

SIEMENS

Ingenuity for life



Pressure Independent Control Valves

A control valve, adjustable flow limiter, and automatic pressure regulator combine to simplify installation and commissioning.

A comprehensive portfolio

1/2 to 6-Inch Two-way Pressure Independent Control Valves give you the freedom to choose a better solution

Uniquely designed with three functions integrated into one single device: control valve, adjustable flow limiter, and automatic pressure regulator. This 3-in-1 device improves accuracy and reliability regardless of pressure fluctuations. Count on them to help prolong maintenance and preserve the life of HVAC equipment, enhance room comfort, and optimize energy efficiency.

The combination of control valve and differential pressure regulator in one valve simplifies installation and makes commissioning fast and easy. Pair them with trusted Siemens Electronic Valve Actuators for ideal control in renovation, expansion, and new construction projects.

Straightforward and convenient

Our two-way valves feature an integrated differential pressure regulator that keeps the pressure across the internal control valve constant, while also keeping volumetric flow constant, regardless of pressure fluctuations in the hydronic system. This ensures a higher level of comfort under all operating conditions and maintains return temperatures at the right level. HVAC equipment, such as pumps, can work easier, generating greater savings in maintenance and repair costs while significantly reducing heating and cooling costs.

Our valve actuators feature a modular design for straightforward and consistent installations across the product offering. Our “right-from-the-box” installation philosophy helps save time and money. Known as highly dependable, these actuators are the perfect companion to our innovative valves and provide years of precise control.



FREE sizing and selection tool, SimpleSelect™

Let SimpleSelect™, our Valve Sizing and Selection software tool, simplify time-consuming work by quickly and accurately sizing, selecting, and scheduling valves, actuators, and assemblies. The SimpleSelect tool searches our entire valve and actuator portfolio and speedily finds the products you need. An intuitive, easy-to-use interface helps you quickly size the valve you need with menus that allow you to:

- Select type of valve from the range
- Choose the medium being controlled
- Determine the correct Cv
- Calculate pressure drop and quantity of steam

Download SimpleSelect onto your desktop today!
Visit usa.siemens.com/simpleselect



Achieve hydronic balancing in room, zone and many other HVAC applications.

Here's what makes our PICVs better:

1. Valve Actuator

- Spring return and non-spring return actuators to meet most control requirements
- Visual position indication
- Manual override

2. Field Adjustable Flow Limiter

- Full stroke always maintained with independent flow limiter enabling higher control accuracy
- Easily adjust maximum flow at any time when usage patterns change
- Presetting prevents oversupply to the coil

3. Control Valve

- A comprehensive portfolio of 1/2 to 6 inch PICVs
- Threaded valves are ANSI Class 250
- Flanged valves available in ANSI Class 125 and 250
- 200, 100 and 45 psi close-offs with ANSI Class IV leakage
- Brass trim with stainless steel stem

4. Automatic Differential Pressure Regulator

- Automatically adjusts to pressure fluctuations in the system, maintaining consistent flow at any given control setting, providing better comfort and lower energy consumption.
- No mutual hydronic interaction between branches with different operational situations, preventing over- or under-supply.
- Fast commissioning with extremely simplified hydronic balancing

