

### Features

- All NPT connections are in the valve body to allow in-line piping
- No Minimum Operating Pressure Differential required
- Broadest range of applications
- Mountable in any position

### Construction

| Valve Parts in Contact with Fluids |                              |                     |
|------------------------------------|------------------------------|---------------------|
| Body                               | Brass                        | 303 Stainless Steel |
| Seals and Disc                     | NBR or Cast UR, as Listed    |                     |
| Core Tube                          | 305 Stainless Steel          |                     |
| Core and Plugnut                   | 430F Stainless Steel         |                     |
| Core Springs                       | 302 Stainless Steel          |                     |
| Shading Coil                       | Copper                       | Silver              |
| Disc-Holder                        | CA                           |                     |
| Core Guide                         | CA (10.1 and 17.1 Watt only) |                     |

### Electrical

| Standard Coil and Class of Insulation | Watt Rating and Power Consumption |       |            |           | Spare Coil Part Number |        |                |        |
|---------------------------------------|-----------------------------------|-------|------------|-----------|------------------------|--------|----------------|--------|
|                                       | DC Watts                          | AC    |            |           | General Purpose        |        | Explosionproof |        |
|                                       |                                   | Watts | VA Holding | VA Inrush | AC                     | DC     | AC             | DC     |
| F                                     | 10.6                              | 6.1   | 16         | 30        | 238210                 | 238310 | 238214         | 238314 |
| F                                     | -                                 | 9.1   | 25         | 40        | 238210                 | -      | 238214         | -      |
| F                                     | 11.6                              | 10.1  | 25         | 50        | 238610                 | 238710 | 238614         | 238714 |
| F                                     | 22.6                              | 17.1  | 40         | 70        | 238610                 | 238710 | 238614         | 238714 |

**Standard Voltages:** 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz).  
6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

### Solenoid Enclosures

**Standard:** Watertight, Types 1, 2, 3, 3S, 4, and 4X.

**Optional:** Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to the catalog number.)

See *Optional Features Section* for other available options.

### Nominal Ambient Temp. Ranges

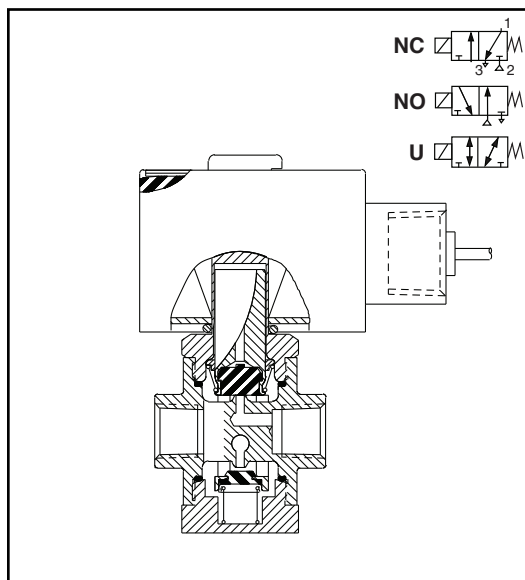
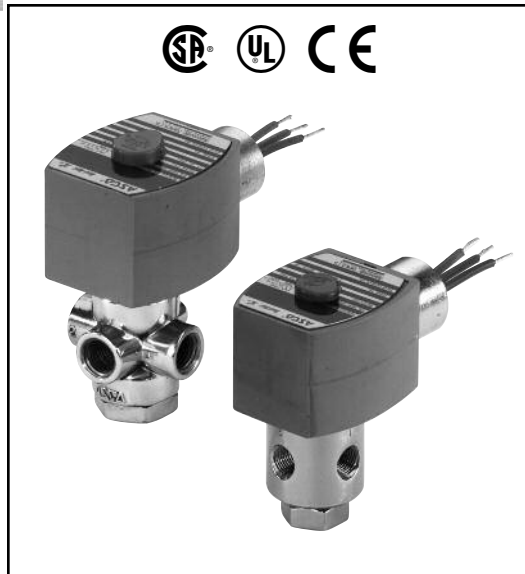
AC: 32°F to 125°F (0°C to 52°C)

DC: 32°F to 104°F (0°C to 40°C)

**Note:** Some stainless steel constructions are rated -40°F (-40°C).

See note ④ in specifications table.

Refer to *Engineering Section* for details.



### Approvals

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

SIL 3 capable per IEC 61508 on normally closed const. Third party certification provided by EXIDA.

Refer to *Engineering Section* for details.

