

# Mark 608BP Series

## Balanced Plug Gas Pressure Regulators

The Mark 608BP Balanced Plug Gas Pressure Regulator is the ideal valve for low pressure gas regulation with higher inlet pressures. The self-contained low pressure gas regulator is for use on tank blanketing, gas meter inlet pressure regulating, gas burners and other low pressure air and gas applications.

The Mark 608BP is normally open. Changes in the outlet pressure are registered through the sensing line, causing the large elastomer diaphragm to rise, which moves the plug toward the seat. As outlet pressure decreases, the diaphragm moves down and moves the plug away from the seat to increase flow. The lever, which connects the stem to the diaphragm, amplifies diaphragm forces for tighter shutoff.

### FEATURES

- Inlet pressures up to 150 psi (10 bar)
- Rugged, heavy-duty design – emergency outlet pressure may reach 100% on inlet pressure without damaging valve
- 360° body orientation – valve can be installed in any position, and can be easily repositioned while in-line
- Easy maintenance – seat and plug can be inspected without removing body from the line
- Completely self-operated – no external power source required
- Tight shutoff – soft elastomer plug provides ANSI Class VI shutoff



## SPECIFICATIONS

**Sizes:** 3/4" (DN20), 1" (DN25)

### End Connections

- Threaded – NPT, SWE, BSPT, BSPP
- Flanged – 150#, 300#, PN16, PN40

### Materials

- Body: Carbon Steel (A216, WCB), Stainless Steel (A351/CF8M)
- Seat: Stainless Steel (CS/SS)
- Plug: Stainless Steel and Buna-N; Stainless Steel and Viton (CS & SS body)
- Diaphragm: Buna-N/Nylon; Viton (CS & SS body)
- Guide: Delrin; optional PTFE
- Actuator Cases: CS for CS; SST for SST
- Others upon request

