SIEMENS

Technical Instructions
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AP 599-3
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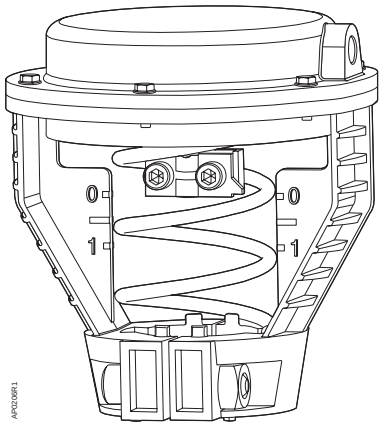
Flowrite™ AP 599 Series

4-inch Pneumatic Valve Actuator



Description

The Flowrite AP 599 Series 4-inch Pneumatic Valve Actuator is designed for use with Flowrite VF 599 Series set valves with a 3/4-inch (20 mm) stroke. This actuator is available with three spring ranges.

Features

- Three spring ranges available
- Large diaphragm area for control accuracy
- Easy installation and removal
- All metal housing

Application

These 4-inch actuators are designed to be used on Flowrite VF 599 Series valves in liquid and steam service applications.

Product Numbers

Table 1. Ordering Information.

Product Number	Spring Range	Actuator Prefix Code
599-01081	3 to 8 psi (21 to 55 kPa)	268
599-01082	5 to 10 psi (34 to 69 kPa)	269
599-01083	10 to 15 psi (69 to 103 kPa)	270

Ordering Information

To order a complete valve plus actuator assembly from the factory, combine the actuator prefix code with the suffix of the valve product number. See *TB 249 Flowrite Valve and Actuator Assembly Selection Technical Bulletin* (155-304P25) for selection procedures.

To order an actuator only, use the product number in Table 1.

Warning/Caution Notations

WARNING:	⚠	Personal injury/loss of life may occur if you do not perform a procedure as specified.
CAUTION:	⚠	Equipment damage may occur if you do not perform a procedure as specified.

Specifications

Effective diaphragm area	11-inch^2 (71 cm^2)
Diaphragm material	Silicone
Nominal spring range	3 to 8 psi (21 to 55 kPa) 5 to 10 psi (34 to 69 kPa) 10 to 15 psi (69 to 103 kPa)
Nominal stroke	3/4-inch (20 mm)
Maximum diaphragm pressure	35 psi (241 kPa)
Air Connection	1/8-inch NPT
Ambient operating and storage temperature	0 to 225°F (-18 to 107°C)
Mounting location	NEMA 1 (interior only)
Dimensions	5-3/4 inch H × 5-1/2 inch diameter (146 mm H × 137 mm diameter)
Weight	2.5 lb (1.1 kg)

Accessory

Finger Guard Kit (Package of one includes two half shells, mounting clips, and installation instructions)	599-10241

Service Kit

Diaphragm replacement kit (Package of one)	599-01093

Operating

The control air signal upon the diaphragm causes the valve to modulate whenever the air pressure is within the spring range of the actuator. The actuator spring provides the necessary force to hold the stem in the stem up position.

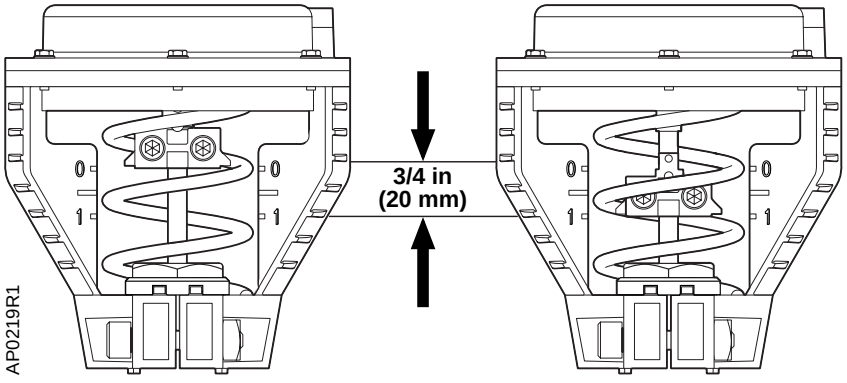


Figure 1. Actuator Operation.

