

Zone Valves



D-65

Valves

Ranging from 1/2 to 1-inch (15 to 25 mm), the Zone Valves provide excellent control of fan coils, unit ventilators and other applications where on/off, floating or modulating control is required. Featuring direct-coupled technology for quick connection of the valve body and actuator without tools, the Zone Valves and Actuators use all-metal plugs and seat to deliver superior control of water and glycol solutions with NPT or sweat connections.

Features

- Metal-to-metal seat/plug design
- Direct coupled installation of actuator to valve without tools
- UL listed for plenum installations
- Choice of interchangeable on/off (2P), floating and 0-10V modulating actuators
- On/off actuators available in 24V and 120V supply voltages
- Manual override
- Visual position indication

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Two- and Three-Way Zone Valves

1/2 to 1" Brass Body

*Normally Open/Normally Closed/
Diverting*



Two-way Zone Valve.



Three-way Zone Valve.
(Shown with SFA actuator)

Description

Two- and Three-Way Zone Valves have a 1/10-inch (2.5 mm) stroke. The Zone Valves work with any SFA/SFP Series, SSA/SSP Series electric actuator, or with the STA/STP Series Thermic actuator. The actuators accept one of either 24 Vac or 120 Vac power supply signal to provide on/off, floating or 0 to 10 Vdc control.

Features

- All metal plug and seat for superior control
- Direct-coupled universal bonnet — install actuators without tools
- Sweat or NPT end connections
- Order separately or with an actuator as a complete assembly

Applications

Typical applications for Two- and Three-Way Zone Valves are hot or chilled water for zones with radiators; floor heating via manifolds; fan coil units; cooling ceilings; wall-mounted boilers; and VAV applications.

Recommendation:

Use only with Zone Valve Actuators.

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Valves

Two- Three-Way Zone Valve Specifications

Line Size 1/2-inch to 1-inch (15 mm to 25 mm)
Body Style Globe
Action
 2-way NO/NC determined by actuator
 3-way Diverting/Mixing (limited application)
Valve Body Rating ANSI Class 125
Stem Travel (Stroke) 1/10-inch (2.5 mm)
Materials
 Body Brass
 Trim Brass
 Stem Stainless steel ASTM A582 Type 303
 Packing EPDM O-rings

Controlled Medium Water, glycol solutions to 50%
Medium Temperature Range 34 to 230°F (1 to 110°C)
Maximum Inlet Pressure 125 psi
Leakage Rate ANSI Class III
Close-off Ratings According to ANSI/FCI 70-2
Flow Characteristic Linear

Zone Valve Body Product Ordering

Nominal Valve Size		Flow Rate		Part No.	
Inch	Mm	Cv	(Kvs)	NPT	Sweat
Two-way Valve Bodies					
0.5	15	1.0	(0.85)	599-00210	599-00510
0.5	15	2.5	(2.15)	599-00211	599-00511
0.5	15	4.0	(3.4)	599-00214	599-00514
0.75	20	4.1	(3.5)	599-00212	599-00512
1.00	25	7.0	(6.0)	599-00213	599-00513
Three-way Valve Bodies					
0.5	15	1.0	(0.85)	599-00230	599-00530
0.5	15	2.5	(2.15)	599-00231	599-00531
0.5	15	4.0	(3.4)	599-00234	599-00534
0.75	20	4.1	(3.5)	599-00232	599-00532
1.00	25	7.0	(6.0)	599-00233	599-00533