**Service:** air or gas

**Shutoff:** ANSI Class VI

**Temperature Range:** -20°F (-29°C) to 200°F (93°C)

**Maximum Inlet Pressure:** 150 psi (10 bar)

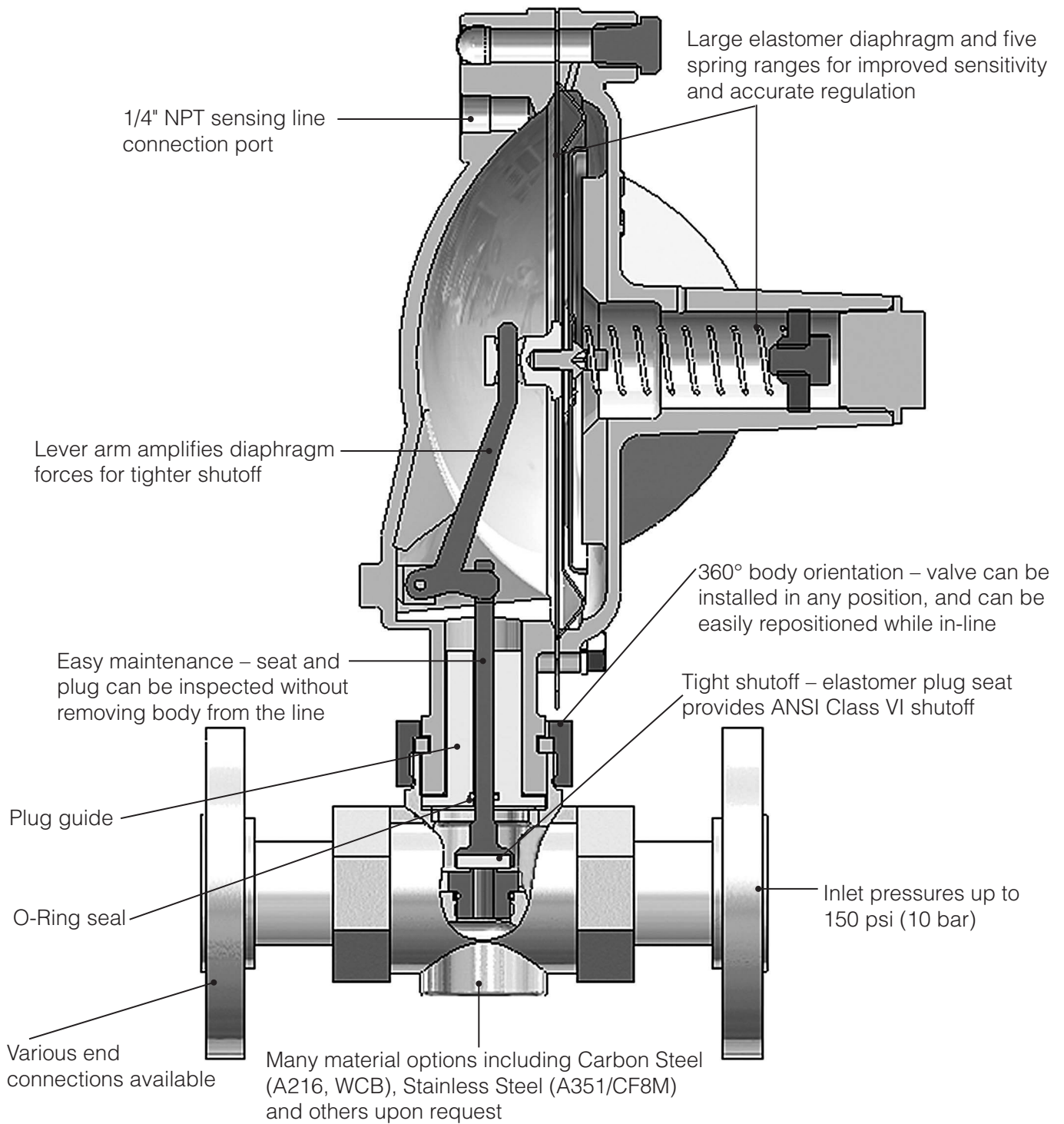
### Reduced Pressure Control Range

- \* 2.0 to 5.5 inches w.c. (5,0 to 13,7 mbar)
- \* 4.0 to 10.0 inches w.c. (10,0 to 24,9 mbar)
- 5.0 to 30.0 inches w.c. (12,4 to 74,7 mbar)
- 0.5 to 1.75 psig (0,03 to 0,12 bar)
- 1.0 to 3.5 psig (0,07 to 0,24 bar)

\* 1/4" orifice only

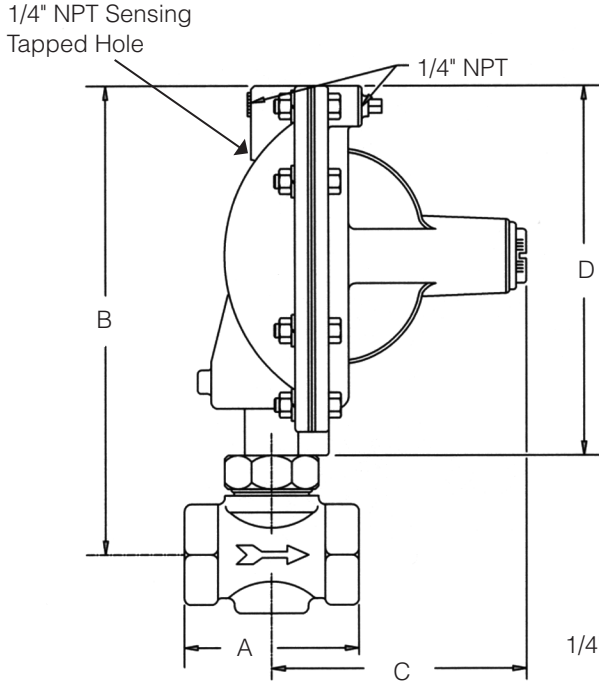
**Orifice Sizes (interchangeable):** 1/4" (6mm), 5/16" (8mm), 3/8" (10mm)