5. Optional P/T (pressure/temperature) Test Points

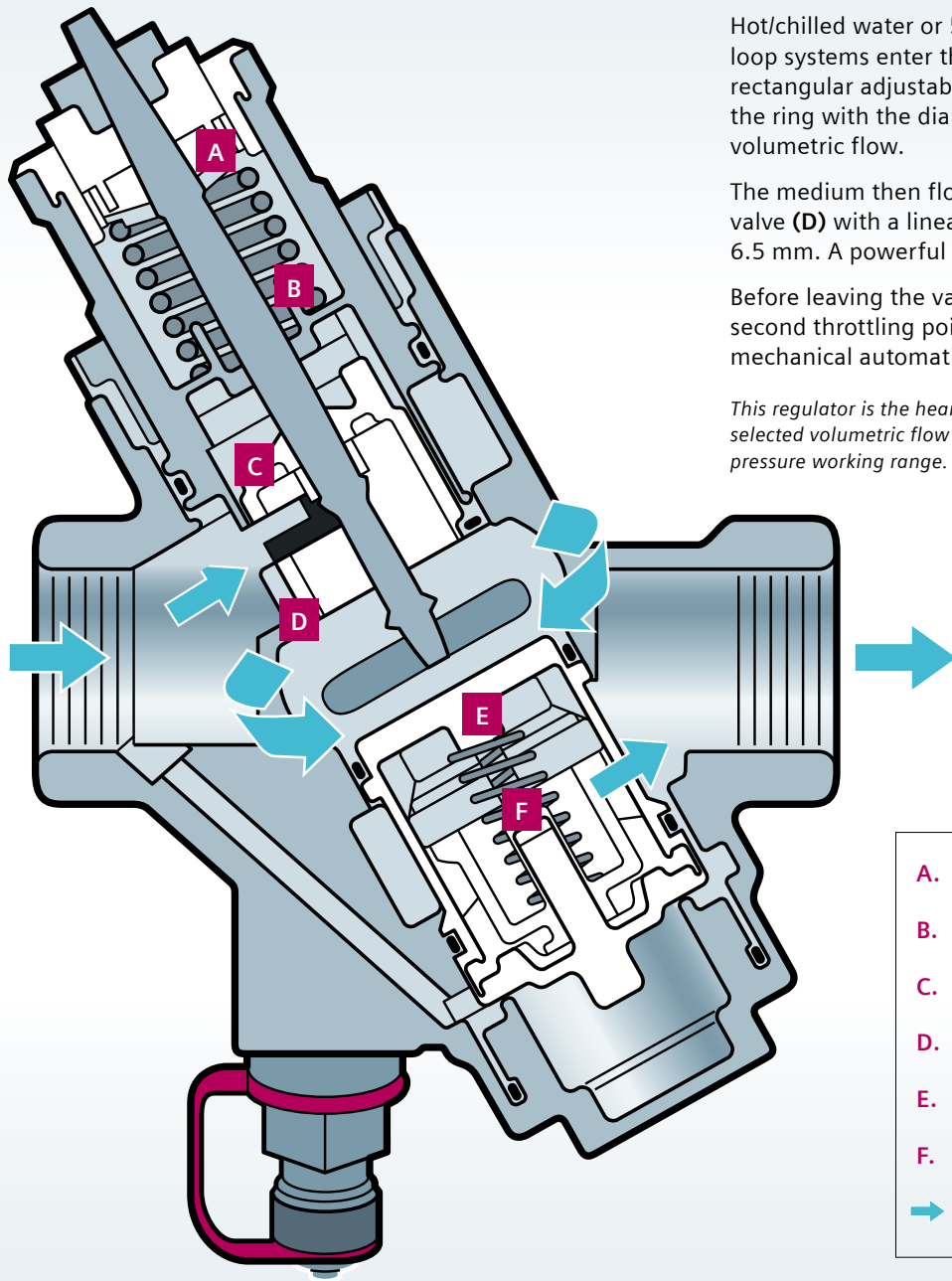
- Straightforward testing and setting of optimum differential pressure when commissioning
- Allow simplified troubleshooting during system operation
- P/T plug set accessory kit part number 599-10079



FREE factory assembly and valve tagging

Valves and valve actuators are assembled and tagged for direct delivery to any job-site, free of charge. All you have to do is specify each valve's location when placing your initial order and we will tag them before shipping to save you installation time and expense. Request this complimentary service when ordering by phone or online at usa.siemens.com/buildingtechnologiesonlineordering

Here's how it works:



Hot/chilled water or 50% water-glycol solutions in closed loop systems enter the valve and pass through a variable rectangular adjustable flow limiter (C) that is connected to the ring with the dial (A) for presetting the maximum volumetric flow.

The medium then flows through the temperature control valve (D) with a linear characteristic and a stroke of 5 or 6.5 mm. A powerful spring (B) ensures safe closing.

Before leaving the valve, the medium passes through a second throttling point (E) controlled by the built-in mechanical automatic differential pressure regulator (F).

This regulator is the heart of the valve and ensures that the selected volumetric flow is maintained across the whole differential pressure working range.

- A. Presetting dial
- B. Closing spring
- C. Throttling point linked to A
- D. Control seat and plug
- E. Pressure regulator's throttling point
- F. Differential pressure regulator
- Flow path

Looking for technical specifications or installation instructions?