Zone Valve Actuator Product Ordering

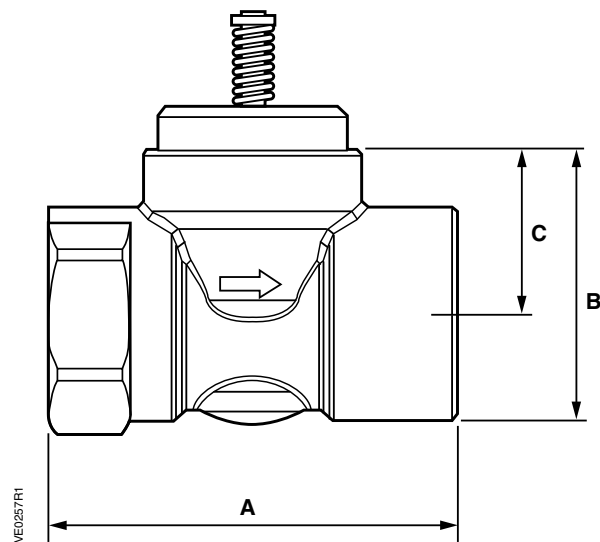
Description			Part No.	Actuator Prefix Code
	2-way Valves	3-way Valves		
	120 Vac, 2-position NC, SR	120 Vac, 2-position Fail AB B	SFA11U	240
	120 Vac, 2-position NO, SR	120 Vac, 2-position Fail AB A	SFP11U	241
	24 Vac, 2-position NC, SR	24 Vac, 2-position Fail AB B	SFA71U	242
	24 Vac, 2-position NO, SR	24 Vac, 2-position Fail AB A	SFP71U	243
	24 Vac floating	24 Vac floating	SSA81U	244
	24 Vac, 0 to 10 Vdc, Modulating NC	24 Vac, 0-10 Vdc, Modulating	SSA61U	245
	24 Vac, 0 to 10 Vdc, Modulating NO	24 Vac, 0-10 Vdc, Modulating	SSP61U	248
	24 Vac/dc, 2-position NC, SR	24 Vac/dc, 2-position Fail AB B	STA71	246
	24 Vac/dc, 2-position NO, SR	24 Vac/dc, 2-position Fail AB A	STP71	247



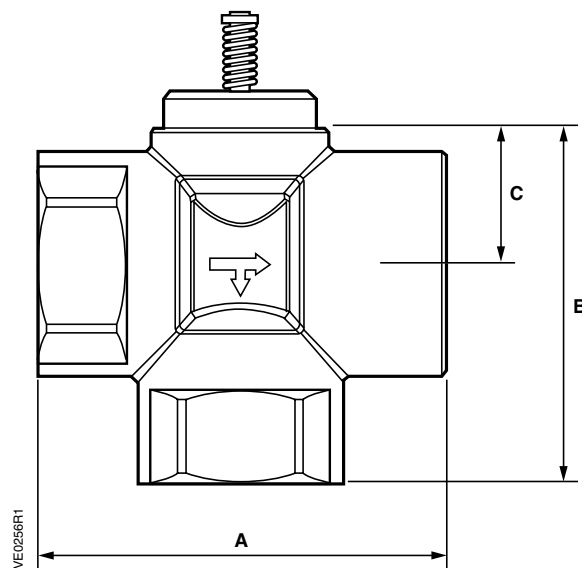
Part No. in black box Ships same day when requested through Rapid Response™ shipping. See inside back cover for details.

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Two-way Zone Valve Body



Three-way Zone Valve Body



Valve Size in. (mm)	2-way Valve				3-way Valve			
	A	B	C	Weight lb. (kg)	A	B	C	Weight lb. (kg)
NPT								
0.5 (15)	2.76 (70)	1.63 (41.5)	1.00 (25.4)	0.82 (0.37)	2.76 (70)	2.34 (59.5)	1.00 (25.4)	1.08 (0.49)
0.75 (20)	2.76 (70)	1.77 (45)	1.00 (25.4)	0.99 (0.45)	2.76 (70)	2.34 (59.5)	1.00 (25.4)	1.26 (0.57)
1.0 (25)	3.50 (89)	2.10 (54)	1.00 (25.4)	1.68 (0.76)	3.50 (89)	2.85 (67.3)	1.00 (25.4)	2.14 (0.97)
Sweat								
0.5 (15)	2.66 (66)	1.48 (38)	1.00 (25.4)	0.60 (0.27)	2.66 (68)	2.26 (57.5)	1.00 (25.4)	0.71 (0.32)
0.75 (20)	2.76 (70)	1.63 (41.5)	1.00 (25.4)	0.71 (0.32)	2.76 (70)	2.34 (59.5)	1.00 (25.4)	0.86 (0.39)
1.00 (25)	3.50 (89)	1.77 (45)	1.00 (25.4)	1.06 (0.48)	3.50 (89)	2.65 (67)	1.00 (25.4)	1.24 (0.56)

Table expressed in inches (mm).

