

Powermite 599, ANSI Class 250 MT Series Terminal Unit 2-Way Valves



Description

The Powermite 599 Series ANSI Class 250 MT Series 2-way valve bodies work with any MT Series pneumatic or electronic actuator with a 7/32-inch (5.5-mm) stroke. They are suitable for normally open or normally closed control. Typical applications include control of hot or chilled water, water-glycol solutions up to 50% and steam up to 15 psi (steam only with stainless steel trim). Compatible actuators deliver a minimum of 67 lbs (300 N) of force.

Features

- Direct-coupled universal bonnet
- Female NPT end connections with either brass trim or stainless steel trim.
- ANSI Leakage Class IV (0.01% of Cv)

Product Numbers

Use the product numbers in the tables to order the valve and the actuator assembled together. The product number consists of a 3-digit prefix code, a hyphen, and a 5-digit suffix code. The prefix specifies an actuator. The suffix specifies the valve body.

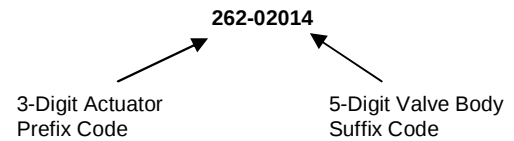


Table 1. 2-Way Valve and Actuator Assemblies with Brass Trim and Female NPT Connections.

		Valve Size, Inch	Cv (Kvs)	2-Inch Pneumatic Actuators, Spring Return (Fail-safe *)			Electro-mechanical, 24V							
				10-15 psi (69-103 kPa)	3-8 psi (21-55 kPa)	8-13 psi (55-90 kPa)	SSC81U Floating, NSR	SSC81.5U Floating, SR	SSC61U 0-10V, NSR	SSC61.5U 0-10V, SR	SAS81.03U Floating, NSR	SAS81.33U Floating, SR	SAS61.03U 0-10V/4-20 mA NSR	SAS61.33U 0-10V/4-20 mA SR
														
				Actuator Prefix Code										
				256	257	258	259	260	261	262	363	366	364	365
Normally Closed	599-02000	1/2	0.4 (0.34)	256-02000	257-02000B	258-02000C	259-02000	260-02000	261-02000	262-02000	363-02000	366-02000	364-02000	365-02000
	599-02002	1/2	0.63 (0.54)	256-02002	257-02002B	258-02002C	259-02002	260-02002	261-02002	262-02002	363-02002	366-02002	364-02002	365-02002
	599-02004	1/2	1 (0.85)	256-02004	257-02004B	258-02004C	259-02004	260-02004	261-02004	262-02004	363-02004	366-02004	364-02004	365-02004
	599-02006	1/2	1.6 (1.37)	256-02006	257-02006B	258-02006C	259-02006	260-02006	261-02006	262-02006	363-02006	366-02006	364-02006	365-02006
	599-02008	1/2	2.5 (2.14)	256-02008	257-02008B	258-02008C	259-02008	260-02008	261-02008	262-02008	363-02008	366-02008	364-02008	365-02008
	599-02010	1/2	4 (3.42)	256-02010	257-02010B	258-02010C	259-02010	260-02010	261-02010	262-02010	363-02010	366-02010	364-02010	365-02010
	599-02012	3/4	6.3 (5.38)	256-02012	257-02012B	258-02012C	259-02012	260-02012	261-02012	262-02012	363-02012	366-02012	364-02012	365-02012
	599-02014	1	10 (8.55)	256-02014	257-02014B	258-02014C	259-02014	260-02014	261-02014	262-02014	363-02014	366-02014	364-02014	365-02014
Normally Open	599-02030	1/2	0.4 (0.34)	256-02030A	257-02030	258-02030C	259-02030	260-02030	261-02030	262-02030	363-02030	366-02030	364-02030	365-02030
	599-02032	1/2	0.63 (0.54)	256-02032A	257-02032	258-02032C	259-02032	260-02032	261-02032	262-02032	363-02032	366-02032	364-02032	365-02032
	599-02034	1/2	1 (0.85)	256-02034A	257-02034	258-02034C	259-02034	260-02034	261-02034	262-02034	363-02034	366-02034	364-02034	365-02034
	599-02036	1/2	1.6 (1.37)	256-02036A	257-02036	258-02036C	259-02036	260-02036	261-02036	262-02036	363-02036	366-02036	364-02036	365-02036
	599-02038	1/2	2.5 (2.14)	256-02038A	257-02038	258-02038C	259-02038	260-02038	261-02038	262-02038	363-02038	366-02038	364-02038	365-02038
	599-02041	1/2	4 (3.42)	256-02041A	257-02041	258-02041C	259-02041	260-02041	261-02041	262-02041	363-02041	366-02041	364-02041	365-02041
	599-02044	3/4	6.3 (5.38)	256-02044A	257-02044	258-02044C	259-02044	260-02044	261-02044	262-02044	363-02044	366-02044	364-02044	365-02044
	599-02046	1	10 (8.55)	256-02046A	257-02046	258-02046C	259-02046	260-02046	261-02046	262-02046	363-02046	366-02046	364-02046	365-02046

* Product numbers in gray shading are available as assemblies only.