Go to usa.siemens.com/buildingtechnologiesonlineordering anytime to download and order what you need for smooth installation or servicing: Find Instructions for field mounting an actuator, wiring diagrams, and start-up.

Two-way, ANSI Class 250, 1/2 to 1-1/4 Inch Valves with 200 psi Close-offs



Valve Body			Normally Open			
			Non-spring Return Actuator		Spring Return Actuator	
Part No.	Valve Size Inch (mm)	Factory Preset Max. GPM	SSD81U Floating	SSD61U 0-10V	SSD81.5U Floating	SSD61.5U 0-10V
			Prefix Code	Prefix Code	Prefix Code	Prefix Code
			230	231	232	233
599-04310-0.5	1/2 (15)	0.5	230-04310-0.5	231-04310-0.5	232-04310-0.5	233-04310-0.5
599-04311-1		1.0	230-04311-1	231-04311-1	232-04311-1	233-04311-1
599-04311-1.5		1.5	230-04311-1.5	231-04311-1.5	232-04311-1.5	233-04311-1.5
599-04311-2		2.0	230-04311-2	231-04311-2	232-04311-2	233-04311-2
599-04311-2.5		2.5	230-04311-2.5	231-04311-2.5	232-04311-2.5	233-04311-2.5
599-04312-1	3/4 (20)	1.0	230-04312-1	231-04312-1	232-04312-1	233-04312-1
599-04312-1.5		1.5	230-04312-1.5	231-04312-1.5	232-04312-1.5	233-04312-1.5
599-04312-2		2.0	230-04312-2	231-04312-2	232-04312-2	233-04312-2
599-04312-2.5		2.5	230-04312-2.5	231-04312-2.5	232-04312-2.5	233-04312-2.5
599-04312-3		3.0	230-04312-3	231-04312-3	232-04312-3	233-04312-3
599-04312-3.5		3.5	230-04312-3.5	231-04312-3.5	232-04312-3.5	233-04312-3.5
599-04312-4		4.0	230-04312-4	231-04312-4	232-04312-4	233-04312-4
599-04312-4.5		4.5	230-04312-4.5	231-04312-4.5	232-04312-4.5	233-04312-4.5
599-04312-5		5.0	230-04312-5	231-04312-5	232-04312-5	233-04312-5
599-04312-5.5		5.5	230-04312-5.5	231-04312-5.5	232-04312-5.5	233-04312-5.5
599-04313-5	1 (25)	5	230-04313-5	231-04313-5	232-04313-5	233-04313-5
599-04313-6		6	230-04313-6	231-04313-6	232-04313-6	233-04313-6
599-04313-7		7	230-04313-7	231-04313-7	232-04313-7	233-04313-7
599-04313-8		8	230-04313-8	231-04313-8	232-04313-8	233-04313-8
599-04314-9	1-1/4 (32)	9	230-04314-9	231-04314-9	232-04314-9	233-04314-9
599-04314-10		10	230-04314-10	231-04314-10	232-04314-10	233-04314-10
599-04314-11		11	230-04314-11	231-04314-11	232-04314-11	233-04314-11
599-04314-12		12	230-04314-12	231-04314-12	232-04314-12	233-04314-12
599-04314-13		13	230-04314-13	231-04314-13	232-04314-13	233-04314-13
599-04314-14		14	230-04314-14	231-04314-14	232-04314-14	233-04314-14
599-04314-15		15	230-04314-15	231-04314-15	232-04314-15	233-04314-15
599-04314-16		16	230-04314-16	231-04314-16	232-04314-16	233-04314-16
599-04314-17		17	230-04314-17	231-04314-17	232-04314-17	233-04314-17
599-04314-18		18	230-04314-18	231-04314-18	232-04314-18	233-04314-18



SSD Series Electronic Valve Actuators are for use with 1/2-inch to 1-1/4-inch Pressure Independent Control Valves with 200 psi close-offs and ANSI Class IV leakage.

