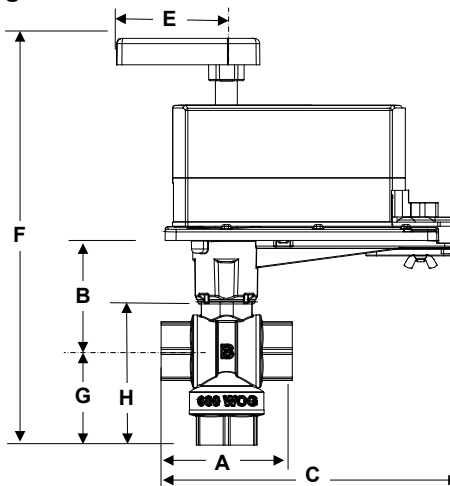




Valves shown are 1/2" to 2-1/2".
3" valve has bypass port in Z plane

SPECIFICATIONS

- Static Pressure/Temp:** 360 PSI / -4°F to 250°F (600 WOG)
- Service:** Chilled water, hot water, up to 50% Glycol, or contact factory for additional fluids.
- Flow Optimizer:** Glass Filled Polymer
- Body Material:** Forged Brass ASTM B283-06
- End Connections:** Brass – NPT or BSP-P
- Field Repairable Stem:** Dual Teflon seals and EPDM O-ring
- Ball Valve:** Nickel-plated brass ball
- Stem:** Brass
- Ball Seals:** Teflon Seals with EPDM O-Rings
- Angle of Rotation:** 0-90°
- Installation:** Valve can be installed in mixing or diverting installations.
- Leakage Rate:** A Port: ANSI Class IV; B: Port: Class III



Standard Mounting Kit
Shown – Direct Mount
available for KMC
actuators

DIMENSIONS & WEIGHTS (NOMINAL) (measured in inches and lbs unless noted)

All dimensions are for planning purposes only and may change without notice.

| SIZE | MODEL NO. | THROUGH Cv | A | B | C | DEPTH (NOT SHOWN) | E | F ¹ | G | H ² | WEIGHT |
|--------|-----------|--------------------------------------|-----|-----|------|-------------------|-----|----------------|-----|----------------|--------|
| 1/2" | UR3A_ | 0.33, 0.59, 1.0, 2.4, 4.3, 8.0 | 2.7 | 3.4 | 7.0 | 3.0 | 2.0 | 9.5 | 2.0 | 3.1 | 1.6 |
| 3/4" | UR3B_ | 0.40, 0.66, 1.3, 2.4, 3.8, 7.0, 11.0 | 2.8 | 3.4 | 6.5 | 3.0 | 2.0 | 8.9 | 2.0 | 2.5 | 1.6 |
| 1" | UR3C_ | 0.40, 0.65, 1.3, 2.3, 3.5, 10.0 | 2.8 | 3.4 | 7.3 | 3.0 | 2.0 | 9.6 | 2.1 | 3.2 | 1.6 |
| | | 8.6 | 3.0 | 3.9 | 6.8 | | | 9.9 | 2.4 | 3.5 | 2.3 |
| | | 4.5, 14.9, 22.3, 30.8 | 4.3 | 4.1 | 7.8 | | | 10.9 | 3.3 | 4.5 | 3.6 |
| 1-1/4" | UR3D_ | 4.1, 8.7, 19.4 | 3.0 | 3.9 | 6.8 | 3.0 | 2.0 | 9.9 | 2.4 | 3.5 | 3.3 |
| | | 12.7, 26.8, 34.1 | 3.6 | 4.1 | 7.3 | | | 10.4 | 2.8 | 4.0 | 3.5 |
| 1-1/2" | UR3E_ | 4.0, 8.3, 13.4, 32.0 | 3.4 | 4.1 | 7.8 | 3.0 | 2.0 | 10.9 | 2.7 | 4.5 | 3.6 |
| | | 23.5, 61.1 | 4.0 | 4.6 | 7.3 | | | 11.1 | 3.2 | 4.7 | 5.2 |
| 2" | UR3F_ | 23.9, 38.2, 56.7 | 4.0 | 4.6 | 7.3 | 3.0 | 2.0 | 11.1 | 3.2 | 4.7 | 5.2 |
| | | 82.6, 108.5 | 5.0 | 5.9 | 7.8 | | | 12.4 | 3.8 | 6.0 | 8.5 |
| 2-1/2" | UR3G_ | 38.1, 74.1, 99.5 | 5.3 | 5.9 | 7.8 | 3.0 | 2.0 | 12.4 | 4.1 | 6.0 | 9.1 |
| 3" | UR3H_ | 75, 100, 125, 150, 175, 200 | 9.4 | 4.5 | 10.1 | 7.1 | 2.0 | 12.3 | 2.8 | 5.9 | 23.0 |