ATEX/IECEx certified with prefix "EV" as listed.

Refer to *Optional Features Electrical Section* for details.

3-WAY

**Specifications (English units)**

| Pipe Size (in)   | Orifice Size (in) | Cv Flow Factor | Operating Pressure Differential (psi) |         |                   |               |         |                   | Max. Fluid Temp. °F |     | Brass Body     |             | Stainless Steel Body |             | Watt Rating/Class of Coil Insulation ② |        |
|--|-------------------|----------------|---------------------------------------|---------|-------------------|---------------|---------|-------------------|---------------------|-----|----------------|-------------|----------------------|-------------|--|--------|
|  |                   |                | Max. AC                               |         |                   | Max. DC       |         |                   | AC                  | DC  | Catalog Number | Const. Ref. | Catalog Number       | Const. Ref. | AC                                     | DC     |
|  |                   |                | Air-Inert Gas                         | Water ⑤ | Lt. Oil @ 300 SSU | Air-Inert Gas | Water ⑤ | Lt. Oil @ 300 SSU |                     |     |                |             |                      |             |  |        |
| <b>UNIVERSAL OPERATION (Pressure at any port)</b>  |                   |                |                                       |         |                   |               |         |                   |                     |     |                |             |                      |             |  |        |
| 1/8  | 3/64              | 0.06           | 175                                   | 175     | 175               | 125           | 125     | 125               | 140                 | 120 | 8320G130 ①     | 1           | 8320G140 ①           | 1           | 9.1F                                   | 10.6F  |
| 1/8  | 1/16              | 0.09           | 100                                   | 100     | 100               | 65            | 65      | 65                | 180                 | 120 | 8320G001       | 1           | 8320G041 ③           | 1           | 9.1F                                   | 10.6F  |
| 1/8  | 1/16              | 0.09           | 175                                   | 175     | 175               | 125           | 125     | 125               | 200                 | 150 | 8320G212       | 4           | 8320G221 ④⑥          | 4           | 17.1/F                                 | 22.6/F |
| 1/8  | 3/32              | 0.12           | 50                                    | 50      | 50                | 50            | 50      | 50                | 180                 | 120 | 8320G083       | 1           | 8320G087 ③           | 1           | 6.1/F                                  | 10.6/F |
| 1/8  | 3/32              | 0.12           | 100                                   | 100     | 100               | 60            | 60      | 60                | 200                 | 150 | 8320G213       | 4           | 8320G222 ④           | 4           | 17.1/F                                 | 11.6/F |
| 1/8  | 1/8               | 0.21           | 30                                    | 30      | 30                | 20            | 20      | 20                | 180                 | 120 | 8320G003       | 1           | 8320G043 ③           | 1           | 9.1/F                                  | 10.6/F |
| 1/8  | 1/8               | 0.21           | 50                                    | 50      | 50                | 25            | 25      | 25                | 200                 | 150 | 8320G214       | 4           | 8320G223 ④           | 4           | 17.1/F                                 | 11.6/F |
| 1/4  | 1/16              | 0.09           | 125                                   | 130     | 130               | 75            | 75      | 75                | 200                 | 150 | 8320G172       | 2           | -                    | -           | 10.1/F                                 | 11.6/F |
| 1/4  | 1/16              | 0.09           | 175                                   | 175     | 175               | 125           | 125     | 125               | 200                 | 150 | -              | -           | 8320G230 ④⑥          | 3           | 17.1/F                                 | 22.6/F |
| 1/4  | 3/32              | 0.12           | 100                                   | 100     | 100               | 60            | 60      | 60                | 200                 | 150 | 8320G174       | 2           | 8320G200 ③④⑥         | 3           | 17.1/F                                 | 11.6/F |
| 1/4  | 1/8               | 0.25           | 50                                    | 50      | 50                | 25            | 25      | 25                | 200                 | 150 | 8320G176 ⑥     | 2           | 8320G201 ③④⑥         | 3           | 17.1/F                                 | 11.6/F |
| 1/4  | 11/64             | 0.35           | 20                                    | 20      | 20                | 12            | 12      | 12                | 200                 | 150 | 8320G178       | 2           | -                    | -           | 10.1/F                                 | 11.6/F |
| <b>NORMALLY CLOSED (Closed when de-energized) – PFD<sub>AVG</sub> = 6.81 x 10<sup>-4</sup></b> |                   |                |                                       |         |                   |               |         |                   |                     |     |                |             |                      |             |  |        |
| 1/8  | 3/64              | 0.06           | 200                                   | 200     | 200               | 200           | 200     | 200               | 180                 | 120 | 8320G132       | 1           | 8320G142 ③           | 1           | 6.1F                                   | 10.6/F |
| 1/8  | 1/16              | 0.09           | 150                                   | 125     | 125               | 125           | 125     | 125               | 180                 | 120 | 8320G013       | 1           | 8320G045 ③           | 1           | 6.1F                                   | 10.6/F |