- Normally Open
- Positioning force >56 lbs (250 N)
- Floating or 0 to 10 Vdc control
- Spring return and non-spring return variants
- Automatic stroke calibration on the SSD61...
- Reduced power consumption in holding position

Two-way, ANSI Class 250, 1-1/2 to 2 Inch Valves with 100 psi Close-offs



Valve Body			Normally Open or Closed Non-spring Return Actuator	
Part No.	Valve Size Inch (mm)	Factory Preset Max. GPM	SAY81.03U Floating	SAY61.03U 0-10V & 4-20mA
			Prefix Code	Prefix Code
			334	335
599-04315-15	1-1/2 (40)	15	334-04315-15	335-04315-15
599-04315-20		20	334-04315-20	335-04315-20
599-04315-25		25	334-04315-25	335-04315-25
599-04315-30		30	334-04315-30	335-04315-30
599-04315-35		35	334-04315-35	335-04315-35
599-04315-40		40	334-04315-40	335-04315-40
599-04316-20	2 (50)	20	334-04316-20	335-04316-20
599-04316-25		25	334-04316-25	335-04316-25
599-04316-30		30	334-04316-30	335-04316-30
599-04316-35		35	334-04316-35	335-04316-35
599-04316-40		40	334-04316-40	335-04316-40
599-04316-45		45	334-04316-45	335-04316-45
599-04316-50		50	334-04316-50	335-04316-50

SAY actuators can be wired for normally closed operation.
0-10V actuators require AZX61.1 Function Module, refer to technical instructions.



- SAY Series Valve Actuators** are for use with 1-1/2-inch to 2-inch Pressure Independent Control Valves with 100 psi close-offs and ANSI Class IV leakage.
- Normally Open or Closed
 - Positioning force > 45 lbs (200 N)
 - Floating (3P), 0 to 10 Vdc or 24 Vac control
 - Non-spring return
 - Maintenance-free

Two-way, ANSI Class 250, 1/2 to 3/4 Inch Valves with 45 psi Close-offs



Valve Body			Normally Closed			
			Non-spring Return Actuator		Spring Return Actuator	
Part No.	Valve Size Inch (mm)	Factory Preset Max. GPM	SSD81U Floating	SSD61U 0-10V	SSD81.5U Floating	SSD61.5U 0-10V
			Prefix Code		Prefix Code	
			230	231	232	233
599-04300-0.5	1/2 (15)	0.5	230-04300-0.5	231-04300-0.5	232-04300-0.5	233-04300-0.5
599-04300-1		1.0	230-04300-1	231-04300-1	232-04300-1	233-04300-1
599-04300-1.5		1.5	230-04300-1.5	231-04300-1.5	232-04300-1.5	233-04300-1.5
599-04300-2		2.0	230-04300-2	231-04300-2	232-04300-2	233-04300-2
599-04300-2.5		2.5	230-04300-2.5	231-04300-2.5	232-04300-2.5	233-04300-2.5
599-04301-3		3.0	230-04301-3	231-04301-3	232-04301-3	233-04301-3
599-04301-3.5		3.5	230-04301-3.5	231-04301-3.5	232-04301-3.5	233-04301-3.5
599-04301-4		4.0	230-04301-4	231-04301-4	232-04301-4	233-04301-4
599-04301-4.5		4.5	230-04301-4.5	231-04301-4.5	232-04301-4.5	233-04301-4.5
599-04301-5		5.0	230-04301-5	231-04301-5	232-04301-5	233-04301-5
599-04301-5.5		5.5	230-04301-5.5	231-04301-5.5	232-04301-5.5	233-04301-5.5
599-04301-6		6.0	230-04301-6	231-04301-6	232-04301-6	233-04301-6
599-04301-6.5		6.5	230-04301-6.5	231-04301-6.5	232-04301-6.5	233-04301-6.5
599-04301-7		7.0	230-04301-7	231-04301-7	232-04301-7	233-04301-7
599-04301-7.5		7.5	230-04301-7.5	231-04301-7.5	232-04301-7.5	233-04301-7.5
599-04302-1	3/4 (20)	1.0	230-04302-1	231-04302-1	232-04302-1	233-04302-1
599-04302-1.5		1.5	230-04302-1.5	231-04302-1.5	232-04302-1.5	233-04302-1.5
599-04302-2		2.0	230-04302-2	231-04302-2	232-04302-2	233-04302-2
599-04302-2.5		2.5	230-04302-2.5	231-04302-2.5	232-04302-2.5	233-04302-2.5
599-04302-3		3.0	230-04302-3	231-04302-3	232-04302-3	233-04302-3
599-04302-3.5		3.5	230-04302-3.5	231-04302-3.5	232-04302-3.5	233-04302-3.5
599-04302-4		4.0	230-04302-4	231-04302-4	232-04302-4	233-04302-4
599-04302-4.5		4.5	230-04302-4.5	231-04302-4.5	232-04302-4.5	233-04302-4.5
599-04303-5		5.0	230-04303-5	231-04303-5	232-04303-5	233-04303-5
599-04303-5.5		5.5	230-04303-5.5	231-04303-5.5	232-04303-5.5	233-04303-5.5
599-04303-6		6.0	230-04303-6	231-04303-6	232-04303-6	233-04303-6
599-04303-6.5		6.5	230-04303-6.5	231-04303-6.5	232-04303-6.5	233-04303-6.5
599-04303-7		7.0	230-04303-7	231-04303-7	232-04303-7	233-04303-7
599-04303-7.5		7.5	230-04303-7.5	231-04303-7.5	232-04303-7.5	233-04303-7.5
599-04303-8		8.0	230-04303-8	231-04303-8	232-04303-8	233-04303-8
599-04303-8.5	8.5	230-04303-8.5	231-04303-8.5	232-04303-8.5	233-04303-8.5	



