



# SERIES 2120 - SERIES 1000-X

MODULATING INDUSTRIAL ELECTRIC ACTUATORS  
3-WAY 2" - 20" RESILIENT SEATED BUTTERFLY VALVES

Rev. D

## SERIES 2120 BUTTERFLY VALVE

**SERVICE:** Chilled/Hot Water - 50% Glycol  
**FLOW CHARACTERISTIC:** Modified EQ%  
**SIZES:** 2" - 20"  
**BODY:** Ductile Iron ASTM A536  
**BODY COATING:** Fusion Bonded Epoxy  
**BODY PRESSURE RATING:** ASME/ANSI Class 125  
**WORKING PRESSURE:** 250 PSI for -22°F to 100°F  
**END FITTING:** Lugged ANSI Class 125/150 Flanged  
**DISC:** 304SS  
**STEM:** 416SS  
**SEAT:** EPDM  
**O-RING:** EPDM  
**BUSHING:** PTFE  
**CLOSE OFF:** 200 PSI (2"-12") or 150 PSI (14"-20")  
**LEAKAGE:** Bubble Tight Shutoff  
**TEMPERATURE RANGE:** -22°F to 250°F  
**MAX FLUID VELOCITY:** 30 FPS

## SERIES 1000-X MODULATING ACTUATOR

**MOTOR:** 110/220VAC or 24VAC  
**TORQUE RANGE:** 443 - 22,127 in/lbs  
**HOUSING:** Die Cast Aluminum - NEMA 4  
**CONTROL SIGNAL:** 4-20mA or 2-10VDC  
**FEEDBACK:** 4-20mA  
**RESOLUTION:** 80 Steps (4-20mA) 200 Steps (2-10VDC)  
**PROTECTION:** Thermal Overload Protection  
**POSITION INDICATOR:** Mechanical Dome  
**CONDUIT ENTRIES:** 2 x 1/2" NPT  
**POWER GEARS:** Alloy Steel and Aluminum Bronze  
**BEARINGS:** Alloy Steel Sleeve and Ball Bearings  
**CERTIFICATIONS:** CE, NRTL, NEMA 4, CSA File 226201  
**INTERNAL HEATER:** Standard  
**MANUAL OVERRIDE POWER SWITCH:**  
 \*Not available on 1005 and all 24V models  
**MANUAL OVERRIDE:** Allen Handle Standard  
 \*Optional Handwheel not available on 1005



## SERIES 1000-X MODULATING ACTUATOR SPECIFICATIONS

| MODEL                          | 1005/S-X          | 1010/S-X  | 1020/S-X  | 1040/S-X  | 1060/S-X  | 1100/S-X  | 1160/S-X  | 1250/S-X  |
|--------------------------------|-------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Output Torque (in-lb)          | 443               | 885   | 1770      | 3540      | 5310      | 8851      | 14616     | 22127     |
| Output Torque (Nm)             | 50                | 100   | 200       | 400       | 600       | 1000      | 1600      | 2500      |
| Duty Cycle                     | 80%               | 80%   | 80%       | 80%       | 80%       | 70%       | 70%       | 70%       |
| Travel Speed @ 60Hz (Sec)      | 20                | 30  | 30        | 30        | 45        | 30        | 48        | 75        |
| Max Current (Amp @ 110/220VAC) | 0.34/0.17         | 0.81/0.47   | 1.68/0.78 | 3.41/1.78 | 3.60/1.87 | 3.80/2.12 | 3.93/2.16 | 3.95/2.20 |
| Run Current (AMP @ 110/220VAC) | 0.24/0.16         | 0.57/0.35   | 0.65/0.37 | 1.12/0.57 | 1.18/0.60 | 1.93/0.94 | 1.75/0.96 | 1.75/0.98 |
| Max Current (Amp @ 24VAC)      | 2.0               | 2.5   | 5.4       | 8.4       | N/A       | N/A       | N/A       | N/A       |
| Run Current (Amp @ 24VAC)      | 1.5               | 2.0   | 4.9       | 7.9       | N/A       | N/A       | N/A       | N/A       |
| Input Signal                   | *                 | Switchable 2-10VDC or 4-20mA on 120V, Specific control packs for 2-10VDC or 4-20mA on 24V |           |           |           |           |           |           |
| Output Signal                  | 4-20mA            |   |           |           |           |           |           |           |
| Enclosure Rating               | WATERTIGHT NEMA 4 |   |           |           |           |           |           |           |