NOTES

¹ Height includes 5.3" long shaft & standard mounting kit. If Neptronic, KMC Controls, or Siemens actuators are used deduct 1.3" from height.
² Height of valve without mounting kit. For KMC direct mount version add actuator height of 3.6" for full height.
³ Valve shown is 1/2" to 2-1/2". 3" valve has bypass port in Z plane.

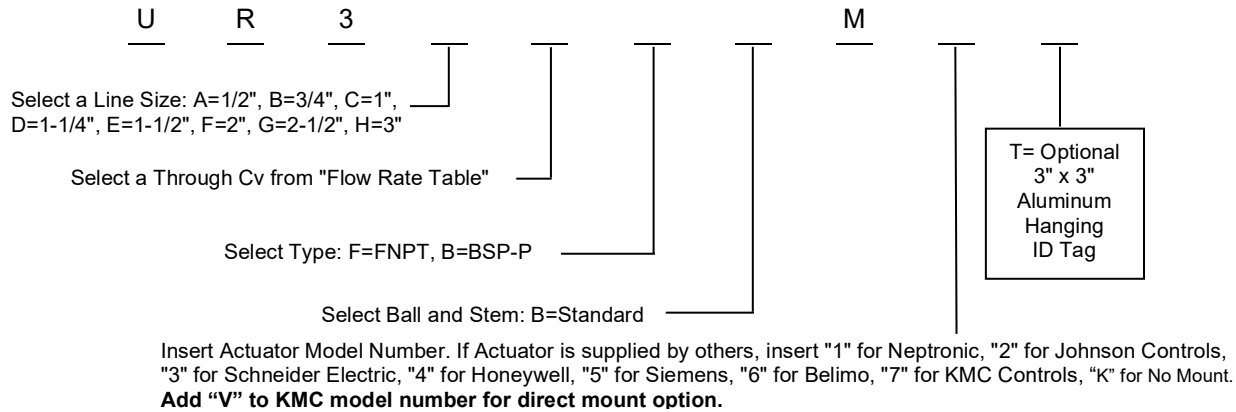
THROUGH Cv SELECTION AND FLOW RATE TABLE (GPM)

