

3-Way Zone Valves, Brass Threaded (1/2 to 1 in.), Sweat (1/2 to 1-1/4 in.) with Electric Actuators

Part Numbering System

Two Position, Spring Return Actuator Zone Valve

△ V X 3 X X X X 1 X X X X △

Body Type & Temperature
 T = On/Off (General)
 S = On/Off (Steam)
 High temperature actuator must be used.

Options
 0 = No Options
 A = End Switch (required with terminal block)

Configuration
 3 = 3-Way

Electrical Leads
 00 = 6" Motor Wires
 01 = Terminal Block with End Switch (General Temp., 24 VAC only)
 02 = 18" (Standard) Wire Leads

Valve Size
 2 = 1/2"
 3 = 3/4"
 4 = 1"
 5 = 1-1/4"

Voltage
 A = 24 VAC, 50/60 HZ
 B = 110/120 VAC, 50/60 HZ
 D = 208 VAC, 60 HZ (High Temp only)
 T = 277 VAC, 50/60 HZ (High Temp only)
 U = 220/230 VAC, 50/60 HZ

Connection Type	Availability
1 = Sweat	1/2", 3/4", 1", 1-1/4"
2 = Threaded NPT	1/2", 3/4", 1"
3 = Threaded Rp	1/2", 3/4", 1"
4 = Inverted Flare (Retrofit) △	3/4"
5 = SAE Flare	1/2"

Temperature Ratings
 3 = General Temperature
 4 = High Temperature

Spring Return
 1 = Normally Closed Only

CV Size			
No.	3-way	Size	Connection Type
1 =	1.5	1/2"	1, 2, 3, 5
		3/4"	4
2 =	3.0	1/2"	1, 2, 3, 5
		3/4"	1, 2, 3, 4
3 =	4.0	1/2"	1, 2, 3, 5
		3/4"	1, 2, 3, 4
		1"	1
5 =	5.0	3/4"	1, 2, 3
		1"	1
7 =	7.5	3/4"	1, 2, 3
		1"	1, 2, 3
	8.0	1-1/4"	1

Actuator Type
 G = On/Off (General Close-Off)
 H = On/Off (High Close-off)

- △ When ordering valve body only: use the first six positions to configure the valve.
- △ When ordering actuator only: use the last seven positions to configure the actuator. Prefix with the letter "A".
- △ Invensys inverted flare fittings must be ordered separately. See actuator accessories for fitting part numbers.
- △ All voltages UL Listed or Recognized except 24 V 50 Hz.

Body & Actuator Combination Requirements

Temperature Configurations	
Body Configuration V T X X X X T = General S = Steam If body configuration is T, actuator temp rating can be 3 or 4. If body configuration is S, actuator temp rating must be 4.	Actuator Spring Return Mode A X X 3 A X X X 3 = General Temperature 4 = High Temperature If actuator temp rating is 3, body style must be T. If actuator temp rating is 4, body style can be S or T.

3-Way Zone Valves, Brass Threaded (1/2 to 1 in.), Sweat (1/2 to 1-1/4 in.) with Electric Actuators

Part Numbering System

Modulating Spring and Non-Spring Return Zone Valve

① V M 3 X X X X X 3 A 00 X ②

Body Type
M = Modulating

Configuration
3 = 3-Way

Valve Size
2 = 1/2"
3 = 3/4"
4 = 1"
5 = 1-1/4"

Connection Type	Availability
1 = Sweat	1/2", 3/4", 1", 1-1/4"
2 = Threaded NPT	1/2", 3/4", 1"
3 = Threaded Rp	1/2", 3/4", 1"
4 = Inverted Flare (Retrofit) ④	3/4"
5 = SAE Flare	1/2"

CV Size			
	3-way	Size	Connection Type
1 =	1.0	1/2"	1, 2, 3, 5
		3/4"	4
2 =	2.0	1/2"	1, 2, 3, 5
		3/4"	1, 2, 3, 4
3 =	4.0	1/2"	1, 2, 3, 5
		3/4"	1, 2, 3, 4
		1"	1
7 =	7.5	3/4"	1, 2, 3
	8.0	1"	1, 2, 3
		1-1/4"	1

Options
Non-Spring Return Actuators
0 = No Options
T = Three-Wire Signal Time-Out
Spring Return Actuators
(Default Based On Actuator Type)
T = Time-Out
O = "P" Actuator Only ③