MARK 608BP BALANCED PLUG GAS PRESSURE REGULATOR



MARK 608BP BALANCED PLUG GAS PRESSURE REGULATOR

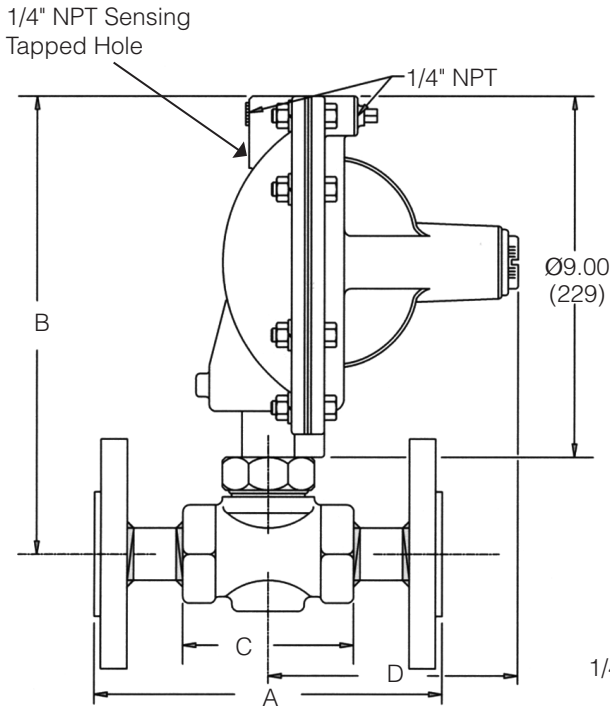
**DIMENSIONS NPT, SWE, BSPT, BSPP ENDS**



| Valve Size | Dimensions (inches) |       |      |      | Weight lbs |
|------------|---------------------|-------|------|------|------------|
|            | A                   | B     | C    | D    |            |
| 3/4"       | 3.88                | 11.31 | 5.75 | 9.00 | 15         |
| 1"         | 3.88                | 11.31 | 5.75 | 9.00 | 15         |

| Valve Size | Dimensions (metric) |     |     |     | Weight kgs |
|------------|---------------------|-----|-----|-----|------------|
|            | A                   | B   | C   | D   |            |
| DN20       | 99                  | 287 | 146 | 229 | 6,8        |
| DN25       | 99                  | 287 | 146 | 229 | 6,8        |

**DIMENSIONS FLANGED ENDS**



| Valve Size | Ends  | Dimensions (inches) |       |      |      | Weight lbs |
|------------|-------|---------------------|-------|------|------|------------|
|            |       | A                   | B     | C    | D    |            |
| 3/4"       | 150FE | 7.25                | 11.31 | 3.88 | 5.75 | 24         |
|            | 300FE | 7.50                | 11.31 | 3.88 | 5.75 | 27         |
| 1"         | 150FE | 7.25                | 11.31 | 3.88 | 5.75 | 24         |
|            | 300FE | 7.75                | 11.31 | 3.88 | 5.75 | 27         |

| Valve Size | Ends  | Dimensions (mm) |     |    |     | Weight kgs |
|------------|-------|-----------------|-----|----|-----|------------|
|            |       | A               | B   | C  | D   |            |
| DN20       | 150FE | 184             | 287 | 99 | 146 | 10,8       |
|            | 300FE | 191             | 287 | 99 | 146 | 12,2       |
| DN25       | 150FE | 184             | 287 | 99 | 146 | 10,8       |
|            | 300FE | 197             | 287 | 99 | 146 | 12,2       |