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SFA/SFP Series Electronic Valve Actuator

24 or 120 Vac, 2-position Control



SFA/SFP Series Electronic Valve Actuator.

Description

The SFA/SFP Series of Electronic Valve Actuators accepts 24 Vac or 120 Vac power supply signal to provide two-position control. This actuator works with Zone Valves with 1/10-inch (2.5 mm) stroke.

Features

- UL listed for plenum installations
- Direct coupled installation without tools
- Manual override with auto unlock
- Visual position indication

Applications

The SFA/SFP Series of Electronic Valve Actuators is for use in heating and cooling HVAC applications with Zone Valves.

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Valves

SFA/SFP Zone Valve Specifications

Power Supply
Operating Voltage 24 Vac ±20%, 120 Vac ±20%
Frequency
24 Vac..... 50/60 Hz
120 Vac..... 60 Hz
Power Consumption
24/120 Vac..... 9.8 VA
Function
Running Time 10 seconds
Nominal Stroke..... 1/10-in. (2.5 mm)
Nominal Force 24 lb. (105N)
Agency Certifications..... UL listed to UL873
cUL certified to Canadian Standard
C22.2 No. 24-93

Ambient Temperature
Operation..... 41 to 122°F (5 to 50°C)
Transport and Storage -13 to +158°F (-25 to +70°C)
Mounting Location NEMA 1 (interior only)
Noise <35 db
Medium Temperature 34 to 230°F (1 to 110°C)
Dimensions 3.4" H X 4.4" W X 2.3" D
(85.2 mm H X 111 mm W X 58 mm D)
Shipping Weight 1.18 lb. (0.54 kg)

2-position SFA/SFP Series Actuator
Product Ordering

Description	Part No.	Actuator Prefix Code
Normally Open		
24 Vac	SFP71U	243
120 Vac	SFP11U	241
Normally Closed		
24 Vac	SFA71U	242
120 Vac	SFA11U	240



Accessories & Service Kits

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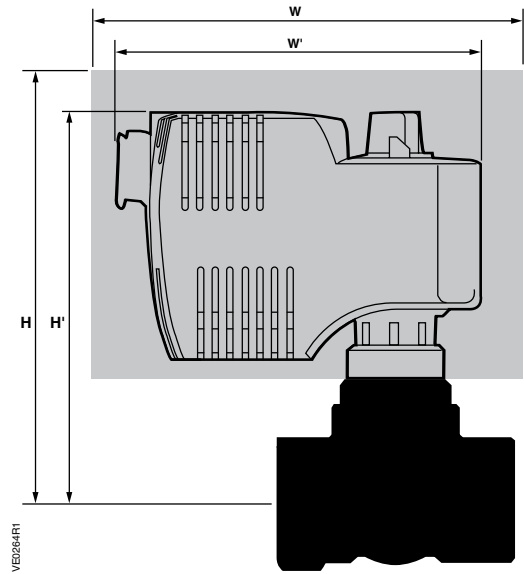