Electrical Leads
00 = No leads

Voltage
A = 24 Vac Only

Temperature Ratings
3 = General Temperature

Action
1 = Spring Return Normally closed
3 = Non-Spring Return ⑤

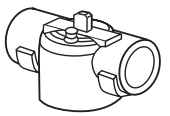
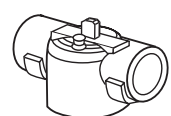
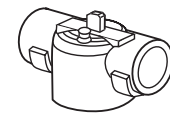
Actuator Type
T = Three-wire Floating
P = Proportional, 0-10 Vdc, 0-5 Vdc,
5-10 Vdc or 4-20 mA, Jumper Selectable

- ① When ordering valve body only: use the first six positions to configure the valve.
- ② When ordering actuator only: use the last seven positions to configure the actuator. Prefix with the letter "A".
- ③ This feature is standard for spring return actuators. It must be included in the part number.
- ④ Invensys inverted flare fittings must be ordered separately. See actuator accessories for fitting part numbers.
- ⑤ 3-Way zone valve must use either spring return normally closed or non-spring return.

Available Actuators				
Part Number	Action	Position	Actuator Type	Option
AT13A00T	Spring Return	N.C.	Three Wire Floating	With Time-Out
AT23A00T	Spring Return	N.O.	Three Wire Floating	With Time-Out
AT33A000	Non-Spring Return		Three Wire Floating	None
AT33A00T	Non-Spring Return		Three Wire Floating	With Time-Out
AP13A000	Spring Return	N.C.	Proportional	None
AP23A000	Spring Return	N.O.	Proportional	None
AP33A000	Non-Spring Return		Proportional	None

3-Way Zone Valves, Brass Threaded (1/2 to 1 in.), Sweat (1/2 to 1-1/4 in.) with Electric Actuators

TABLE 1. Select **Valve Body** less actuator (Valve Size, Cv Rating, Configuration) or select **Valve Assembly** with correct Input Signal (Refer to Pages 846 to 849 for Valve Sizing).

Application		
200°F (93°C)	260°F (151°C)	200°F (93°C)
Threaded NPT		
		

NOTE: These charts are color coded as shown below to assist valve selection. Note it is only possible to select a valve assembly or component parts (actuator, valve body).

ORDERING EXAMPLES:

1. Valve Assembly:

VT3215G13B02





Valve Body: VT3215

Actuator: G13B02

Size	1/2 to 1-1/4 in. (15 to 32mm.)		
Valve Body	VT3XXX	VS3XXX	VM3XXX
Flow Type	Mixing Or Diverting		
Material	Body	Forged Brass	
	Seat	Brass	
	Stem	Nickel Plated Brass	
	Paddle/Plug	Buna N	Highly Saturated Nitrile
Maximum Static Pressure	300 psi (2068 kPa)		

3-Way Zone Valves, Brass Threaded (1/2 to 1 in.), Sweat (1/2 to 1-1/4 in.) with Electric Actuators

TABLE 2. Using the numbering system on Pages 783 or 784 select the actuator type with correct input signal and having sufficient close-off for the application.