**3/4" MK608BP FLOW CAPACITIES WITH 1/4" ORIFICE (scfh)**

| Range          | Setpoint | Inlet Pressure | 330Nitrogen @ 0.97sg               |         |         |
|----------------|----------|----------------|------------------------------------|---------|---------|
|                |          |                | Deviation from Setpoint (in/water) |         |         |
|                |          |                | +/- 0.5                            | +/- 1.0 | +/- 2.0 |
| 2 - 5.5" w.c.  | 2" w.c.  | 5              | 212                                | 424     | 460     |
|                |          | 20             | 516                                | 1408    | 1595    |
|                |          | 40             | 2003                               | 2121    | 2239    |
|                |          | 60             | 2891                               | 3029    | 3167    |
|                |          | 80             | 3876                               | 4031    | 4031    |
|                |          | 100            | 4948                               | 5119    | 5119    |
|                |          | 125            | 6402                               | 6590    | 6590    |
|                |          | 150            | 7539                               | 7759    | 7759    |
| 2 - 5.5" w.c.  | 4" w.c.  | 5              | 247                                | 354     | 566     |
|                |          | 20             | 1126                               | 1408    | 1408    |
|                |          | 40             | 2121                               | 2356    | 2356    |
|                |          | 60             | 3029                               | 3167    | 3167    |
|                |          | 80             | 3876                               | 4031    | 4031    |
|                |          | 100            | 4948                               | 5119    | 5119    |
|                |          | 125            | 6025                               | 6402    | 6402    |
|                |          | 150            | 7099                               | 7539    | 7539    |
| 4 - 10" w.c.   | 7" w.c.  | 5              | 141                                | 283     | 354     |
|                |          | 20             | 188                                | 798     | 1126    |
|                |          | 40             | 589                                | 2121    | 2239    |
|                |          | 60             | 1102                               | 2891    | 3029    |
|                |          | 80             | 1395                               | 3876    | 3876    |
|                |          | 100            | 4607                               | 4948    | 5119    |
|                |          | 125            | 5837                               | 6214    | 6590    |
|                |          | 150            | 6879                               | 7319    | 7759    |
| 5 - 30" w.c.   | 20" w.c. | 5              | 71                                 | 141     | 247     |
|                |          | 20             | 141                                | 235     | 422     |
|                |          | 40             | 236                                | 412     | 707     |
|                |          | 60             | 138                                | 413     | 964     |
|                |          | 80             | 233                                | 465     | 1240    |
|                |          | 100            | 341                                | 682     | 4265    |
|                |          | 125            | 282                                | 659     | 5272    |
|                |          | 150            | 330                                | 771     | 6219    |
| 0.5 - 1.75 psi | 1 psi    | 5              | 71                                 | 141     | 354     |
|                |          | 20             | 235                                | 469     | 1126    |
|                |          | 40             | 412                                | 825     | 2121    |
|                |          | 60             | 620                                | 1239    | 3029    |
|                |          | 80             | 775                                | 3411    | 3876    |
|                |          | 100            | 938                                | 1791    | 4777    |
|                |          | 125            | 1036                               | 5084    | 5837    |
|                |          | 150            | 1210                               | 5998    | 6879    |
| 1 - 3.5 psi    | 3 psi    | 5              | 247                                | 389     | 495     |
|                |          | 20             | 704                                | 1126    | 1408    |
|                |          | 40             | 1119                               | 2239    | 2356    |
|                |          | 60             | 2754                               | 2891    | 3029    |
|                |          | 80             | 3566                               | 3721    | 3876    |
|                |          | 100            | 4436                               | 4948    | 4948    |
|                |          | 125            | 5461                               | 5649    | 6025    |
|                |          | 150            | 6439                               | 6659    | 7099    |

**3/4" MK608BP FLOW CAPACITIES WITH 5/16" ORIFICE (scfh)**

| Range          | Setpoint | Inlet Pressure | 330Nitrogen @ 0.97sg               |         |         |
|----------------|----------|----------------|------------------------------------|---------|---------|
|                |          |                | Deviation from Setpoint (in/water) |         |         |
|                |          |                | +/- 0.5                            | +/- 1.0 | +/- 2.0 |
| 5 - 30" w.c.   | 20" w.c. | 5              | 71                                 | 283     | 212     |
|                |          | 20             | 188                                | 563     | 469     |
|                |          | 40             | 118                                | 943     | 825     |
|                |          | 60             | 344                                | 1377    | 1102    |
|                |          | 80             | 310                                | 1860    | 1473    |
|                |          | 100            | 299                                | 2218    | 1706    |
|                |          | 125            | 188                                | 2824    | 1789    |
|                |          | 150            | 220                                | 3301    | 2091    |
| 0.5 - 1.75 psi | 1 psi    | 5              | 159                                | 283     | 636     |
|                |          | 20             | 282                                | 563     | 1783    |
|                |          | 40             | 471                                | 943     | 2592    |
|                |          | 60             | 551                                | 1377    | 3442    |
|                |          | 80             | 775                                | 1860    | 6201    |
|                |          | 100            | 1365                               | 2218    | 7166    |
|                |          | 125            | 1318                               | 2824    | 8850    |
|                |          | 150            | 1541                               | 3301    | 10456   |
| 1 - 3.5 psi    | 3 psi    | 5              | 354                                | 707     | 919     |
|                |          | 20             | 845                                | 1877    | 2158    |
|                |          | 40             | 1296                               | 2946    | 3535    |
|                |          | 60             | 2065                               | 4819    | 5095    |
|                |          | 80             | 2636                               | 6046    | 6511    |
|                |          | 100            | 3242                               | 7166    | 8019    |
|                |          | 125            | 3766                               | 8850    | 9415    |
|                |          | 150            | 4458                               | 10456   | 11117   |