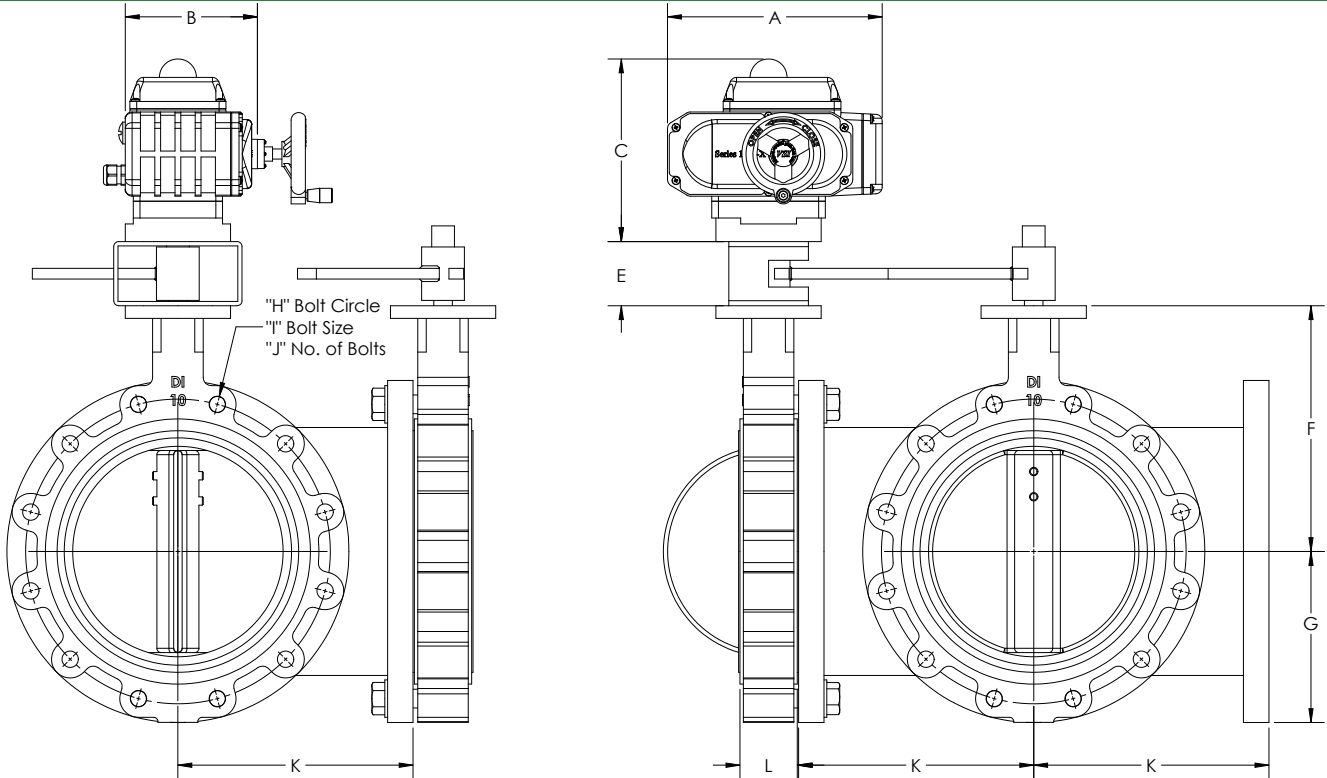
\* Specific control packs for 2-10VDC or 4-20mA for both 120V and 24V