										
Actuator		AGXXXXXX	AHXXXXXX	AX33A00X	AXX3A00X					
Input Signal		2 Position SPST	2 Position SPST	ATXXXXXX = 24 Vac Three Wire Floating APXXXXXX = Jumper Selectable: 0 to 10V, 4 to 20 mA, 0 to 5 Vdc or 5 to 10 Vdc						
Voltage Impedance		—	—	Voltage 200K Ω Current 300K Ω	Open/Close Current 3.9K Ω					
ACTUATOR CLOSE-OFF PRESSURE RATING - PSI (kPa)^{a b}										
Valve Body	Size in.	Cv (Kv)	Close-off ΔP (kPa)	Cv (Kv)	Close-off ΔP (kPa)	Cv (Kv)	Close-off ΔP (kPa)	Cv (Kv)	Close-off ΔP (kPa)	
									Non-Spring Return Driven Closed	Spring Return Spring Closed
VT32X1	1/2	1.5 (1.3)	50 (350)	1.5 (1.3)	75 (525)	—	—	—	—	—
VT33X1	3/4									
VT32X2	1/2	3.0 (2.6)	30 (210)	3.0 (2.6)	50 (350)					
VT33X2	3/4									
VT32X3	1/2	4.0 (3.4)	20 (140)	4.0 (3.4)	30 (210)					
VT33X3	3/4									
VT3413	1	5.0 (4.3)	13 (90)	5.0 (4.3)	25 (175)					
VT33X5	3/4									
VT3415	1	7.5 (6.5)	10 (70)	7.5 (6.5)	15 (105)					
VT33X7	3/4									
VT34X7	1	8.0 (7.5)	15 (103)	8.0 (7.5)	20 (140)					
VT3517	1-1/4									
VS32X1	1/2	1.5 (1.3)	15 (103)	1.5 (1.3)	15 (103)					
VS33X1	3/4									
VS32X2	1/2	3.0 (2.6)	15 (103)	3.0 (2.6)	15 (103)					
VS33X2	3/4									
VS32X3	1/2	4.0 (3.4)	15 (103)	4.0 (3.4)	15 (103)					
VS33X3	3/4									
VS3413	1	5.0 (4.3)	15 (103)	5.0 (4.3)	15 (103)					
VS33X5	3/4									
VS3415	1	7.5 (6.5)	15 (103)	7.5 (6.5)	15 (105)					
VS33X7	3/4									
VS34X7	1	8.0 (7.5)	15 (103)	8.0 (7.5)	20 (140)					
VS3517	1-1/4									
VM32X1	1/2	—	—	—	—	1.0 (0.9)	50 (344)	1.0 (0.9)	50 (344)	50 (344)
VM33X1	3/4									
VM32X2	1/2					2.0 (1.8)	50 (344)	2.0 (1.8)	50 (344)	20 (137)
VM33X2	3/4									
VM32X3	1/2					4.0 (3.5)	35 (242)	4.0 (3.5)	35 (242)	20 (137)
VM33X3	3/4									
VM3413	1					7.5 (6.5)	35 (242)	7.5 (6.5)	35 (242)	15 (103)
VM33X7	3/4									
VM34X7	1					8.0 (7.5)	35 (242)	8.0 (7.5)	35 (242)	
VM3517	1-1/4									

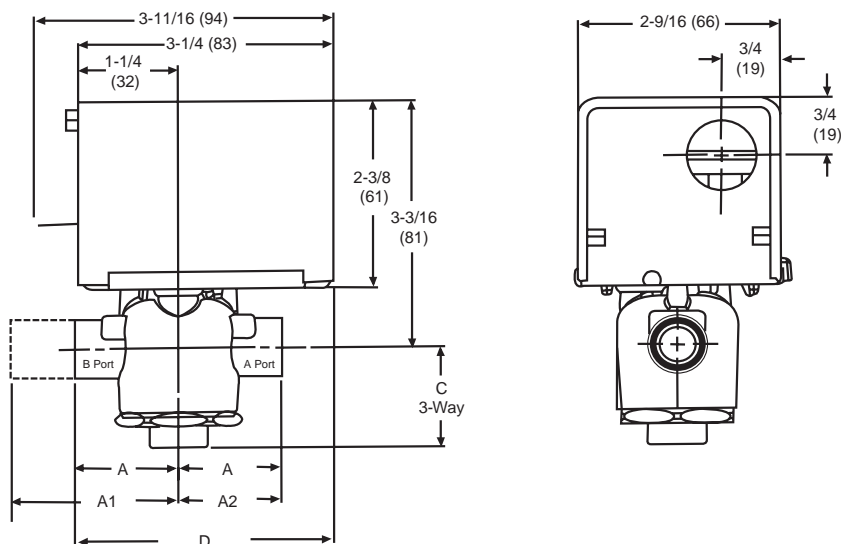
^a Close-off rated for ANSI IV (.01%) with pressure at inlet (port B).

^b Close-off pressure ratings describe only the differential pressure between the inlet and outlet ports which the actuator can close-off with adequate seating force. Consult valve body specifications for other limitations.

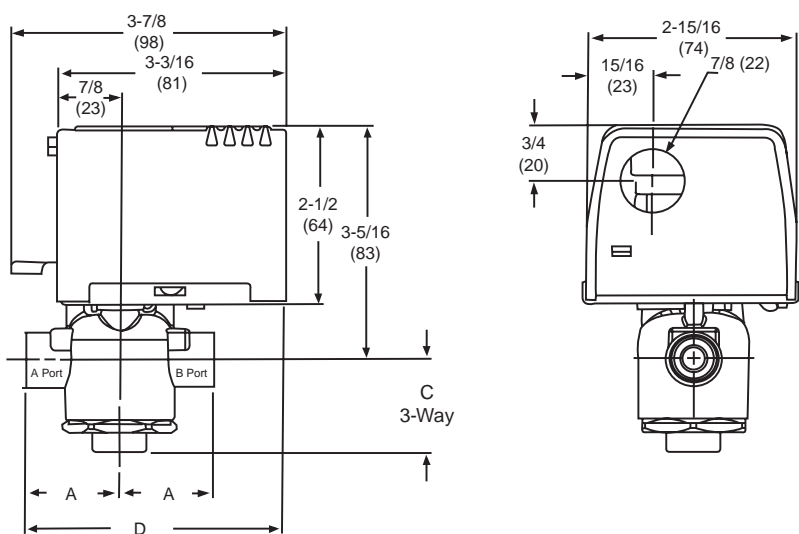
3-Way Zone Valves, Brass Threaded (1/2 to 1 in.), Sweat (1/2 to 1-1/4 in.) with Electric Actuators

TABLE 3. Dimensions in Inches.

