


Soft Touch Max Flanged Characterized Ball Valves 2-Way and 3-Way — 2-1/2" - 4"

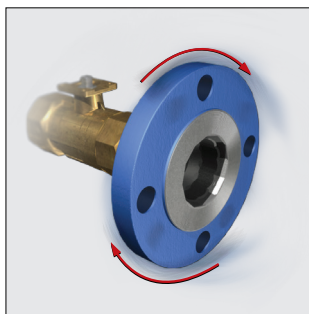
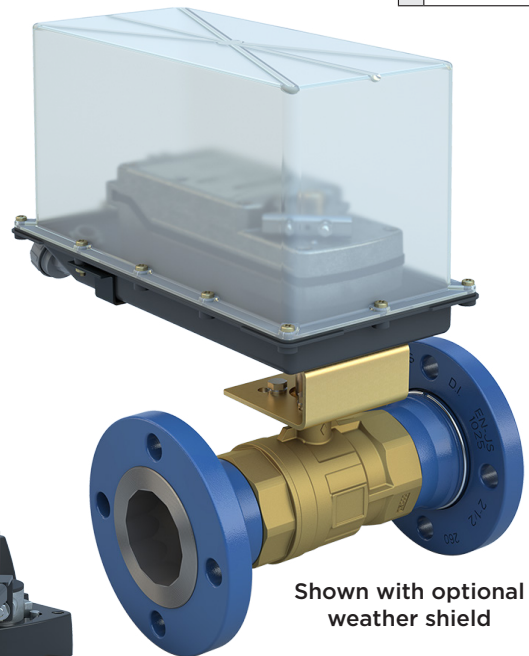
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LOOKING FOR MORE	Close-Off Charts
	
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Application

STM Series Flanged Ball Valves are designed to regulate the flow of hot water, chilled water, and 50% glycol solutions to the demand of a controller in Heating, Ventilating, and Air Conditioning (HVAC) systems. The valves come in sizes of 2-1/2", 3", and 4". The (ANSI) Class 150 flanged valves come in both 2-way and 3-way configurations and are available in multiple Cv ratings.

Bray offers the valve, linkage, and actuator assemblies for factory or field mounting with either spring return or non-spring return actuators.

The STM is designed for electronic actuator operation to a maximum close-off pressure of 100 PSI and for temperature ranges 0° to 284°F



Free Spinning Lap Flange

Features and Benefits

- **Lap Flange**

Allows easy positioning and alignment with mating flanges.

- **Low Torque**

Smaller actuator and longer life

- **Dimensionally Stable at High Temperatures**

Works in low pressure steam applications.

- **5 Year Warranty**

Assurance of trouble free operation.