| LINE SIZE | MODEL NO. | THROUGH Cv | FULL ⁴ PORT | CLOSE OFF ⁵ ΔP | FLOWRATE (GPM) @ DIFFERENTIAL PRESSURE (PSI) | | | | | | | | | | | |
|-----------|-----------|------------|------------------------|---------------------------|--|-------|-------|-------|-------|----------------------|-------|-------|-------|-------|-------|-------|
| | | | | | 2-Position HVAC Apps | | | | | HVAC Modulating Apps | | | | | | |
| | | | | | Cv ⁶ | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 7.0 |
| 1/2" | UR3AA | A=0.33 | | 50 PSI | 0.2 | 0.33 | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.9 | 1.0 |
| | UR3AB | B=0.59 | | | 0.4 | 0.59 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.3 | 1.6 | 1.9 |
| | UR3AC | C=1.0 | | | 0.7 | 1.0 | 1.2 | 1.4 | 1.6 | 1.7 | 1.9 | 2.0 | 2.1 | 2.2 | 2.6 | 3.2 |
| | UR3AD | D=2.4 | | | 1.7 | 2.4 | 2.9 | 3.4 | 3.8 | 4.2 | 4.5 | 4.8 | 5.1 | 5.4 | 6.3 | 7.6 |
| | UR3AE | E=4.3 | | | 3.0 | 4.3 | 5.3 | 6.1 | 6.8 | 7.4 | 8.0 | 8.6 | 9.1 | 9.6 | 11.4 | 13.6 |
| | UR3AF | F=8.0 | | | 5.7 | 8.0 | 9.8 | 11.3 | 12.6 | 13.9 | 15.0 | 16.0 | 17.0 | 17.9 | 21.2 | 25.3 |
| 3/4" | UR3BA | A=0.40 | | 50 PSI | 0.3 | 0.40 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.9 | 1.1 | 1.3 |
| | UR3BB | B=0.66 | | | 0.5 | 0.66 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.7 | 2.1 |
| | UR3BC | C=1.3 | | | 0.9 | 1.3 | 1.6 | 1.8 | 2.1 | 2.3 | 2.4 | 2.6 | 2.8 | 2.9 | 3.4 | 4.1 |
| | UR3BD | D=2.4 | | | 1.7 | 2.4 | 2.9 | 3.4 | 3.8 | 4.2 | 4.5 | 4.8 | 5.1 | 5.4 | 6.3 | 7.6 |
| | UR3BE | E=3.8 | | | 2.7 | 3.8 | 4.7 | 5.4 | 6.0 | 6.6 | 7.1 | 7.6 | 8.1 | 8.5 | 10.1 | 12.0 |
| | UR3BG | G=7.0 | | | 4.9 | 7.0 | 8.6 | 9.9 | 11.1 | 12.1 | 13.1 | 14.0 | 14.8 | 15.7 | 18.5 | 22.1 |
| | UR3BF | F=11.0 | • | | 7.8 | 11.0 | 13.5 | 15.6 | 17.4 | 19.1 | 20.6 | 22.0 | 23.3 | 24.6 | 29.1 | 34.8 |
| 1" | UR3CA | A=0.40 | | 50 PSI | 0.3 | 0.40 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.9 | 1.1 | 1.3 |
| | UR3CB | B=0.65 | | | 0.5 | 0.65 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.7 | 2.1 |
| | UR3CC | C=1.3 | | | 0.9 | 1.3 | 1.6 | 1.8 | 2.1 | 2.3 | 2.4 | 2.6 | 2.8 | 2.9 | 3.4 | 4.1 |
| | UR3CD | D=2.3 | | | 1.6 | 2.3 | 2.8 | 3.3 | 3.6 | 4.0 | 4.3 | 4.6 | 4.9 | 5.1 | 6.1 | 7.3 |
| | UR3CE | E=3.5 | | | 2.5 | 3.5 | 4.3 | 4.9 | 5.5 | 6.1 | 6.5 | 7.0 | 7.4 | 7.8 | 9.3 | 11.1 |
| | UR3CF | F=10.0 | | | 7.1 | 10.0 | 12.2 | 14.1 | 15.8 | 17.3 | 18.7 | 20.0 | 21.2 | 22.4 | 26.5 | 31.6 |
| | UR3CG | G=8.6 | | | 6.1 | 8.6 | 10.5 | 12.1 | 13.6 | 14.9 | 16.1 | 17.2 | 18.2 | 19.2 | 22.7 | 27.2 |
| | UR3CH | H=22.3 | | | 15.8 | 22.3 | 27.3 | 31.5 | 35.3 | 38.6 | 41.7 | 44.6 | 47.3 | 49.9 | 59.0 | 70.5 |
| | UR3CJ | J=14.9 | | | 10.5 | 14.9 | 18.2 | 21.1 | 23.6 | 25.8 | 27.9 | 29.8 | 31.6 | 33.3 | 39.4 | 47.1 |
| | UR3CK | K=4.5 | | | 3.2 | 4.5 | 5.5 | 6.4 | 7.1 | 7.8 | 8.4 | 9.0 | 9.5 | 10.1 | 11.9 | 14.2 |
| 1-1/4" | UR3CM | M=30.8 | | 40 PSI | 21.8 | 30.8 | 37.7 | 43.6 | 48.7 | 53.3 | 57.6 | 61.6 | 65.3 | 68.9 | 81.5 | 97.4 |
