

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



### Description

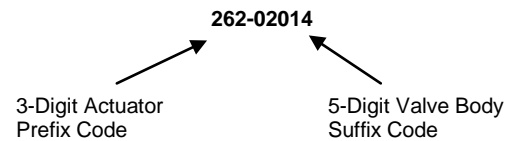
The Powermite 599 Series ANSI Class 250 MT Series 2-way valve bodies work with any MT Series pneumatic or electronic actuator with a 7/32-inch (5.5-mm) stroke. They are suitable for normally open or normally closed control. Typical applications include control of hot or chilled water, water-glycol solutions 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 Body	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.**

 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	258-02029C	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).  
**Media Temperature** 35°F to 250°F (2°C to 120°C)

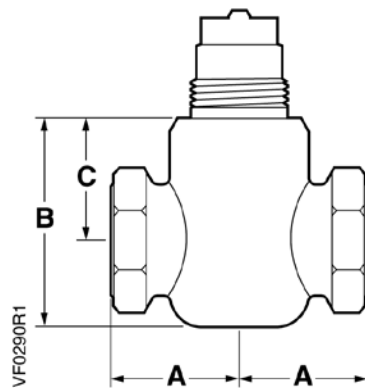
**Maximum Differential Pressure for Modulating Service:**

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.

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