SSD Series Electronic Valve Actuators are for use with 1/2-inch to 1-1/4-inch Pressure Independent Control Valves with 45 psi close-offs and ANSI Class IV leakage.

- Positioning force >56 lbs (250 N)
- Floating or 0 to 10 Vdc control
- Spring return and non-spring return variants
- Automatic stroke calibration on the SSD61...
- Reduced power consumption in holding position

Two-way, ANSI Class 250, 1 to 1-1/4 Inch Valves
with 45 psi Close-offs



Valve Body			Normally Closed			
			Non-spring Return Actuator		Spring Return Actuator	
Part No.	Valve Size Inch (mm)	Factory Preset Max. GPM	SSD81U Floating	SSD61U 0-10V	SSD81.5U Floating	SSD61.5U 0-10V
			Prefix Code		Prefix Code	
			230	231	232	233
599-04304-1	1	1	230-04304-1	231-04304-1	232-04304-1	233-04304-1
599-04304-2		2	230-04304-2	231-04304-2	232-04304-2	233-04304-2
599-04304-3		3	230-04304-3	231-04304-3	232-04304-3	233-04304-3
599-04304-4		4	230-04304-4	231-04304-4	232-04304-4	233-04304-4
599-04304-5		5	230-04304-5	231-04304-5	232-04304-5	233-04304-5
599-04304-6		6	230-04304-6	231-04304-6	232-04304-6	233-04304-6
599-04304-7		7	230-04304-7	231-04304-7	232-04304-7	233-04304-7
599-04304-8		8	230-04304-8	231-04304-8	232-04304-8	233-04304-8
599-04304-9		9	230-04304-9	231-04304-9	232-04304-9	233-04304-9
599-04305-3	1-1/4	3	230-04305-3	231-04305-3	232-04305-3	233-04305-3
599-04305-4		4	230-04305-4	231-04305-4	232-04305-4	233-04305-4
599-04305-5		5	230-04305-5	231-04305-5	232-04305-5	233-04305-5
599-04305-6		6	230-04305-6	231-04305-6	232-04305-6	233-04305-6
599-04305-7		7	230-04305-7	231-04305-7	232-04305-7	233-04305-7
599-04305-8		8	230-04305-8	231-04305-8	232-04305-8	233-04305-8
599-04305-9		9	230-04305-9	231-04305-9	232-04305-9	233-04305-9
599-04305-10		10	230-04305-10	231-04305-10	232-04305-10	233-04305-10
599-04305-11		11	230-04305-11	231-04305-11	232-04305-11	233-04305-11
599-04305-12		12	230-04305-12	231-04305-12	232-04305-12	233-04305-12
599-04305-13	13	230-04305-13	231-04305-13	232-04305-13	233-04305-13	



SSD Series Electronic Valve Actuators are for use with 1/2-inch to 1-1/4-inch Pressure Independent Control Valves with 45 psi close-offs and ANSI Class IV leakage.

