] | 4 |

AFB, AFX




| A | B | C | D | E | F | Number of Bolt Holes |
|---|---|---|---|---|---|---|
| 12.2" [310] | 10.0" [254] | 25.6" [650] | 17.8" [453] | 3.9" [100] | 5.3" [135] | 4 |

AVKB, AVKX




| A | B | C | D | E | F | Number of Bolt Holes |
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| 12.2" [310] | 10.0" [254] | 27.3" [693] | 19.0" [483] | 3.9" [100] | 3.9" [100] | 4 |

BELIMO

Modulating, Spring Return, 24 V, 0 to 135 Ω
Input

# Technical data sheet AFX24-MFT95-X1

5-year warranty

## 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 | 7.5 W |
| | Power consumption in rest position | 3 W |
| | Transformer sizing | 10 VA |
| | Electrical Connection | 18 GA appliance cable, 1 m, 3 m or 5 m, with 1/2" conduit connector, degree of protection NEMA 2 / IP54 |
| | Overload Protection | electronic throughout 0...95° rotation |
| **Functional data** | Operating range Y | 0...135 Ω |
| | Operating range Y note | Honeywell Electronic Series 90, input 0...135 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 | 5 mm hex crank (3/16" Allen), supplied |
| | Angle of rotation | 95° |
| | Angle of rotation note | adjustable with mechanical end stop, 35...95° |
| | Running Time (Motor) | 150 s / 90° |
| | Running time motor variable | 70...220 s |
| | Running time fail-safe | <20 s |
| | Override control | MIN (minimum position) = 0%<br>MID (intermediate position) = 50%<br>MAX (maximum position) = 100% |
| | Noise level, motor | 40 dB(A) |
| | Noise level, fail-safe | 62 dB(A) |
| | Position indication | Mechanical |
| **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, CE acc. to 2014/30/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] |

| | | |
|---|---|---|
| **Safety data** | Storage temperature | -40...176°F [-40...80°C] |
| | Servicing | maintenance-free |
| **Weight** | Weight | 4.6 lb [2.1 kg] |
| **Materials** | Housing material | Galvanized steel and plastic housing |

**Footnotes** *Variable when configured with MFT options.

## Accessories

| Electrical accessories | Description | Type |
|---|---|---|
| | Service Tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices | ZTH US |

## 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.

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.

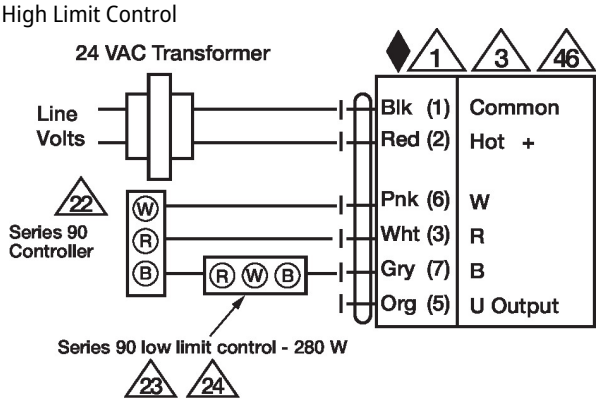
24 Resistor value depends on the type of controller and the number of actuators. No resistor is used for one actuator. Honeywell® resistor kits may also be used.

25 To reverse control rotation, use the reversing switch.

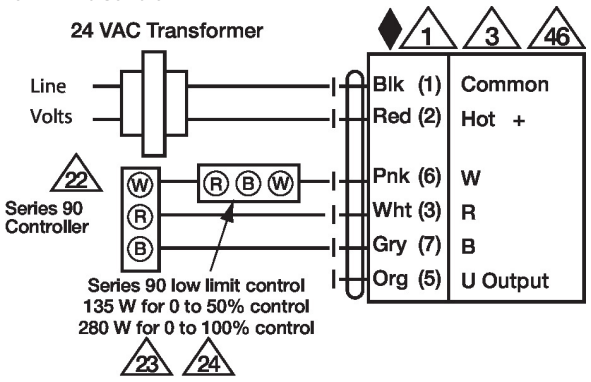
46 Actuators may be controlled in parallel. Current draw and input impedance must be observed.

### Wiring diagrams

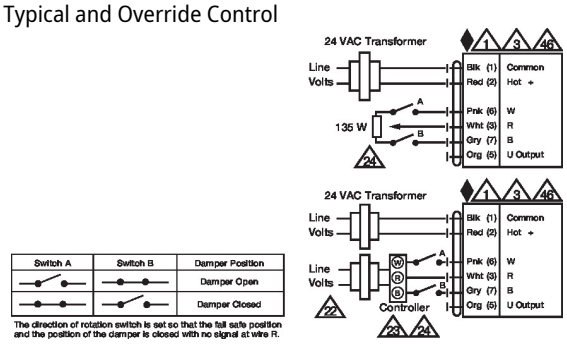
High Limit Control



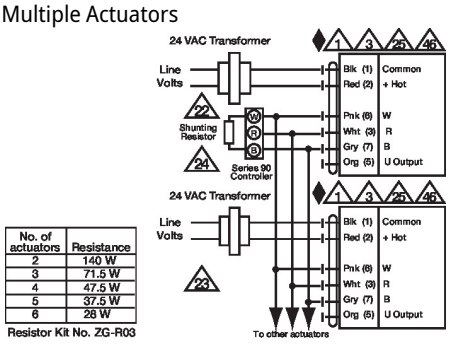

Low Limit Control



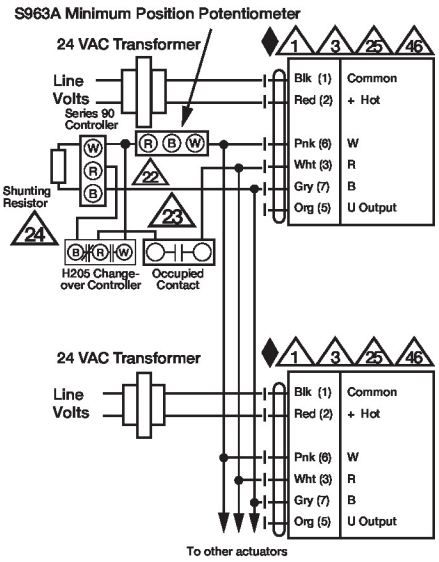

Typical and Override Control




Multiple Actuators



Multiple Actuators with Minimum Position Potentiometer




Multiple Actuators Used with W973, W7100 and T775