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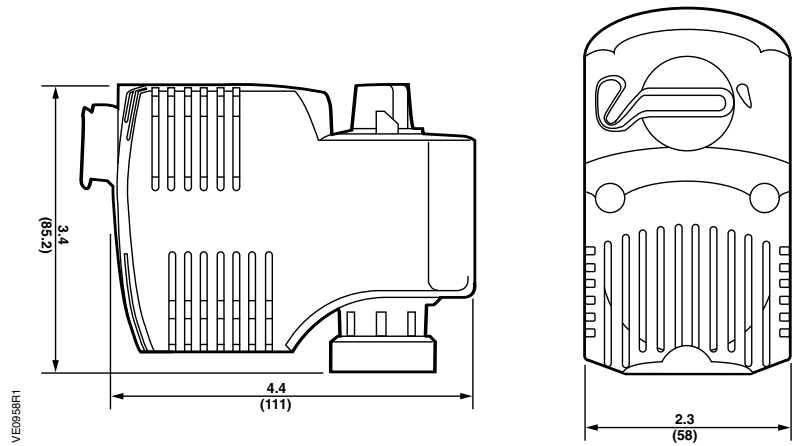
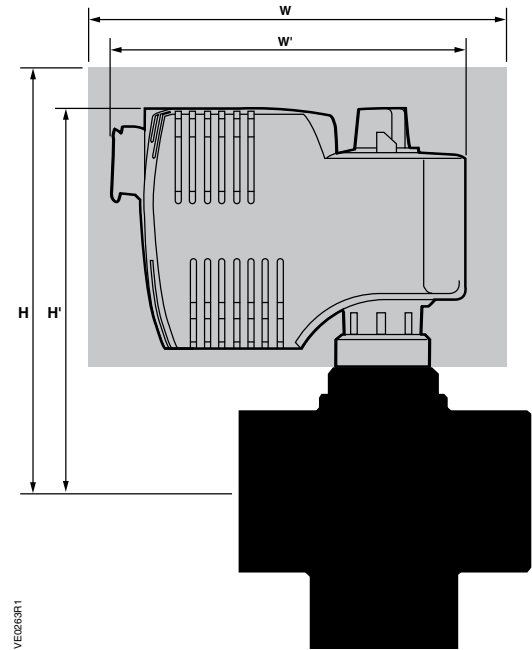
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Dimensions

SFA/SFP Series Actuator:
Service Envelope for 2-way Valve Assembly



SFA/SFP Series Actuator:
Service Envelope for 3-way Valve Assembly



Valve Line Size	Valve Center Line to Top of Actuator H1		Service Height H		Width or Diameter of Actuator W1		Service Width W	
	2-way	3-way	2-way	3-way	2-way	3-way	2-way	3-way
0.5 (15)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)
0.75 (20)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)
1.00 (25)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)	4.38 (112)	4.38 (112)	12.38 (315)	12.38 (315)

Table expressed in inches (mm).

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SSA/SSP Series Electronic Valve Actuator

24 Vac, Floating or 0-10V Control Non-Spring Return



SSA/SSP Series Electronic Valve Actuator.

Description

The SSA/SSP Electronic Valve Actuator requires a 24 Vac power supply and receives a 0 to 10 Vdc signal or a floating control signal to control a valve. This actuator is designed to work with Zone Control Valves with a 1/10-inch (2.5 mm) stroke and a threaded valve bonnet that fits the actuator.

Features

- Direct-coupled installation without tools
- Manual Override with hex wrench
- Visual position indication

Applications

The SSA/SSP Electronic Valve Actuators are for use with heating and cooling HVAC applications with Zone Valves.

D-75

Valves

SSA/SSP Actuator Valve Specifications

Power Supply
Operating Voltage 24 Vac ±20%
Frequency 50/60 Hz

Power Consumption
SSA81 0.8 VA
SSA61 2.0 VA

Agency Certifications CE Conformance
EMC Directive 89/336/EEC
Low Voltage Directive 73/23/EEC
UL listed UL873
cUL certified to Canadian Standard
C22.2 No. 24-93

Function
Running Time
SSA61 34 sec.
SSA81 150 sec.
Nominal Stroke 1/10-inch (2.5 mm)
Nominal Force 24 lb. (105N)

Ambient Temperature
Operation 41 to 122°F (5 to 50°C)
Transport and Storage -13 to +158°F (-25 to +70°C)

Medium Temperature 34 to 230°F (1 to +110°C)

Dimensions 3.4" H X 4.4" W X 2.3" D
(85.2 mm H X 111 mm W X 58 mm D)