Table 2. Two-Way Valve and Actuator Assemblies with Stainless Steel Trim and Female NPT Connections.

Table 2. Two-Way Valve and Actuator Assemblies with Stainless Steel Trim and Female NPT Connections.														
 Valve Body	Valve Size, Inches	Cv (Kvs)	2-Inch Pneumatic Actuators, Spring Return (Fail Safe) *			Electro-mechanical, 24 Vac								
			10-15 psi (69-103 kPa)	3-8 psi (21-55 kPa)	8-13 psi (55-90 kPa)	SSC81U Floating, NSR	SSC81.5U Floating SR	SSC61U 0-10V, NSR	SSC61.5U 0-10V, SR	SAS81.03U Floating, NSR	SAS81.33U Floating, SR	SAS61.03U 0-10V/ 4-20 mA NSR	SAS61.33U 0-10V/ 4-20 mA SR	
														
			Actuator Prefix Code											
			256	257	258	259	260	261	262	363	366	364	365	
Normally Closed	599-02015	1/2	0.4 (0.34)	256-02015	257-02015B	258-02015C	259-02015	260-02015	261-02015	262-02015	363-02015	366-02015	364-02015	365-02015
	599-02017	1/2	0.63 (0.54)	256-02017	257-02017B	258-02017C	259-02017	260-02017	261-02017	262-02017	363-02017	366-02017	364-02017	365-02017
	599-02019	1/2	1 (0.85)	256-02019	257-02019B	258-02019C	259-02019	260-02019	261-02019	262-02019	363-02019	366-02019	364-02019	365-02019
	599-02021	1/2	1.6 (1.37)	256-02021	257-02021B	258-02021C	259-02021	260-02021	261-02021	262-02021	363-02021	366-02021	364-02021	365-02021
	599-02023	1/2	2.5 (2.14)	256-02023	257-02023B	258-02023C	259-02023	260-02023	261-02023	262-02023	363-02023	366-02023	364-02023	365-02023
	599-02025	1/2	4 (3.42)	256-02025	257-02025B	258-02025C	259-02025	260-02025	261-02025	262-02025	363-02025	366-02025	364-02025	365-02025
	599-02027	3/4	6.3 (5.38)	256-02027	257-02027B	258-02027C	259-02027	260-02027	261-02027	262-02027	363-02027	366-02027	364-02027	365-02027
	599-02029	1	10 (8.55)	256-02029	257-02029B	258-02029	259-02029	260-02029	261-02029	262-02029	363-02029	366-02029	364-02029	365-02029
Normally Open	599-02047	1/2	0.4 (0.34)	256-02047A	257-02047	258-02047C	259-02047	260-02047	261-02047	262-02047	363-02047	366-02047	364-02047	365-02047
	599-02049	1/2	0.63 (0.54)	256-02049A	257-02049	258-02049C	259-02049	260-02049	261-02049	262-02049	363-02049	366-02049	364-02049	365-02049
	599-02051	1/2	1 (0.85)	256-02051A	257-02051	258-02051C	259-02051	260-02051	261-02051	262-02051	363-02051	366-02051	364-02051	365-02051
	599-02053	1/2	1.6 (1.37)	256-02053A	257-02053	258-02053C	259-02053	260-02053	261-02053	262-02053	363-02053	366-02053	364-02053	365-02053
	599-02055	1/2	2.5 (2.14)	256-02055A	257-02055	258-02055C	259-02055	260-02055	261-02055	262-02055	363-02055	366-02055	364-02055	365-02055
	599-02058	1/2	4 (3.42)	256-02058A	257-02058	258-02058C	259-02058	260-02058	261-02058	262-02058	363-02058	366-02058	364-02058	365-02058
	599-02061	3/4	6.3 (5.38)	256-02061A	257-02061	258-02061C	259-02061	260-02061	261-02061	262-02061	363-02061	366-02061	364-02061	365-02061
	599-02063	1	10 (8.55)	256-02063A	257-02063	258-02063C	259-02063	260-02063	261-02063	262-02063	363-02063	366-02063	364-02063	365-02063

* Product numbers in gray shading are available as assemblies only.