Soft Touch Max - Valve Body Specifications

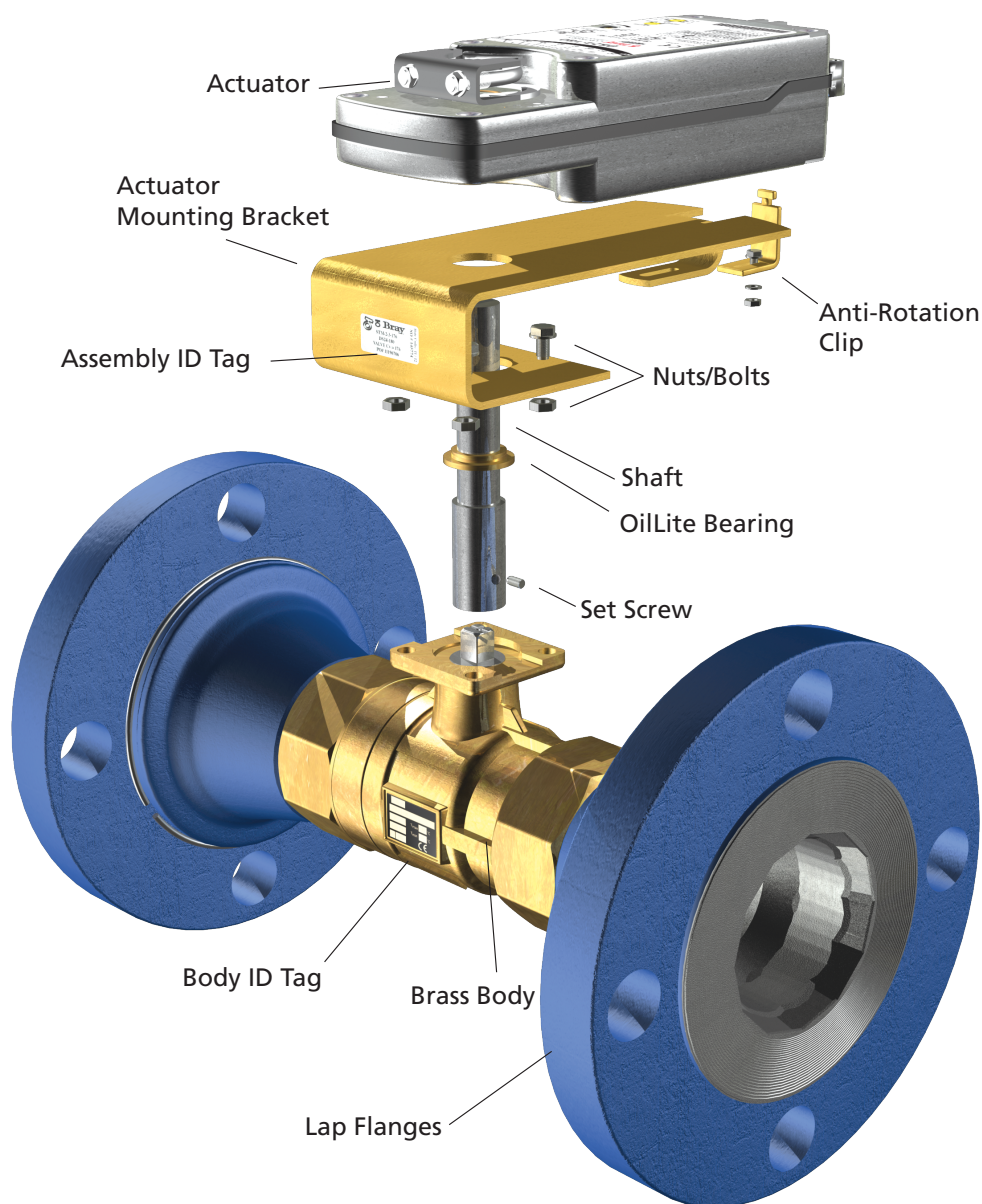
Technical Specifications - Valve		
Service	Hot Water, Chilled Water, 50/50 Glycol Solutions, and 25 PSIG (172 kPa) Saturated Steam for HVAC Systems	
Size Range	2-Way & 3-Way	2-1/2" through 4" (DN 65 to 100)
Valve Fluid Temperature Limits	0 to 284°F (-18 to 140°C)	
Valve Body Pressure/ Temperature Rating	Water	ANSI Class 150 250 PSI at -20° to 100°F (29° to 38°C) 235 PSI at: 200°F (93°C) 218 PSI at: 284°F (140°C)
	Steam	25 PSIG (172 kPa) Saturated Steam for HVAC Systems
Maximum Close-Off Pressure	2-Way	100 PSI (689 kPa)
	3-Way	50 PSI (345 kPa)
Maximum Recommended Operating Pressure Drop	30 PSI (207 kPa) for quiet service	
Flow Characteristics	2-Way	Equal Percentage
	3-Way	Equal Percentage Flow Characteristics of In-line Port or Linear Percentage Flow Characteristics of Angle Port
Rangeability	Greater than 500:1	
Leakage	2-Way & 3-Way	0.01% of Maximum Flow, Control Port, ANSI/FCI 70-2, Class 4
	3-Way	1% of Maximum Flow, Bypass Port
End Connections	ANSI Class 150 Flange	
Minimum Ambient Operating Temperature	-4°F (-20°C)	D24-210/DC24-310 Series Non-Spring Return Actuators
	-40°F (-40°C)	DS-180 Series Spring Return Actuators
Maximum Ambient Operating Temperature	122°F (50°C)	D24-210/DC24-310 Series Non-Spring Return Actuators
	131°F (55°C)	DS-180 Series Spring Return Actuators
Materials	Body	Brass
	Flanges	Ductile Iron
	Ball & Stem	300 Series Stainless Steel
	Seats	Graphite Reinforced PTFE with EPDM O-Ring Backing
	Stem Seals	EPDM O-Rings
	Flow Control Disk	Amodel AS-1145HS Polyphthalamide Resin
Warranty	5 Years limited from time of shipment.	