| 1/8  | 1/16              | 0.09           | 210                                   | 225     | 225               | 160           | 160     | 160               | 200                 | 150 | 8320G215       | 4           | 8320G224 ④           | 4           | 17.1/F                                 | 11.6/F |
| 1/8  | 3/32              | 0.12           | 100                                   | 100     | 100               | 100           | 100     | 100               | 180                 | 120 | 8320G015       | 1           | 8320G047 ③           | 1           | 6.1F                                   | 10.6/F |
| 1/8  | 3/32              | 0.12           | 150                                   | 150     | 150               | 115           | 115     | 115               | 200                 | 150 | 8320G216       | 4           | 8320G225 ④           | 4           | 10.1/F                                 | 11.6/F |
| 1/8  | 1/8               | 0.21           | 40                                    | 40      | 40                | 40            | 40      | 40                | 180                 | 120 | 8320G017       | 1           | 8320G049 ③           | 1           | 6.1F                                   | 10.6/F |
| 1/8  | 1/8               | 0.21           | 85                                    | 85      | 85                | 60            | 60      | 60                | 200                 | 150 | 8320G217       | 4           | 8320G226 ④           | 4           | 10.1/F                                 | 11.6/F |
| 1/4  | 1/16              | 0.09           | 210                                   | 225     | 225               | 160           | 160     | 160               | 200                 | 150 | 8320G182 ⑥     | 2           | 8320G231 ④           | 3           | 17.1/F                                 | 11.6/F |
| 1/4  | 3/32              | 0.12           | 150                                   | 150     | 150               | 115           | 115     | 115               | 200                 | 150 | 8320G184       | 2           | 8320G202 ③④⑥         | 3           | 10.1/F                                 | 11.6/F |
| 1/4  | 1/8               | 0.25           | 85                                    | 85      | 85                | 60            | 60      | 60                | 200                 | 150 | 8320G186       | 2           | 8320G203 ③④⑥         | 3           | 10.1/F                                 | 11.6/F |
| 1/4  | 11/64             | 0.35           | 45                                    | 45      | 45                | 25            | 25      | 25                | 200                 | 150 | 8320G188       | 2           | -                    | -           | 10.1/F                                 | 11.6/F |
| <b>NORMALLY OPEN (Open when de-energized)</b>  |                   |                |                                       |         |                   |               |         |                   |                     |     |                |             |                      |             |  |        |
| 1/8  | 3/64              | 0.06           | 200                                   | 200     | 200               | 200           | 200     | 200               | 180                 | 120 | 8320G136       | 1           | 8320G146 ③           | 1           | 6.1F                                   | 10.6/F |
| 1/8  | 1/16              | 0.09           | 150                                   | 125     | 125               | 125           | 125     | 125               | 180                 | 120 | 8320G027       | 1           | 8320G051 ③           | 1           | 6.1F                                   | 10.6/F |
| 1/8  | 1/16              | 0.09           | 235                                   | 250     | 250               | 160           | 160     | 160               | 200                 | 150 | 8320G218       | 4           | 8320G227 ④           | 4           | 17.1/F                                 | 11.6/F |
| 1/8  | 3/32              | 0.12           | 100                                   | 100     | 100               | 100           | 100     | 100               | 180                 | 120 | 8320G029       | 1           | 8320G053 ③           | 1           | 6.1F                                   | 10.6/F |
| 1/8  | 3/32              | 0.12           | 150                                   | 140     | 140               | 100           | 100     | 100               | 200                 | 150 | 8320G219       | 4           | 8320G228 ④           | 4           | 10.1/F                                 | 11.6/F |
| 1/8  | 1/8               | 0.21           | 40                                    | 40      | 40                | 40            | 40      | 40                | 180                 | 120 | 8320G031       | 1           | 8320G055 ③           | 1           | 6.1F                                   | 10.6/F |
| 1/8  | 1/8               | 0.21           | 70                                    | 70      | 70                | 55            | 55      | 55                | 200                 | 150 | 8320G220       | 4           | 8320G229 ④           | 4           | 10.1/F                                 | 11.6/F |
| 1/4  | 1/16              | 0.09           | 235                                   | 250     | 250               | 160           | 160     | 160               | 200                 | 150 | 8320G192 ⑥     | 2           | 8320G232 ④           | 3           | 17.1/F                                 | 11.6/F |
| 1/4  | 3/32              | 0.12           | 150                                   | 140     | 140               | 100           | 100     | 100               | 200                 | 150 | 8320G194       | 2           | 8320G204 ③④⑥         | 3           | 10.1/F                                 | 11.6/F |
| 1/4  | 1/8               | 0.25           | 70                                    | 70      | 70                | 55            | 55      | 55                | 200                 | 150 | 8320G196       | 2           | 8320G205 ③④          | 3           | 10.1/F                                 | 11.6/F |
| 1/4  | 11/64             | 0.35           | 40                                    | 40      | 40                | 30            | 30      | 30                | 200                 | 150 | 8320G198       | 2           | -                    | -           | 10.1/F                                 | 11.6/F |