Shipping Weight 9 oz. (0.25 kg)

SSA/SSP Series Actuator Product Ordering

Description	Part No.	Actuator Prefix Code
24 Vac, Floating, Normally Closed	SSA81U	244
24 Vac, 0-10 V, Normally Closed	SSA61U	245
24 Vac, 0-10 V, Normally Open	SSP61U	248

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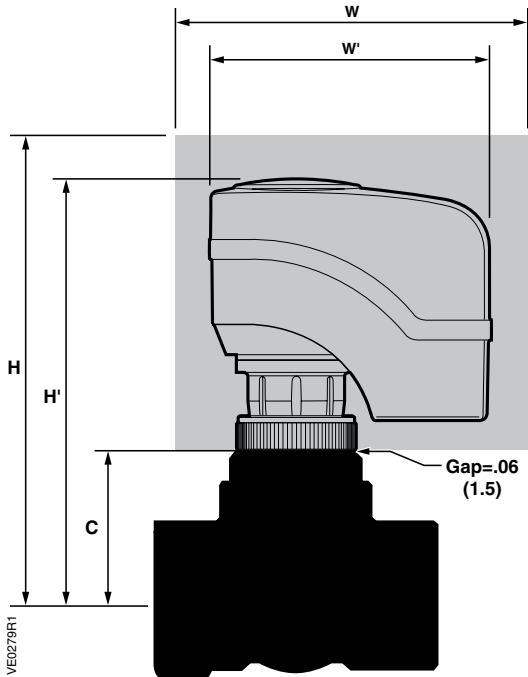
Valves

Accessories & Service Kits

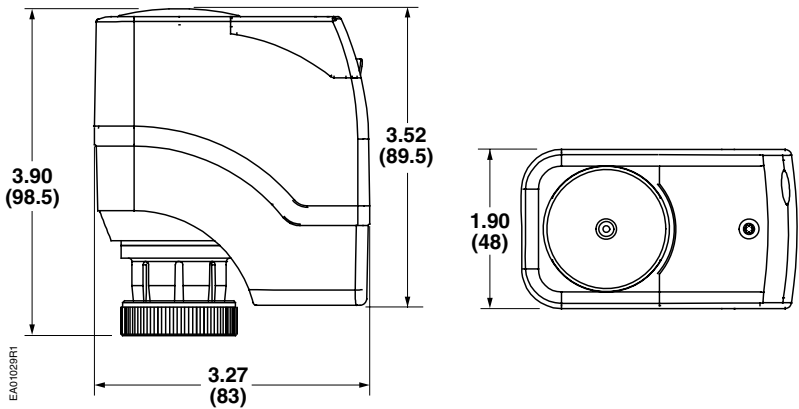
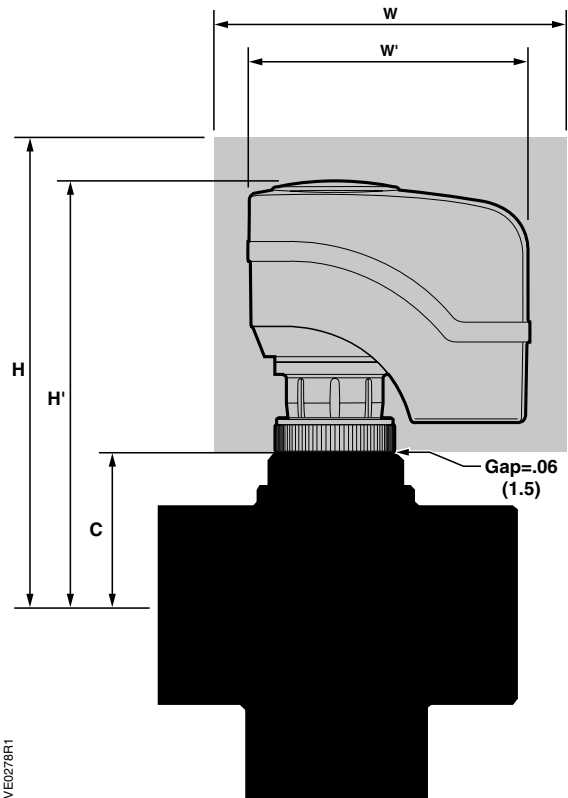
D-219

Dimensions

SSA/SSP Series Actuator:
Service Envelope for 2-way Valve Assembly



SSA/SSP Series Actuator:
Service Envelope for 3-way Valve Assembly



Dimensions shown in inches (mm).