Disclaimer - The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Bray office. Bray, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

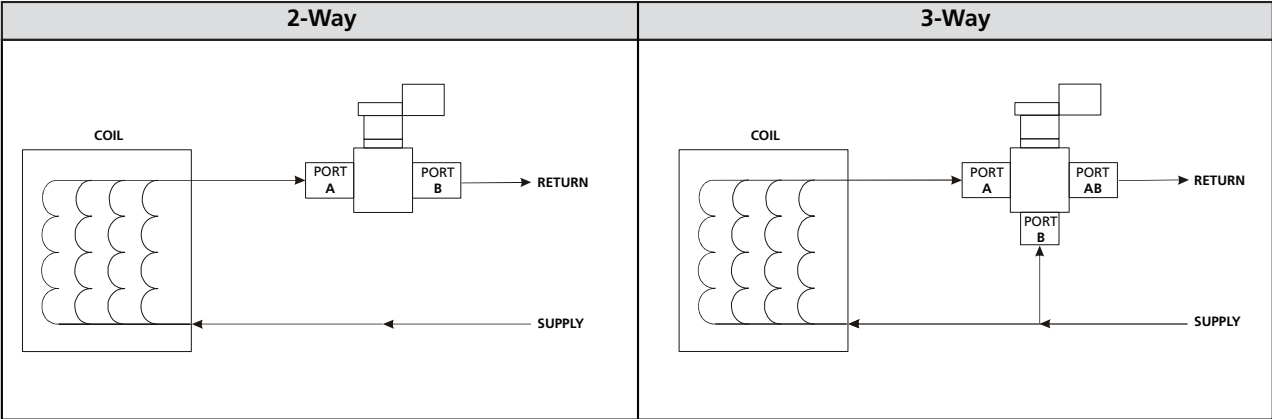
Soft Touch Max - Model Number Matrix

STM	Prefix: Soft Touch Max							Valve Series	
	3	Valve Size (2-1/2" to 4")						Valve Size	
		-							-
		2	2-Way or 3 Way						Valve Type
			-						
			74						Cv
			/						/
				D(M)24-210	24V, D-210 Series				Actuator Selection
				DC(M)24-310-T	24V, DC-310 Series				
				D(M)S24-180-T	24V, DS-180 Series				
STM	3	-	2	-	74	/	D(M)24-210	3" Soft Touch Max Body, 2-Way, Flow Coefficient Cv of 74, 24V DC24-310-T Actuator	Example

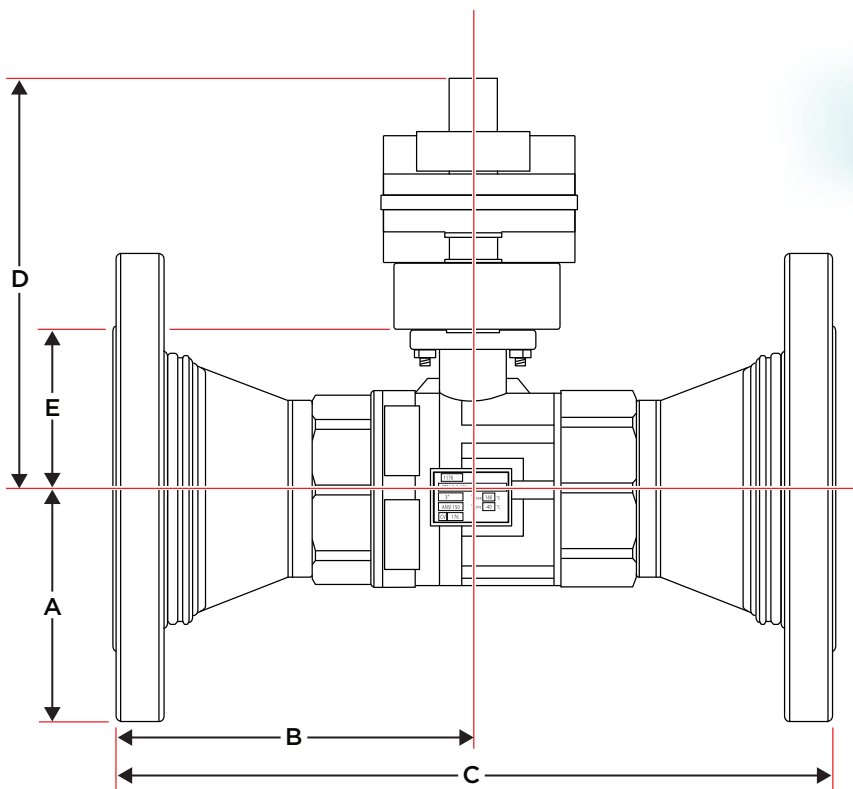
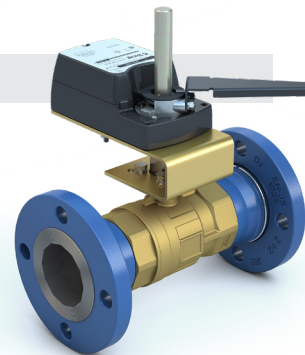
Soft Touch Max - Exploded View