① Supplied with cast UR disc.  
 ② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.  
 ③ Can be used for **dry** natural gas service with the EF prefix.  
 ④ Constructions standard rated -40°F (-40°C) ambient temperature. EFX prefix and TPL # not required.  
 ⑤ Water rating, CSA certified up to 232 psi.  
 ⑥ ATEX/IECEx certified with prefix "EV".

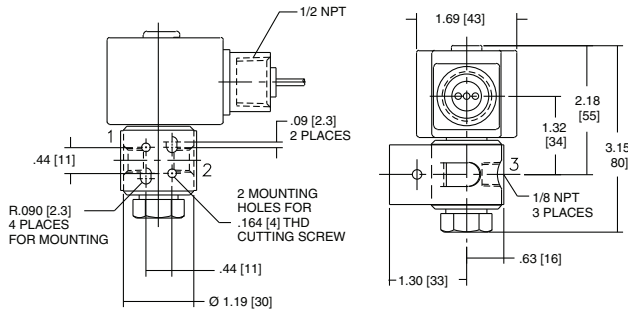
## Specifications (Metric units)

| Pipe Size (in)   | Orifice Size (mm) | Kv Flow Factor (m3/h) | Operating Pressure Differential (bar) |                    |                   |               |                    |                   | Max. Fluid Temp. °C |    | Brass Body            |             | Stainless Steel Body    |             | Watt Rating/ Class of Coil Insulation <sup>②</sup> |       |
|--|-------------------|-----------------------|---------------------------------------|--------------------|-------------------|---------------|--------------------|-------------------|---------------------|----|-----------------------|-------------|-------------------------|-------------|--|-------|
|  |                   |                       | Max. AC                               |                    |                   | Max. DC       |                    |                   | AC                  | DC | Catalog Number        | Const. Ref. | Catalog Number          | Const. Ref. | AC   | DC    |
|  |                   |                       | Air-Inert Gas                         | Water <sup>⑤</sup> | Lt. Oil @ 300 SSU | Air-Inert Gas | Water <sup>⑤</sup> | Lt. Oil @ 300 SSU |                     |    |                       |             |                         |             |  |       |
| <b>UNIVERSAL OPERATION (Pressure at any port)</b>  |                   |                       |                                       |                    |                   |               |                    |                   |                     |    |                       |             |                         |             |  |       |
| 1/8  | 1.2               | 0.05                  | 12                                    | 12                 | 12                | 9             | 9                  | 9                 | 60                  | 49 | 8320G130 <sup>①</sup> | 1           | 8320G140 <sup>①</sup>   | 1           | 9.1F   | 10.6F |
| 1/8  | 1.6               | 0.08                  | 7                                     | 7                  | 7                 | 4             | 4                  | 4                 | 82                  | 49 | 8320G001              | 1           | 8320G041 <sup>③</sup>   | 1           | 9.1F   | 10.6F |
| 1/8  | 1.6               | 0.08                  | 12                                    | 12                 | 12                | 9             | 9                  | 9                 | 93                  | 66 | 8320G212              | 4           | 8320G221 <sup>④⑥</sup>  | 4           | 17.1F  | 22.6F |
| 1/8  | 2.4               | 0.10                  | 3                                     | 3                  | 3                 | 3             | 3                  | 3                 | 82                  | 49 | 8320G083              | 1           | 8320G087 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 2.4               | 0.10                  | 7                                     | 7                  | 7                 | 4             | 4                  | 4                 | 93                  | 66 | 8320G213              | 4           | 8320G222 <sup>④</sup>   | 4           | 17.1F  | 11.6F |
| 1/8  | 3.2               | 0.18                  | 2                                     | 2                  | 2                 | 1             | 1                  | 1                 | 82                  | 49 | 8320G003              | 1           | 8320G043 <sup>③</sup>   | 1           | 9.1F   | 10.6F |
| 1/8  | 3.2               | 0.18                  | 3                                     | 3                  | 3                 | 2             | 2                  | 2                 | 93                  | 66 | 8320G214              | 4           | 8320G223 <sup>④</sup>   | 4           | 17.1F  | 11.6F |
| 1/4  | 1.6               | 0.08                  | 9                                     | 9                  | 9                 | 5             | 5                  | 5                 | 93                  | 66 | 8320G172              | 2           | -                       | -           | 10.1F  | 11.6F |
| 1/4  | 1.6               | 0.08                  | 12                                    | 12                 | 12                | 9             | 9                  | 9                 | 93                  | 66 | -                     | -           | 8320G230 <sup>④⑥</sup>  | 3           | 17.1F  | 22.6F |
| 1/4  | 2.4               | 0.10                  | 7                                     | 7                  | 7                 | 4             | 4                  | 4                 | 93                  | 66 | 8320G174              | 2           | 8320G200 <sup>③④⑥</sup> | 3           | 17.1F  | 11.6F |
| 1/4  | 3.2               | 0.21                  | 3                                     | 3                  | 3                 | 2             | 2                  | 2                 | 93                  | 66 | 8320G176 <sup>⑥</sup> | 2           | 8320G201 <sup>③④⑥</sup> | 3           | 17.1F  | 11.6F |
| 1/4  | 4.4               | 0.30                  | 1                                     | 1                  | 1                 | 1             | 1                  | 1                 | 93                  | 66 | 8320G178              | 2           | -                       | -           | 10.1F  | 11.6F |
| <b>NORMALLY CLOSED (Closed when de-energized) – PFD<sub>AVG</sub> = 6.81 x 10<sup>-4</sup></b> |                   |                       |                                       |                    |                   |               |                    |                   |                     |    |                       |             |                         |             |  |       |
| 1/8  | 1.2               | 0.05                  | 14                                    | 14                 | 14                | 14            | 14                 | 14                | 82                  | 49 | 8320G132              | 1           | 8320G142 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 1.6               | 0.08                  | 10                                    | 9                  | 9                 | 9             | 9                  | 9                 | 82                  | 49 | 8320G013              | 1           | 8320G045 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 1.6               | 0.08                  | 14                                    | 15                 | 15                | 11            | 11                 | 11                | 93                  | 66 | 8320G215              | 4           | 8320G224 <sup>④</sup>   | 4           | 17.1F  | 11.6F |