| | UR3DB | B=19.4 | • | | 13.7 | 19.4 | 23.8 | 27.4 | 30.7 | 33.6 | 36.3 | 38.8 | 41.2 | 43.4 | 51.3 | 61.3 |
| | UR3DC | C=12.7 | | | 9.0 | 12.7 | 15.6 | 18.0 | 20.1 | 22.0 | 23.8 | 25.4 | 26.9 | 28.4 | 33.6 | 40.2 |
| | UR3DD | D=4.1 | | | 2.9 | 4.1 | 5.0 | 5.7 | 6.4 | 7.0 | 7.6 | 8.1 | 8.6 | 9.1 | 10.7 | 12.8 |
| | UR3DE | E=8.7 | | | 6.1 | 8.7 | 10.6 | 12.3 | 13.7 | 15.0 | 16.2 | 17.3 | 18.4 | 19.4 | 22.9 | 27.4 |
| | UR3DF | F=34.1 | • | | 24.1 | 34.1 | 41.8 | 48.2 | 53.9 | 59.1 | 63.8 | 68.2 | 72.3 | 76.2 | 90.2 | 107.8 |
| | UR3DG | G=26.8 | | | 19.0 | 26.8 | 32.8 | 37.9 | 42.4 | 46.4 | 50.1 | 53.6 | 56.9 | 59.9 | 70.9 | 84.7 |
| 1-1/2" | UR3EA | A=13.4 | | 40 PSI | 9.5 | 13.4 | 16.4 | 18.9 | 21.1 | 23.2 | 25.0 | 26.7 | 28.4 | 29.9 | 35.4 | 42.3 |
| | UR3EB | B=4.0 | | | 2.8 | 4.0 | 4.9 | 5.7 | 6.4 | 7.0 | 7.5 | 8.1 | 8.5 | 9.0 | 10.7 | 12.7 |
| | UR3EC | C=8.3 | | | 5.8 | 8.3 | 10.1 | 11.7 | 13.1 | 14.3 | 15.5 | 16.5 | 17.5 | 18.5 | 21.9 | 26.1 |
| | UR3ED | D=32.0 | • | | 22.6 | 32.0 | 39.2 | 45.3 | 50.6 | 55.5 | 59.9 | 64.0 | 67.9 | 71.6 | 84.7 | 101.3 |
| | UR3EE | E=23.5 | | | 16.6 | 23.5 | 28.8 | 33.3 | 37.2 | 40.8 | 44.0 | 47.1 | 49.9 | 52.6 | 62.3 | 74.4 |
| | UR3EF | F=61.1 | | | 43.2 | 61.1 | 74.8 | 86.4 | 96.6 | 105.8 | 114.3 | 122.2 | 129.6 | 136.6 | 161.6 | 193.2 |
| 2" | UR3FA | A=23.9 | | 40 PSI | 16.9 | 23.9 | 29.3 | 33.8 | 37.8 | 41.4 | 44.7 | 47.8 | 50.7 | 53.4 | 63.2 | 75.6 |
| | UR3FB | B=56.7 | | | 40.1 | 56.7 | 69.4 | 80.2 | 89.7 | 98.2 | 106.1 | 113.4 | 120.3 | 126.8 | 150.0 | 179.3 |
| | UR3FC | C=38.2 | | | 27.0 | 38.2 | 46.8 | 54.0 | 60.4 | 66.2 | 71.5 | 76.4 | 81.0 | 85.4 | 101.1 | 120.8 |
| | UR3FD | D=108.5 | | | 76.7 | 108.5 | 132.9 | 153.4 | 171.6 | 187.9 | 203 | 217 | 230 | 243 | 287 | 343 |
| | UR3FE | E=82.6 | | | 58.4 | 82.6 | 101.2 | 116.8 | 130.6 | 143.1 | 154.5 | 165.2 | 175.2 | 184.7 | 219 | 261 |
| 2-1/2" | UR3GA | A=38.1 | | 40 PSI | 26.9 | 38.1 | 46.7 | 53.9 | 60.2 | 66.0 | 71.3 | 76.2 | 80.8 | 85.2 | 100.8 | 120.5 |
| | UR3GC | C=74.1 | | | 52.4 | 74.1 | 90.8 | 104.8 | 117.2 | 128.3 | 138.6 | 148.2 | 157.2 | 165.7 | 196.1 | 234 |
| | UR3GB | B=99.5 | • | | 70.4 | 99.5 | 121.9 | 140.7 | 157.3 | 172.3 | 186.1 | 199.0 | 211 | 223 | 263 | 315 |
| 3" | UR3HA | A=75.0 | | 70 PSI | 53.0 | 75.0 | 91.9 | 106.1 | 118.6 | 129.9 | 140.3 | 150.0 | 159.1 | 167.7 | 198.4 | 237 |
| | UR3HB | B=100.0 | | | 70.7 | 100.0 | 122.5 | 141.4 | 158.1 | 173.2 | 187.1 | 200 | 212 | 223 | 264 | 316 |
| | UR3HC | C=125.0 | | | 88.4 | 125.0 | 153.1 | 176.8 | 197.6 | 216 | 234 | 250 | 265 | 279 | 331 | 395 |
| | UR3HD | D=150.0 | | | 106.0 | 150.0 | 183.7 | 212 | 237 | 260 | 281 | 300 | 318 | 335 | 397 | 474 |
| | UR3HE | E=175.0 | | | 123.7 | 175.0 | 214 | 247 | 277 | 303 | 327 | 350 | 371 | 391 | 463 | 553 |
| | UR3HF | F=200.0 | • | | 141.4 | 200 | 245 | 283 | 316 | 346 | 374 | 400 | 424 | 447 | 529 | 632 |