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## DIMENSIONAL INFORMATION



DIMENSIONS: MM (INCHES)

| PSI     | VALVE SIZE |     | ACTUATOR | A              | B             | C               | E              | F              | G              | H     | J x I          | K                | L             |
|---------|------------|-----|----------|----------------|---------------|-----------------|----------------|----------------|----------------|-------|----------------|------------------|---------------|
|         | INCH       | DN  |          |                |               |                 |                |                |                |       |                |                  |               |
| 200 PSI | 2          | 50  | 1005/S-X | 160<br>(6.30)  | 112<br>(4.41) | 160.5<br>(6.32) | 50.8<br>(2.00) | 161<br>(6.34)  | 80<br>(3.15)   | 4.75  | 4 x 5/8 - 11   | 114.3<br>(4.50)  | 43<br>(1.69)  |
|         | 2.5        | 65  | 1005/S-X | 160<br>(6.30)  | 112<br>(4.41) | 160.5<br>(6.32) | 50.8<br>(2.00) | 175<br>(6.89)  | 89<br>(3.50)   | 5.5   | 4 x 5/8 - 11   | 127<br>(5.00)    | 46<br>(1.81)  |
|         | 3          | 75  | 1005/S-X | 160<br>(6.30)  | 112<br>(4.41) | 160.5<br>(6.32) | 50.8<br>(2.00) | 181<br>(7.13)  | 95<br>(3.74)   | 6     | 4 x 5/8 - 11   | 139.7<br>(5.50)  | 46<br>(1.81)  |
|         | 4          | 100 | 1010/S-X | 196<br>(7.72)  | 121<br>(4.76) | 181<br>(7.13)   | 50.8<br>(2.00) | 226<br>(8.90)  | 114<br>(4.49)  | 7.5   | 8 x 5/8 - 11   | 165.1<br>(6.50)  | 52<br>(2.05)  |
|         | 5          | 125 | 1010/S-X | 196<br>(7.72)  | 121<br>(4.76) | 181<br>(7.13)   | 50.8<br>(2.00) | 226<br>(8.90)  | 127<br>(5.00)  | 8.5   | 8 x 3/4 - 10   | 190.5<br>(7.50)  | 56<br>(2.20)  |
|         | 6          | 150 | 1020/S-X | 255<br>(10.04) | 158<br>(6.22) | 218<br>(8.58)   | 50.8<br>(2.00) | 260<br>(10.24) | 139<br>(5.47)  | 9.5   | 8 x 3/4 - 10   | 203.2<br>(8.00)  | 56<br>(2.20)  |
|         | 8          | 200 | 1020/S-X | 255<br>(10.04) | 158<br>(6.22) | 218<br>(8.58)   | 50.8<br>(2.00) | 260<br>(10.24) | 175<br>(6.89)  | 11.75 | 8 x 3/4 - 10   | 228.6<br>(9.00)  | 60<br>(2.36)  |
|         | 10         | 250 | 1040/S-X | 255<br>(10.04) | 158<br>(6.22) | 218<br>(8.58)   | 50.8<br>(2.00) | 292<br>(11.50) | 203<br>(7.99)  | 14.25 | 12 x 7/8 - 9   | 279.4<br>(11.00) | 68<br>(2.68)  |
|         | 12         | 300 | 1060/S-X | 255<br>(10.04) | 158<br>(6.22) | 218<br>(8.58)   | 50.8<br>(2.00) | 337<br>(13.27) | 242<br>(9.53)  | 17    | 12 x 7/8 - 9   | 304.8<br>(12.00) | 78<br>(3.07)  |
| 150 PSI | 14         | 350 | 1060/S-X | 255<br>(10.04) | 158<br>(6.22) | 218<br>(8.58)   | 50.8<br>(2.00) | 368<br>(14.49) | 267<br>(10.51) | 18.75 | 12 x 1 - 8     | 355.6<br>(14.00) | 78<br>(3.07)  |
|         | 16         | 400 | 1100/S-X | 310<br>(12.20) | 217<br>(8.54) | 244<br>(9.61)   | 76.2<br>(3.00) | 400<br>(15.75) | 297<br>(11.69) | 21.25 | 16 x 1 - 8     | 381<br>(15.00)   | 102<br>(4.02) |
|         | 18         | 450 | 1160/S-X | 310<br>(12.20) | 217<br>(8.54) | 244<br>(9.61)   | 76.2<br>(3.00) | 422<br>(16.61) | 318<br>(12.52) | 22.75 | 16 x 1 1/8 - 7 | 419.1<br>(16.50) | 114<br>(4.49) |
|         | 20         | 500 | 1250/S-X | 310<br>(12.20) | 217<br>(8.54) | 244<br>(9.61)   | 76.2<br>(3.00) | 480<br>(18.90) | 348<br>(13.70) | 25    | 20 x 1 1/8 - 7 | 457.2<br>(18.00) | 127<br>(5.00) |