| 1/8  | 2.4               | 0.10                  | 7                                     | 7                  | 7                 | 7             | 7                  | 7                 | 82                  | 49 | 8320G015              | 1           | 8320G047 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 2.4               | 0.10                  | 10                                    | 10                 | 10                | 8             | 8                  | 8                 | 93                  | 66 | 8320G216              | 4           | 8320G225 <sup>④</sup>   | 4           | 10.1F  | 11.6F |
| 1/8  | 3.2               | 0.18                  | 3                                     | 3                  | 3                 | 3             | 3                  | 3                 | 82                  | 49 | 8320G017              | 1           | 8320G049 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 3.2               | 0.18                  | 6                                     | 6                  | 6                 | 4             | 4                  | 4                 | 93                  | 66 | 8320G217              | 4           | 8320G226 <sup>④</sup>   | 4           | 10.1F  | 11.6F |
| 1/4  | 1.6               | 0.08                  | 14                                    | 15                 | 15                | 11            | 11                 | 11                | 93                  | 66 | 8320G182 <sup>⑥</sup> | 2           | 8320G231 <sup>④</sup>   | 3           | 17.1F  | 11.6F |
| 1/4  | 2.4               | 0.10                  | 10                                    | 10                 | 10                | 8             | 8                  | 8                 | 93                  | 66 | 8320G184              | 2           | 8320G202 <sup>③④⑥</sup> | 3           | 10.1F  | 11.6F |
| 1/4  | 3.2               | 0.21                  | 6                                     | 6                  | 6                 | 4             | 4                  | 4                 | 93                  | 66 | 8320G186              | 2           | 8320G203 <sup>③④⑥</sup> | 3           | 10.1F  | 11.6F |
| 1/4  | 4.4               | 0.30                  | 3                                     | 3                  | 3                 | 2             | 2                  | 2                 | 93                  | 66 | 8320G188              | 2           | -                       | -           | 10.1F  | 11.6F |
| <b>NORMALLY OPEN (Open when de-energized)</b>  |                   |                       |                                       |                    |                   |               |                    |                   |                     |    |                       |             |                         |             |  |       |
| 1/8  | 1.2               | 0.05                  | 14                                    | 14                 | 14                | 14            | 14                 | 14                | 82                  | 49 | 8320G136              | 1           | 8320G146 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 1.6               | 0.08                  | 10                                    | 9                  | 9                 | 9             | 9                  | 9                 | 82                  | 49 | 8320G027              | 1           | 8320G051 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 1.6               | 0.08                  | 16                                    | 17                 | 17                | 11            | 11                 | 11                | 93                  | 66 | 8320G218              | 4           | 8320G227 <sup>④</sup>   | 4           | 17.1F  | 11.6F |
| 1/8  | 2.4               | 0.10                  | 7                                     | 7                  | 7                 | 7             | 7                  | 7                 | 82                  | 49 | 8320G029              | 1           | 8320G053 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 2.4               | 0.10                  | 10                                    | 10                 | 10                | 7             | 7                  | 7                 | 93                  | 66 | 8320G219              | 4           | 8320G228 <sup>④</sup>   | 4           | 10.1F  | 11.6F |
| 1/8  | 3.2               | 0.18                  | 3                                     | 3                  | 3                 | 3             | 3                  | 3                 | 82                  | 49 | 8320G031              | 1           | 8320G055 <sup>③</sup>   | 1           | 6.1F   | 10.6F |
| 1/8  | 3.2               | 0.18                  | 5                                     | 5                  | 5                 | 4             | 4                  | 4                 | 93                  | 66 | 8320G220              | 4           | 8320G229 <sup>④</sup>   | 4           | 10.1F  | 11.6F |
| 1/4  | 1.6               | 0.08                  | 16                                    | 17                 | 17                | 11            | 11                 | 11                | 93                  | 66 | 8320G192 <sup>⑥</sup> | 2           | 8320G232 <sup>④</sup>   | 3           | 17.1F  | 11.6F |
| 1/4  | 2.4               | 0.10                  | 10                                    | 10                 | 10                | 7             | 7                  | 7                 | 93                  | 66 | 8320G194              | 2           | 8320G204 <sup>③④⑥</sup> | 3           | 10.1F  | 11.6F |
| 1/4  | 3.2               | 0.21                  | 5                                     | 5                  | 5                 | 4             | 4                  | 4                 | 93                  | 66 | 8320G196              | 2           | 8320G205 <sup>③④</sup>  | 3           | 10.1F  | 11.6F |
| 1/4  | 4.4               | 0.30                  | 3                                     | 3                  | 3                 | 2             | 2                  | 2                 | 93                  | 66 | 8320G198              | 2           | -                       | -           | 10.1F  | 11.6F |