NOTES

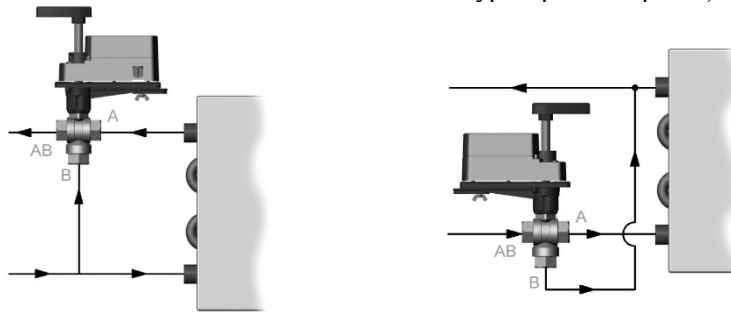
- ⁴ These valves are full port and do not have the Optimizer insert.
- ⁵ Close-Off Pressures measured with 35 in-lb. actuator. The "Close Off Pressure" is the maximum allowable pressure drop across the valve body when the valve is fully closed. (Do not use actuators with torques higher than 90 in-lbs)
- ⁶ The Cv is the gallons of water per minute (gpm) at 60°F that the valve will pass at 1 PSI pressure drop. Hence the 1.0 PSI pressure differential column in the table above is equivalent to the Cv value. Bypass Cv is 70%-80% of straight through Cv.

MODEL NUMBER SELECTION



PIPING CONFIGURATIONS

Our 3-Way ball allows the same 3-Way valve to be installed in either a mixing or diverting configuration without sacrificing any performance or Cv. (Valve shown is 1/2" to 2-1/2". 3" valve has bypass port in Z plane.)



Mixing — fluid enters through two inlets (A, B) and exits through one outlet (AB)

Diverting — fluid enters through one inlet (AB) and exits through two outlets (A, B)

ACTUATOR SELECTION



The Griswold Controls Universal Mounting Plate on all 1/2" to 3" valves is compatible with the following actuators besides the actuators detailed in the following tables. Direct Mount Option available on KMC Actuators Only. Contact the factory if you have a different model number not listed below.⁷

- Honeywell:** ML6161D2006, ML6174D2009, ML7161A2008, ML7174A2001, ML6185A1000, ML6185C1008, ML8185A1008, ML8185C1006, ML7285A1007, ML7285C1005, MN6105, MN7510, MN7520, MN6110
- Schneider Electric:** MF40-6083, MA40-7043, MA40-7043-501, MA40-7040, MA40-7040-501, MF40-7043, MF40-7043-501, MS40-7043, MS40-7043-501
- Johnson Controls:** M9106-AGA2, M9106-AGC2, M9106-GGA2, M9106-GGC2, M9206-AGA2, M9206-AGC2, M9206-GGA2, M9206-GGC2, M9104-AGA-2S, M9208-GGA-2, M9208-GGA-3
- Belimo:** LM24, LM24S, LF24, LF24S, LF120, LF120S, LF24-3, LF24-3S, LM24SR, LF24SR, LF24SRS, LMB24-SR-T, LMB24-3-T
- Neptronic:** BBT-24, BBT-1000, BBT-1060, BBT-1021, BBT-1080, BBTHV-1100, BBTHV-1160, BBTHV-1120, BBTHV-1180, BBM2000A, BBM2060A

NOTES

⁷ Do not use actuators capable of torques higher than 90 in-lbs.