Valve Size	Valve Center Line to Top of Actuator H1		Service Height H		Valve Center Line to Actuator Coupling C		Width or Diameter of Actuator W1		Service Width W	
	2-way	3-way	2-way	3-way	2-way	3-way	2-way	3-way	2-way	3-way
0.5 (15)	4.26 (108.2)	4.26 (108.2)	12.26 (311.4)	12.26 (311.4)	1.00 (25.4)	1.00 (25.4)	3.26 (82.8)	3.26 (82.8)	11.26 (286.0)	11.26 (286.0)
0.75 (20)	4.26 (108.2)	4.26 (108.2)	12.26 (311.4)	12.26 (311.4)	1.00 (25.4)	1.00 (25.4)	3.26 (82.8)	3.26 (82.8)	11.26 (286.0)	11.26 (286.0)
1.00 (25)	4.26 (108.2)	4.26 (108.2)	12.26 (311.4)	12.26 (311.4)	1.00 (25.4)	1.00 (25.4)	3.26 (82.8)	3.26 (82.8)	11.26 (286.0)	11.26 (286.0)

Table expressed in inches (mm).

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Thermic Actuator

24 Vac/Vdc, 2-position control



Thermic Electronic Valve Actuator.

Description

Thermic Actuators require a 24 Vac/Vdc control signal to provide 2-position, NO or NC control. This actuator is designed to work with Zone Valves with a 1/10-inch (2.5 mm) stroke.

Features

- Direct-coupled—install without tools
- Movement and position indication
- Robust, no maintenance required
- Friction-free
- Two-wire connection
- Standard versions with 3.9 foot connecting cable
- PWM control
- AC/DC Two-position control

Applications

Thermic Actuators are for use with 1/10-inch (2.5 mm) stroke Zone Valves.

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Valves

Thermic Actuator Specifications

Power Supply
Supply Voltage 24 Vac, 50 to 60 Hz or 24 Vdc
Power Consumption Normal operation 2.5W; Power on 6 VA
Switch-on Current (transient) 250 mA
Primary Fuse External

Control Signal
Supply Voltage On/off

Stroke 1/10-in. (2.5 mm)

Manual Adjustment None

Position when De-energized
STA71 Actuator shaft extended, valve closed
STP71 Actuator shaft retracted, valve open

Nominal Force 24 lb. (105N)

Maintenance None required

Conditions of Use Indoors

Operation
Temperature 41 to 122°F (5 to 50°C)
Humidity 5 to 85% RH

Storage
Temperature 41 to 122°F (5 to 50°C)
Humidity 5 to 95% RH

Transport
Temperature -4 to +140°F (-20 to +60°C)
Humidity 5 to 95% RH

Mounting
Method Hand-tightened firmly onto the valve
Orientation Upright to horizontal

Agency Approvals Conforms to CE requirements

Dimensions (HXW) 2.44" H X 1.71" W (62 mm H X 43.5 mm W)

Shipping Weight 0.33 lb. (0.15 kg)

2-way Thermic Actuators Product Ordering

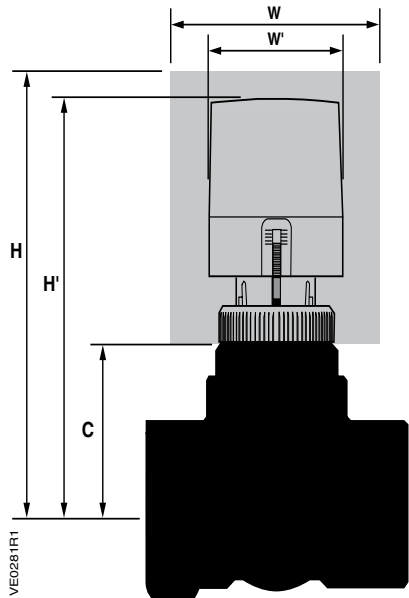
Description	Part No.	Actuator Prefix Code
24 Vac/Vdc, Normally Closed	STA71	246
24 Vac/Vdc, Normally Open	STP71	247