Soft Touch Max - Piping Diagram



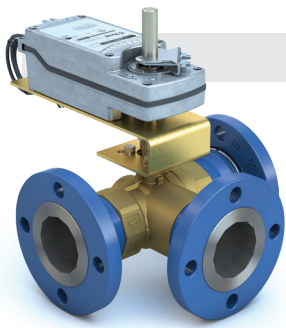
Soft Touch Max - 2-Way Dimensions



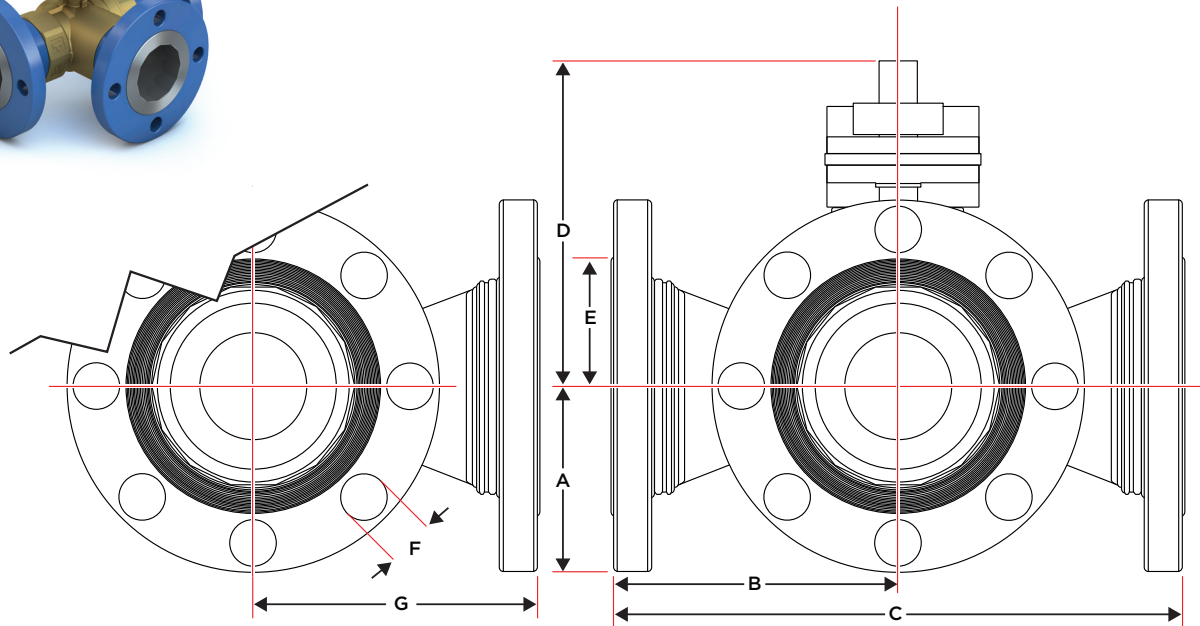
STM - 2-Way Dimensions — 2-1/2" - 4"

Valve Model Number	Size		Flow Coefficient		Please Reference the Illustration														
					Bolt Hole Diameter	Number of Bolt Holes	A		B		C		D		E		Weight		
	in.	mm	Cv	Kv			in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs	kg	
STM 250-2-47	2.5	65	47	40.7	5.50	139	4	3.50	89	5.71	145	11.42	290	10.25	260	2.05	52	34	15
STM 250-2-74			74	64.0															
STM 250-2-117			117	101.2															
STM 3-2-74	3.0	80	74	64.0	6.00	152	4	3.75	95	6.10	155	12.20	310	10.25	260	2.49	63	36	16
STM 3-2-117			117	101.2															
STM 3-2-176			176	152.2															
STM 3-2-211*			211	182.5															
STM 4-2-117	4.0	100	117	101.2	7.50	191	8	4.50	114	6.89	175	13.77	350	10.25	260	3.09	76	44	20
STM 4-2-176*			176	152.2															

- Allow a minimum of 4 inches for actuator removal.
- Weights are for valve bodies only.
- Dimensions may vary depending on the actuator
- Dimensions Shown are based on largest actuator available for this series.
- * Reduced Port Valve - No characterizing disc.