**3/4" MK608BP FLOW CAPACITIES WITH 3/8" ORIFICE (scfh)**

| Range          | Setpoint | Inlet Pressure | 330Nitrogen @ 0.97sg               |         |         |
|----------------|----------|----------------|------------------------------------|---------|---------|
|                |          |                | Deviation from Setpoint (in/water) |         |         |
|                |          |                | +/- 0.5                            | +/- 1.0 | +/- 2.0 |
| 5 - 30" w.c.   | 20" w.c. | 5              | 106                                | 177     | 354     |
|                |          | 20             | 188                                | 282     | 610     |
|                |          | 40             | 236                                | 471     | 1296    |
|                |          | 60             | 138                                | 344     | 1239    |
|                |          | 80             | 310                                | 775     | 1783    |
|                |          | 100            | 682                                | 1365    | 3242    |
|                |          | 125            | 565                                | 1224    | 1695    |
|                |          | 150            | 661                                | 1431    | 1981    |
| 0.5 - 1.75 psi | 1 psi    | 5              | 141                                | 283     | 813     |
|                |          | 20             | 375                                | 704     | 2065    |
|                |          | 40             | 530                                | 1178    | 3181    |
|                |          | 60             | 620                                | 1515    | 4544    |
|                |          | 80             | 698                                | 1783    | 5891    |
|                |          | 100            | 768                                | 2218    | 7337    |
|                |          | 125            | 1036                               | 2448    | 8285    |
|                |          | 150            | 1210                               | 2862    | 9740    |
| 1 - 3.5 psi    | 3 psi    | 5              | 495                                | 849     | 1131    |
|                |          | 20             | 892                                | 1971    | 3003    |
|                |          | 40             | 1767                               | 3417    | 4595    |
|                |          | 60             | 2203                               | 4681    | 6747    |
|                |          | 80             | 2248                               | 5581    | 7907    |
|                |          | 100            | 2986                               | 4948    | 10578   |
|                |          | 125            | 3766                               | 8097    | 11863   |
|                |          | 150            | 4458                               | 9520    | 13978   |