SUITABLE FOR 1/2" TO 3/4" VALVES ONLY

| KMC CONTROLS⁸ | MEP-4201 | MEP-4255 | MEP-4252 |
|---------------------------------|---------------------------------------|-----------------|-----------------------|
| Power Supply | 24 Vac/dc | 100-240 Vac | 24 Vac/dc |
| Torque | 25 in-lb | 25 in-lb | 25 in-lb |
| Control Signal: On/Off | • | • | |
| Control Signal: 3 Point | • | | |
| Control Signal: | | | Modulating 2-10VDC |
| Speed | <35 sec | <25 sec | <50 sec |
| Fail Safe (Capacitor) | | • | • |
| Operating Power | 6 VA | 6 VA | 6 VA |
| Mounting Components | 9656-248 | 9656-248 | 9656-248 |
| Weight | 1.1 pounds | 1.5 pounds | 1.5 pounds |
| Wiring Diagram | See actuator cover for wiring diagram | | |

SUITABLE FOR 1/2" TO 3" VALVES

| KMC CONTROLS⁸ | MEP-4001 | MEP-4002 | MEP-4554 | MEP-4555 | MEP-4501 | MEP-4552 | MEP-4551 | MCP-36315000 |
|---------------------------------|---------------------------------------|-----------------------|-----------------|-----------------|-----------------|-----------------------|-----------------|---------------------|
| Power Supply | 24 Vac | 24 Vac | 24 Vac/dc | 100-240 Vac | 24 Vac | 24 Vac | 24 Vac | Pneumatic |
| Torque | 40 in-lb | 40 in-lb | 45 in-lb | 45 in-lb | 40 in-lb | 45 in-lb | 45 in-lb | 59 in-lb |
| Control Signal: On/Off | | | • | • | • | | | |
| Control Signal: 3 Point | • | | | | • | | • | |
| Control Signal: | | Modulating 2-10VDC | | | | Modulating 2-10VDC | | 8-13 psi |
| Speed | 90 sec | 90 sec | <35 sec | <25 sec | <35 sec | 50 sec | 90 sec | |
| Fail Safe (Capacitor) | | | • | • | | • | • | |
| Operating Power | 2 VA | 4 VA | 6 VA | 6 VA | 6 VA | 6 VA | 6 VA | |
| Mounting Components | 9656-250 | 9656-250 | 9656-248 | 9656-248 | 9656-248 | 9656-250 | 9656-250 | 9656-852 |
| Weight | 1.1 pounds | 1.1 pounds | 1.5 pounds | 1.5 pounds | 1.1 pounds | 3.0 pounds | 3.0 pounds | 1.5 pounds |
| Wiring Diagram | See actuator cover for wiring diagram | | | | | | | |

| SIEMENS | GDE131.1P | GDE161.1P | GMA121.1P | GMA131.1P | GMA161.1P |
|--|-----------------------------------|------------------|------------------|------------------|------------------|
| Power Supply | 24Vac | 24Vac | 24Vac/dc | 24Vac/dc | 24Vac/dc |
| Torque | 44 in-lb | 44 in-lb | 62 in-lb | 62 in-lb | 62 in-lb |
| Control Signal: On/Off | | | • | | |
| Control Signal: 3 Point | • | | | • | |
| Control Signal: Modulating 0–10 VDC | | • | | | • |
| Speed | 90 sec | 90 sec | 90 sec | 90 sec | 90 sec |
| Fail Safe (Spring Return) | | | • | • | • |
| Operating Power | 3.3 VA | 3.3 VA | 5 VA | 5 VA | 5 VA |
| Mounting Components | 9656-250 | 9656-250 | 9656-250 | 9656-250 | 9656-250 |
| Weight | 1.1 pounds | 1.1 pounds | 3.0 pounds | 3.0 pounds | 3.0 pounds |
| Wiring Diagram | <p>Where 6 is CW and 7 is CCW</p> | | | | |

NOTES

⁸ Add V to KMC model number for direct mount option.