Soft Touch Max - 3-Way Dimensions



STM - 3-Way Dimensions — 2-1/2" - 4"

Valve Model Number	Size		Flow Coefficient		Please Reference the Illustration																		
					Bolt Hole Diameter		Number of Bolt Holes	A		B		C		D		E		F		G		Weight	
	in.	mm	Cv	Kv				in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs	kg
STM 250-3-47	2.5	65	47	40.7	5.50	139	4	3.50	89	5.71	145	11.42	290	10.25	260	2.05	52	0.75	19.1	5.87	149	43	20
STM 250-3-74			74	64.0																			
STM 250-3-117			117	101.2																			
STM 3-3-74	3.0	80	74	64.0	6.00	152	4	3.75	95	6.10	155	12.20	310	10.25	260	2.49	63	0.75	19.1	6.26	159	49	22
STM 3-3-117			117	101.2																			
STM 3-3-176			176	152.2																			
STM 3-3-211*			211	182.5																			
STM 4-3-117	4.0	100	117	101.2	7.50	191	8	4.50	114	6.89	175	13.77	350	10.25	260	3.09	76	0.75	19.1	7.05	179	62	28
STM 4-3-176*			176	152.2																			

- Allow a minimum of 4 inches for actuator removal.
- Weights are for valve bodies only.
- Dimensions may vary depending on the actuator
- Dimensions Shown are based on largest actuator available for this series.
- * Reduced Port Valve - No characterizing disc.

Simple Set Max - Cv Pipe Size Correction Tables

STM - 2-Way - Piping Geometry Chart (Adjusted Cv) — 2-1/2" - 4"

Valve Model Number	Valve Size		Flow Coefficient		Pipe Size			
					3"	4"	5"	6"
	in.	mm	Cv	Kv				
STM 250-2-47	2.5	65	47	40.7	47	47	-	-
STM 250-2-74			74	64.0	74	72	-	-
STM 250-2-117			117	101.2	115	109	-	-
STM 3-2-74	3.0	80	74	64.0	-	74	73	-
STM 3-2-117			117	101.2	-	115	113	-
STM 3-2-176			176	152.2	-	169	162	-
STM 3-2-211*			211	182.5	-	200	189	-
STM 4-2-117	4.0	100	117	101.2	-	-	117	116
STM 4-2-176*			176	152.2	-	-	175	172

*Reduced port valve - No characterizing disc

STM - 3-Way - Piping Geometry Chart (Adjusted Cv) — 2-1/2" - 4"

Valve Model Number	Valve Size		Flow Coefficient		Pipe Size			
					3"	4"	5"	6"
	in.	mm	Cv	Kv				
STM 250-3-47	2.5	65	47	40.7	47	47	-	-
STM 250-3-74			74	64.0	74	72	-	-
STM 250-3-117			117	101.2	115	109	-	-
STM 3-3-74	3.0	80	74	64.0	-	74	73	-
STM 3-3-117			117	101.2	-	115	113	-
STM 3-3-176			176	152.2	-	169	162	-
STM 3-3-211*			211	182.5	-	200	189	-
STM 4-3-117	4.0	100	117	101.2	-	-	117	116
STM 4-3-176*			176	152.2	-	-	175	172

*Reduced port valve - No characterizing disc

STM -2-Way Actuator Selection and Close-Off Charts

2-Way, Non-Spring Return (100 PSI - Maximum Close Off)								
Actuator Model Details								
Auxiliary Switches Available				■	■	■	■	
Time Out				■	■			
Enclosed Terminal Strip				■		■		
Conduit Size - Flex(F)/NPT(N)				1/2 N	3/8 N	1/2 N	3/8 N	
Cable - Standard(S)/Plenum(P)				-	S	-	S	
Model Number	Valve Size		Flow Coefficient		24 VAC/DC On/Off & Floating	24 VAC Floating	24 VAC/DC Modulating	24 VAC Modulating
	In.	mm	Cv	Kv	D24-210	DC24-310-T	DM24-210	DCM24-310
STM250-2-47	2.5	65	47	40.7	100	100	100	100
STM250-2-74			74	64.0				
STM250-2-117			117	101.2				
STM3-2-74	3	80	74	64.0	100	100	100	100
STM3-2-117			117	101.2				
STM3-2-176			176	152.2				
STM3-2-211*			211	182.5				
STM4-2-117	4	100	117	101.2	100	100	100	100
STM4-2-176*			176	152.2				