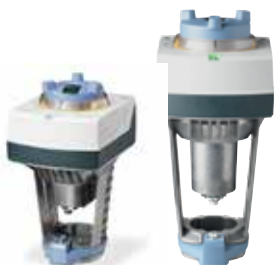
- Positioning force >56 lbs (250 N)
- Floating or 0 to 10 Vdc control
- Spring return and non-spring return variants
- Automatic stroke calibration on the SSD61...
- Reduced power consumption in holding position

Two-way, Flanged, 2-1/2 to 6 Inch Valves with 100 psi Close-offs and Electronic Non-spring Return Actuators



Valve Body			Normally Open or Closed			
			Non-spring Return Actuator			
Part No.	Valve Size Inch (mm)	Maximum Flow	SAX81.03U Floating	SAV81.00U Floating	SAX61.03U 0-10V	SAV61.00U 0-10V
			Prefix Code	Prefix Code	Prefix Code	Prefix Code
			373	379	371	378
ANSI CLASS 125						
599-07310	2-1/2	110	373-07310	–	371-07310	–
599-07315		154	373-07315	–	371-07315	–
599-07311	3	150	373-07311	–	371-07311	–
599-07316		190	373-07316	–	371-07316	–
599-07312	4	300	–	379-07312	–	378-07312
599-07317		395	–	379-07317	–	378-07317
599-07313	5	485	–	379-07313	–	378-07313
599-07318		595	–	379-07318	–	378-07318
599-07314	6	650	–	379-07314	–	378-07314
599-07319		860	–	379-07319	–	378-07319
ANSI CLASS 250						
599-07320	2-1/2	110	373-07320	–	371-07320	–
599-07325		154	373-07325	–	371-07325	–
599-07321	3	150	373-07321	–	371-07321	–
599-07326		190	373-07326	–	371-07326	–
599-07322	4	300	–	379-07322	–	378-07322
599-07327		395	–	379-07327	–	378-07327
599-07323	5	485	–	379-07323	–	378-07323
599-07328		595	–	379-07328	–	378-07328
599-07324	6	650	–	379-07324	–	378-07324
599-07329		860	–	379-07329	–	378-07329

SAX and SAV actuators can be wired for normally closed operation.
0-10V actuators require AZX61.1 Function Module, refer to technical instructions.



SAX Series Valve Actuators are for use with 2-1/2-inch to 6-inch Flanged Pressure Independent Control Valves.

- 180 lb (800 N) nominal force
- 24 Vac/dc operation
- Non-spring return
- Proportional or floating (3P) control

SAV Series Electronic Valve Actuators are for use with 2-1/2-inch to 6-inch Flanged Pressure Independent Control Valves.

- 360 lb (1600 N) nominal force
- 24 Vac/dc operation
- Non-spring return
- Proportional or floating (3P) control

Two-way, Flanged, 2-1/2 to 6 Inch Valves with 100 psi Close-offs and Electronic Spring Return Actuators



Valve Body			Normally Open	Normally Closed
			Spring Return Actuator	
Part No.	Valve Size Inch (mm)	Maximum Flow	SQV91P30U	SQV91P40U
			Normally Open	Normally Closed
			Floating, 0-10 V, 4-20 mA	Floating, 0-10 V, 4-20 mA
			Prefix Code	Prefix Code
			238	239
ANSI CLASS 125				
599-07310	2-1/2	110	238-07310	239-07310
599-07315		154	238-07315	239-07315
599-07311	3	150	238-07311	239-07311
599-07316		190	238-07316	239-07316
599-07312	4	300	238-07312	239-07312
599-07317		395	238-07317	239-07317
599-07313	5	485	238-07313	239-07313
599-07318		595	238-07318	239-07318
599-07314	6	650	238-07314	239-07314
599-07319		860	238-07319	239-07319
ANSI CLASS 250				
599-07320	2-1/2	110	238-07320	239-07320
599-07325		154	238-07325	239-07325
599-07321	3	150	238-07321	239-07321
599-07326		190	238-07326	239-07326
599-07322	4	300	238-07322	379-07322
599-07327		395	238-07327	379-07327
599-07323	5	485	238-07323	379-07323
599-07328		595	238-07328	379-07328
599-07324	6	650	238-07324	379-07324
599-07329		860	238-07329	379-07329



SQV Series Electronic Valve Actuators are for use with 2-1/2-inch to 6-inch Flanged Pressure Independent Control Valves.

- Positioning force >247 lbs (1100 N)
- 24 Vac/dc operating voltage
- Fail-safe function

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