Technical Data

Valve Size	1/2-inch to 1-inch
Body	Globe style, ANSI Class 250 1/2- and 3/4-inch C37700 Forged brass. 1-inch UNS CA 844 Bronze
Trim	Brass or Stainless Steel
Stem	Stainless steel ASTM A582 Type 303, 7/32-inch (5.5-mm) stroke
Seat	Metal-to-metal
Packing	Ethylene propylene O-ring
Close-off Ratings	According to ANSI/FCI 70-2 See Table 3.

Controlled Medium	Water, water-glycol solutions to 50%, low pressure steam <15 PSI (with stainless steel trim only).
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Media Temperature 35°F to 250°F (2°C to 120°C)

Maximum Differential Pressure for Modulating Service:

Media	Brass Trim	Stainless Steel Trim
Liquid	25 psi (173 kPa)	50 psi (345 kPa)
Steam	—	15 psi (103 kPa)

Rangeability Cv < 1 = >50:1,
Cv > 1 = >100:1

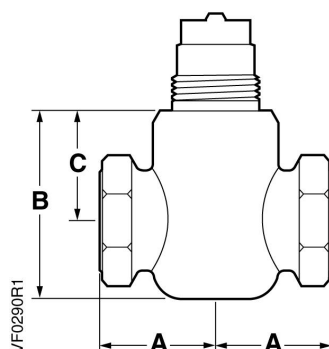
Leakage Rate Class IV (0.01% of Cv)

Flow Characteristics Modified equal percentage

Mounting NEMA 1 (interior only)

Table 3. Close-Off Ratings in psi (kPa).

Action	Valve Size Inches	Flow Rate, Cv (Kvs)	Electronic Actuator		Close-Off Ratings @ 20 psi (138 kPa)		
			SAS	SSC	2-Inch Pneumatic Actuator		
					3-8 psi (69-103 kPa)	8-13 psi (21-55 kPa)	10-15 psi (55-90 kPa)
NC	1/2	0.4 to 1.6 (0.34 to 1.37)	95 (655)	95 (655)	40 (276)	95 (655)	95 (655)
	1/2	2.5 to 4 (2.15 to 3.44)	50 (345)	50 (345)	28 (193)	50 (345)	50 (345)
	3/4 and 1	6.3 to 10 (5.43 to 8.6)	40 (276)	40 (276)	18 (124)	40 (276)	40 (276)
NO	1/2	0.4 to 1.6 (0.34 to 1.37)	160 (1103)	120 (868)	95 (655)	45 (310)	20 (138)
	1/2	2.5 to 4 (2.15 to 3.44)	85 (586)	65 (448)	45 (310)	25 (172)	15 (103)
	3/4 and 1	6.3 to 10 (5.43 to 8.6)	70 (482)	55 (379)	35 (241)	10 (69)	—

**Female NPT x Female NPT**

Valve Size Inches	A	B		C		Weight lbs (kg)
		NO	NC	NO	NC	
1/2	1-3/8 (35)	2-1/4 (57)		1-5/16 (33)		0.96 (.44)
3/4	1-5/8 (41)	2-3/8 (59)		1-5/16 (33)		1.13 (.51)
1	1-15/16 (49)	2-3/4 (69)		1-9/16 (39)		1.7 (.77)

Figure 1. Two-way Valve Dimensions in Inches (mm).

Typical Specifications

Automatic control valves shall have NPT threaded type fittings, 1/2 through 1-inch sizes, and shall be ANSI rated to withstand the pressures and temperatures encountered.

Valves shall have metal-to-metal seats, stainless steel stems, and Ethylene propylene O-ring packing.

Valves shall be ANSI Leakage Class IV (0.01% of Cv). Valves shall have >50:1 rangeability for Cv<1 rangeability and >100:1 for Cv>1.

All two-way valves shall be provided with equal-percentage contoured throttling plugs.

For complete technical details on valves with stainless steel trim, or union female, angle female, or union male end connections, see *Powermite 599 Series, MT Series Terminal Unit Two-way Valves* Technical Instructions, 155-196P25.

Disposal

Do not dispose of valves as household waste.

- Special handling of individual components may be mandated by law or make ecological sense.
- Observe all local and currently applicable laws and regulations.



The actuators are considered electrical and electronic equipment for disposal in terms of the applicable European Directive and may not be disposed of as domestic garbage.

- Dispose of the actuators through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

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