2-Way, Spring Return (100 PSI - Maximum Close Off)								
Actuator Model Details								
Auxiliary Switches Available				■	■	■		
Conduit Size - Flex(F)/NPT(N)				3/8 F	3/8 F	3/8 F		
Cable - Standard(S)/Plenum(P)				S	S	S		
Model Number	Valve Size		Flow Coefficient		24 VAC/DC On/Off & Floating	120 VAC On/Off	24 VAC/DC Modulating	
	In.	mm	Cv	Kv	DS24-180-T	DS120-180	DMS24-180	
STM250-2-47	2.5	65	47	40.7	100	100	100	
STM250-2-74			74	64.0				
STM250-2-117			117	101.2				
STM3-2-74	3	80	74	64.0	100	100	100	
STM3-2-117			117	101.2				
STM3-2-176			176	152.2				
STM3-2-211*			211	182.5				
STM4-2-117	4	100	117	101.2	100	100	100	
STM4-2-176*			176	152.2				

Options/Adders

For optional auxiliary switches, add -A to the end of the actuator part number.

Add a -WS at the end of the part # if a weather cover is needed.

*Reduced port valve - No characterizing disc

For normally Closed, add a "C" to the end of the valve part number, i.e. STM250-2-47C, otherwise normally open. Spring return models only

STM -3-Way Actuator Selection and Close-Off Charts

3-Way, Non-Spring Return (50 PSI - Maximum Close Off)

Actuator Model Details									
Auxiliary Switches Available					■	■	■	■	
Time Out					■	■			
Enclosed Terminal Strip					■		■		
Conduit Size - Flex(F)/NPT(N)					1/2 N	3/8 N	1/2 N	3/8 N	
Cable - Standard(S)/Plenum(P)					-	S	-	S	
Model Number	Valve Size		Flow Coefficient		Bypass Port		24 VAC/DC On/Off & Floating	24 VAC Floating	24 VAC/DC Modulating
	In.	mm	Cv	Kv	Cv	Kv	D24-210	DC24-310-T	DM24-210
STM250-3-47	2.5	65	47	41	29	25	50	50	50
STM250-3-74			74	64	47	40			
STM250-3-117			117	101	74	63			
STM3-3-74	3	80	74	64	47	40	50	50	50
STM3-3-117			117	101	74	63			
STM3-3-176			176	152	88	75			
STM3-3-211*			211	183	105	90			
STM4-3-117	4	100	117	101	74	63	50	50	50
STM4-3-176*			176	152	88	75			

3-Way, Spring Return (50 PSI - Maximum Close Off)

Actuator Model Details									
Auxiliary Switches Available					■	■	■		
Conduit Size - Flex(F)/NPT(N)					3/8 F	3/8 F	3/8 F		
Cable - Standard(S)/Plenum(P)					S	S	S		
Model Number	Valve Size		Flow Coefficient		Bypass Port		24 VAC/DC On/Off & Floating	120 VAC On/Off	24 VAC/DC Modulating
	In.	mm	Cv	Kv	Cv	Kv	DS24-180-T	DS120-180	DMS24-180
STM250-3-47	2.5	65	47	41	29	25	50	50	50
STM250-3-74			74	64	47	40			
STM250-3-117			117	101	74	63			
STM3-3-74	3	80	74	64	47	40	50	50	50
STM3-3-117			117	101	74	63			
STM3-3-176			176	152	88	75			
STM3-3-211*			211	183	105	90			
STM4-3-117	4	100	117	101	74	63	50	50	50
STM4-3-176*			176	152	88	75			

Options/Adders

For optional auxiliary switches, add -A to the end of the actuator part number.

Add a -WS at the end of the part # if a weather cover is needed.

For normally Closed, add a "C" to the end of the valve part number, i.e. STM250-3-47C, otherwise normally open. Spring return models only.

* Reduced port valve - No characterizing disc

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Bray Commercial provides automated Butterfly, Ball, Globe and Pressure Independent Control Valves to the commercial building HVAC market throughout the world. Wherever valve performance is required to maintain climate controlled environments, Bray can provide the required automated valves to meet the demanding flow applications of chiller/boiler isolation, air handlers and terminal units for new construction, retrofit and/or LEED certification applications in buildings.

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