Service

Complete instructions are included in the diaphragm replacement kit.

Diaphragm Replacement

WARNING:

This product contains a spring under high compression. Make sure the valve stem is held securely in the stem retainer before removing the actuator top.

Mounting and Installation

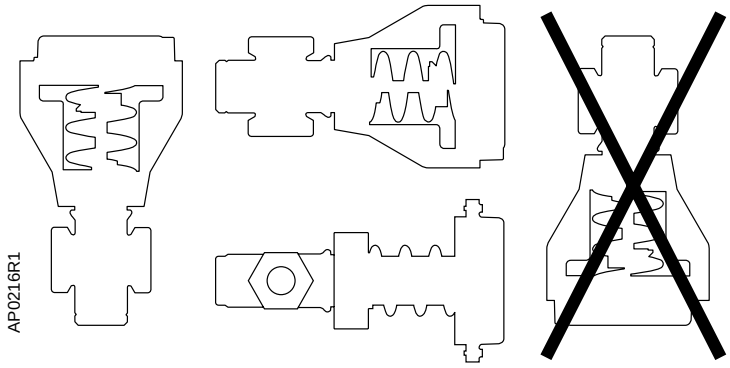


Figure 2. Acceptable Mounting Positions.

Allow eight inches (200 mm) headroom and six inches (150 mm) on either side of the actuator.

For best performance, install the actuator vertically above the valve. The actuator can be installed in any position between vertical and horizontal. Siemens Building Technologies does not recommend installing the actuator below horizontal or up side down. See Figure 2 for allowable mounting positions.

Complete instructions for field mounting the actuator are included with the actuator.

The “0” marking on the actuator yoke indicates stem up position. The “1” mark indicates stem down position. See Figure 1.

Actuator Details

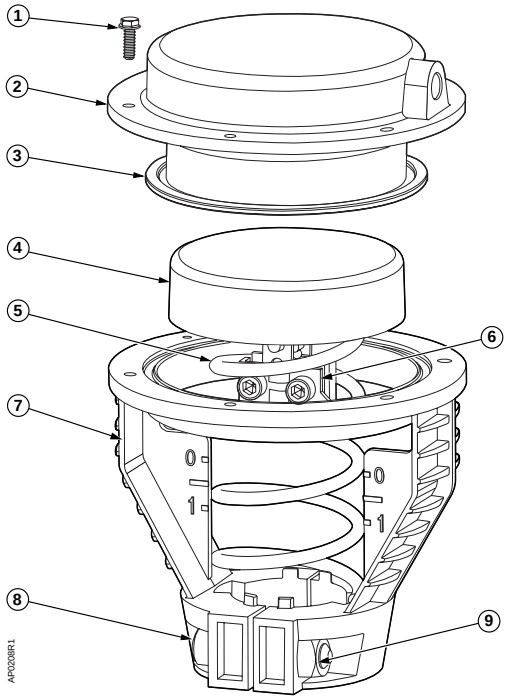


Figure 3. Flowrite AP 599 Series 4-Inch Pneumatic Valve Actuator.

Table 2. Parts List.

Item	Description	Quantity	Material
1	Actuator top screw	6	Plated steel
2	Actuator top	1	Aluminum
3	Diaphragm	1	Silicone
4	Piston cup	1	Aluminum
5	Spring - 3 to 8 and 5 to 10 psi - 10 to 15 psi	1	 Music wire Chrome silicone steel
6	Stem retainer	1	Plated steel
7	Actuator yoke	1	Aluminum
8	Actuator retainer screw	2	Plated steel
9	Actuator retainer nut	2	Plated steel
Diaphragm replacement kit			Item 3 599-01093

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