MARK 608BP BALANCED PLUG GAS PRESSURE REGULATOR

**1" MK608BP FLOW CAPACITIES WITH 1/4" ORIFICE (scfh)**

| Range          | Setpoint | Inlet Pressure | Nitrogen @ 0.97sg                  |         |         |
|----------------|----------|----------------|------------------------------------|---------|---------|
|                |          |                | Deviation from Setpoint (in/water) |         |         |
|                |          |                | +/- 0.5                            | +/- 1.0 | +/- 2.0 |
| 2 - 5.5" w.c.  | 2" w.c.  | 5              | 71                                 | 389     | 495     |
|                |          | 20             | 751                                | 1220    | 1220    |
|                |          | 40             | 2356                               | 2356    | 2356    |
|                |          | 60             | 3029                               | 3167    | 3167    |
|                |          | 80             | 4186                               | 4186    | 4341    |
|                |          | 100            | 5460                               | 5460    | 5460    |
|                |          | 125            | 6590                               | 6779    | 6779    |
| 2 - 5.5" w.c.  | 4" w.c.  | 5              | 212                                | 441     | 530     |
|                |          | 20             | 516                                | 1126    | 1501    |
|                |          | 40             | 1296                               | 2298    | 2356    |
|                |          | 60             | 3167                               | 3029    | 3098    |
|                |          | 80             | 4108                               | 4186    | 4186    |
|                |          | 100            | 3412                               | 5119    | 5119    |
|                |          | 125            | 6025                               | 6025    | 6025    |
| 4 - 10" w.c.   | 7" w.c.  | 5              | 247                                | 354     | 495     |
|                |          | 20             | 352                                | 845     | 1408    |
|                |          | 40             | 471                                | 1650    | 2415    |
|                |          | 60             | 757                                | 3167    | 3167    |
|                |          | 80             | 1240                               | 4031    | 4263    |
|                |          | 100            | 5119                               | 5119    | 5289    |
|                |          | 125            | 6214                               | 6214    | 6214    |
| 5 - 30" w.c.   | 20" w.c. | 5              | 53                                 | 141     | 247     |
|                |          | 20             | 164                                | 258     | 422     |
|                |          | 40             | 236                                | 530     | 943     |
|                |          | 60             | 275                                | 551     | 1239    |
|                |          | 80             | 388                                | 620     | 1860    |
|                |          | 100            | 512                                | 1024    | 2047    |
|                |          | 125            | 753                                | 1506    | 2260    |
| 0.5 - 1.75 psi | 1 psi    | 5              | 141                                | 212     | 530     |
|                |          | 20             | 282                                | 1314    | 1408    |
|                |          | 40             | 471                                | 1060    | 2239    |
|                |          | 60             | 551                                | 1239    | 3167    |
|                |          | 80             | 775                                | 1550    | 2636    |
|                |          | 100            | 1194                               | 2218    | 4777    |
|                |          | 125            | 1318                               | 2260    | 6025    |
| 1 - 3.5 psi    | 3 psi    | 5              | 318                                | 707     | 707     |
|                |          | 20             | 657                                | 1501    | 1501    |
|                |          | 40             | 1296                               | 2239    | 2356    |
|                |          | 60             | 2891                               | 3029    | 3167    |
|                |          | 80             | 3876                               | 4186    | 4341    |
|                |          | 100            | 4777                               | 5119    | 5289    |
|                |          | 125            | 5649                               | 5837    | 6026    |
| 150            | 6659     | 6879           | 7099                               |         |         |



**1" MK608BP FLOW CAPACITIES WITH 5/16" ORIFICE (scfh)**

| Range          | Setpoint | Inlet Pressure | Nitrogen @ 0.97sg                  |         |         |
|----------------|----------|----------------|------------------------------------|---------|---------|
|                |          |                | Deviation from Setpoint (in/water) |         |         |
|                |          |                | +/- 0.5                            | +/- 1.0 | +/- 2.0 |
| 5 - 30" w.c.   | 20" w.c. | 5              | 141                                | 212     | 424     |
|                |          | 20             | 188                                | 375     | 563     |
|                |          | 40             | 236                                | 471     | 825     |
|                |          | 60             | 207                                | 413     | 964     |
|                |          | 80             | 233                                | 620     | 1860    |
|                |          | 100            | 341                                | 853     | 2730    |
|                |          | 125            | 377                                | 753     | 3013    |
|                |          | 150            | 446                                | 881     | 3577    |
| 0.5 - 1.75 psi | 1 psi    | 5              | 71                                 | 212     | 530     |
|                |          | 20             | 235                                | 610     | 1689    |
|                |          | 40             | 412                                | 825     | 2710    |
|                |          | 60             | 551                                | 1033    | 4819    |
|                |          | 80             | 620                                | 1705    | 6046    |
|                |          | 100            | 853                                | 1877    | 6995    |
|                |          | 125            | 753                                | 2260    | 8473    |
|                |          | 150            | 881                                | 2642    | 10016   |
| 1 - 3.5 psi    | 3 psi    | 5              | 566                                | 884     | 1273    |
|                |          | 20             | 657                                | 1689    | 2065    |
|                |          | 40             | 1296                               | 2592    | 3535    |
|                |          | 60             | 1928                               | 4819    | 5095    |
|                |          | 80             | 2480                               | 6201    | 6511    |
|                |          | 100            | 3242                               | 7166    | 8019    |
|                |          | 125            | 4142                               | 8662    | 9791    |
|                |          | 150            | 4898                               | 10236   | 11556   |