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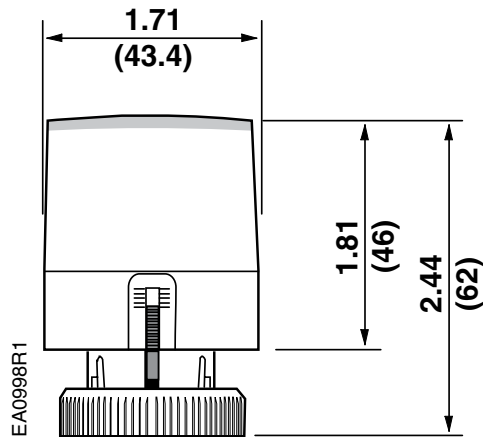
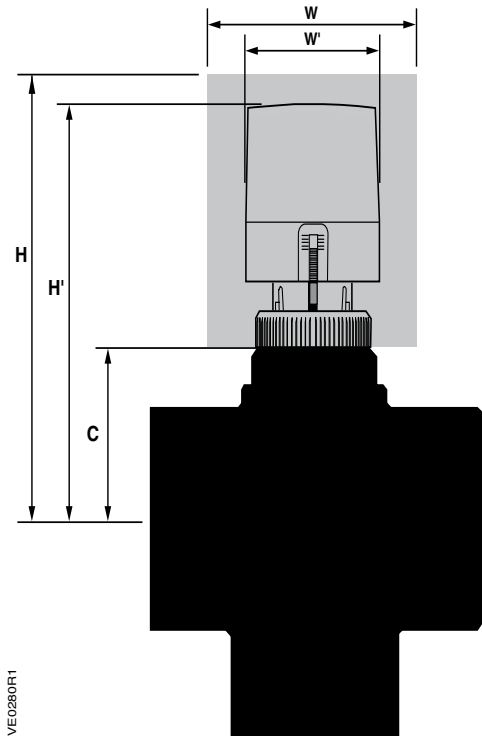
Valves

Dimensions

Thermic Actuator:
2-way Valve Assembly Service Envelope



Thermic Actuator:
3-way Valve Assembly Service Envelope



Dimensions shown in inches (mm).

Valve Size	Valve Center Line to Top of Actuator H1		Service Height H		Valve Center Line to Actuator Coupling C		Width or Diameter of Actuator W1		Service Width W	
	2-way	3-way	2-way	3-way	2-way	3-way	2-way	3-way	2-way	3-way
0.5 (15)	3.44 (87.4)	3.44 (87.4)	7.44 (189)	7.44 (189)	1.00 (25.4)	1.00 (25.4)	1.86 (47.3)	1.86 (47.3)	9.86 (251)	9.86 (251)
0.5 (15)	3.44 (87.4)	3.44 (87.4)	7.44 (189)	7.44 (189)	1.00 (25.4)	1.00 (25.4)	1.86 (47.3)	1.86 (47.3)	9.86 (251)	9.86 (251)
0.75 (20)	3.44 (87.4)	3.44 (87.4)	7.44 (189)	7.44 (189)	1.00 (25.4)	1.00 (25.4)	1.86 (47.3)	1.86 (47.3)	9.86 (251)	9.86 (251)
1.00 (25)	3.44 (87.4)	3.44 (87.4)	7.44 (189)	7.44 (189)	1.00 (25.4)	1.00 (25.4)	1.86 (47.3)	1.86 (47.3)	9.86 (251)	9.86 (251)

Table expressed in inches (mm).

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