Valve Body				Actuator Series		
				GXXXXXX	HXXXXXX	X33A00X XX3A00X
Part Number	Size In.	A	C	D	D	D
VTXXXX VSXXXX VMXXXX	1/2 Sweat	1.29	3.30	3.30	3.62	—
	3/4 Sweat	1.37	1.69	3.38	3.74	—
	1 Sweat	1.69	1.69	3.62	4.0	—
	1-1/4 Sweat	1.85	1.85	3.70	4.13	—
	1/2 NPT, Rp 1/2	1.37	3.30	3.38	3.62	—
	3/4 NPT, Rp 3/4	1.69	1.45	3.62	4.0	—
	1 NPT Rp 1	1.85	1.69	3.70	4.13	—
VTXXXX VSXXXX	3/4 Inverted Flare	A1	0.9 (23)	1.29 (33)	3.38 (86)	3.62 (92)
		A2				

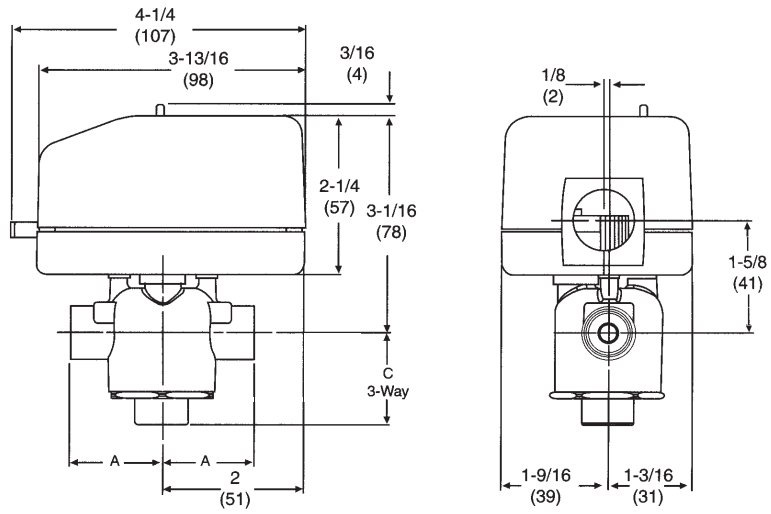


VTXXXXGXXXXXX

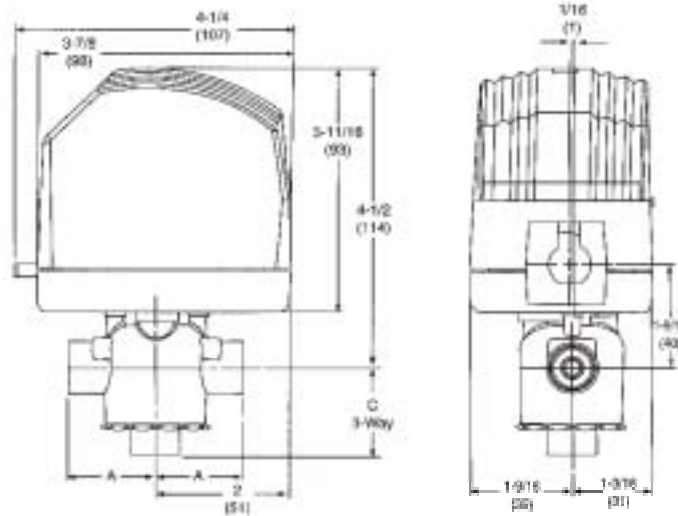


VSXXXXHXXXXXX

3-Way Zone Valves, Brass Threaded (1/2 to 1 in.), Sweat (1/2 to 1-1/4 in.) with Electric Actuators



VMXXXXX33A00X



VMXXXXXX3A00X

3-Way Zone Valves, Brass Threaded (1/2 to 1 in.), Sweat (1/2 to 1-1/4 in.) with Electric Actuators