**1" MK608BP FLOW CAPACITIES WITH 3/8" ORIFICE (scfh)**

| Range          | Setpoint | Inlet Pressure | Nitrogen @ 0.97sg                  |         |         |
|----------------|----------|----------------|------------------------------------|---------|---------|
|                |          |                | Deviation from Setpoint (in/water) |         |         |
|                |          |                | +/- 0.5                            | +/- 1.0 | +/- 2.0 |
| 5 - 30" w.c.   | 20" w.c. | 5              | 106                                | 177     | 354     |
|                |          | 20             | 188                                | 282     | 610     |
|                |          | 40             | 236                                | 471     | 1296    |
|                |          | 60             | 138                                | 344     | 1239    |
|                |          | 80             | 310                                | 775     | 1783    |
|                |          | 100            | 682                                | 1365    | 3242    |
|                |          | 125            | 565                                | 1224    | 1695    |
|                |          | 150            | 661                                | 1431    | 1981    |
| 0.5 - 1.75 psi | 1 psi    | 5              | 141                                | 283     | 813     |
|                |          | 20             | 375                                | 704     | 2065    |
|                |          | 40             | 530                                | 1178    | 3181    |
|                |          | 60             | 620                                | 1515    | 4544    |
|                |          | 80             | 698                                | 1783    | 5891    |
|                |          | 100            | 768                                | 2218    | 7337    |
|                |          | 125            | 1036                               | 2448    | 8285    |
|                |          | 150            | 1210                               | 2862    | 9740    |
| 1 - 3.5 psi    | 3 psi    | 5              | 495                                | 849     | 1131    |
|                |          | 20             | 892                                | 1971    | 3003    |
|                |          | 40             | 1767                               | 3417    | 4595    |
|                |          | 60             | 2203                               | 4681    | 6747    |
|                |          | 80             | 2248                               | 5581    | 7907    |
|                |          | 100            | 2986                               | 4948    | 10578   |
|                |          | 125            | 3766                               | 8097    | 11863   |
|                |          | 150            | 4458                               | 9520    | 13978   |

**ORDERING SCHEMATIC**

| Model No | Size | Body Mat'l | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----------|------|------------|---|---|---|---|---|---|---|---|---|----|----|----|
|          |      |            |   |   |   |   |   |   |   |   |   |    |    |    |

|       | Model    |
|-------|----------|
| 608BP | Standard |

|     | Size        |
|-----|-------------|
| 075 | 3/4" (DN20) |
| 100 | 1" (DN25)   |

|    | Body Material          |
|----|------------------------|
| CS | Carbon Steel (WCB)     |
| S6 | Stainless Steel (CF8M) |

| 1 & 2 | End Connections |
|-------|-----------------|
| PT    | NPT             |
| BT    | BSPT            |
| BP    | BSPP            |
| SW    | FSW             |
| F1    | 125#FE          |
| F5    | 150# FE         |
| F2    | 250# FE         |
| F3    | 300# FE         |
| F7    | PN10 DIN FE     |
| F6    | PN16 DIN FE     |
| F8    | PN25 DIN FE     |
| F4    | PN40 DIN FE     |
| ZZ    | Non-Standard    |

| 3 & 4 | Orifice      |      |
|-------|--------------|------|
|       | inches       | mm   |
| 03    | 1/4"         | 6mm  |
| 04    | 5/16"        | 8mm  |
| 05    | 3/8"         | 10mm |
| ZZ    | Non-Standard |      |

| 5 & 6 | Range           |                    |
|-------|-----------------|--------------------|
|       | W.C.            | mbar               |
| 02    | * 2 - 5.5" W.C. | * 5,0 - 13,7 mbar  |
| 03    | * 4 - 10" W.C.  | * 10,0 - 24,9 mbar |
| 04    | 5 - 30" W.C.    | 12,4 - 74,7 mbar   |
| 05    | 0.5 - 1.75 psi  | 0.03 - 0.12 mbar   |
| 06    | 1 - 3.5 psi     | 0,07 - 0,24 mbar   |
| ZZ    | Non-Standard    |                    |

\* 1/4" orifice only

| 7 & 8 | Actuator     |
|-------|--------------|
| SD    | Standard     |
| ZZ    | Non-Standard |

| 9 & 10 | Bushing |
|--------|---------|
| 00     | None    |

| 11 & 12 | PED Compliance |
|---------|----------------|
| 00      | Not Required   |
| 0F      | CE Category 1  |
| 0G      | SEP Compliant  |
| ZZ      | Non-Standard   |