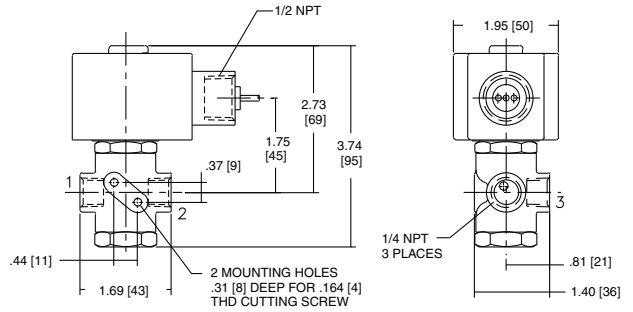
<sup>①</sup> Supplied with cast UR disc.  
<sup>②</sup> On 50 hertz service, the watt rating for the 6.1F solenoid is 8.1 watts; the watt rating for the 9.1F solenoid is 11.1 watts.  
<sup>③</sup> Can be used for **dry** natural gas service with the EF prefix.  
<sup>④</sup> Constructions standard rated -40°F (-40°C) ambient temperature. EFX prefix and TPL # not required.  
<sup>⑤</sup> Water rating, CSA certified up to 16 bar.  
<sup>⑥</sup> ATEX/IECEx certified with prefix "EV".

**Dimensions: inches (mm)**

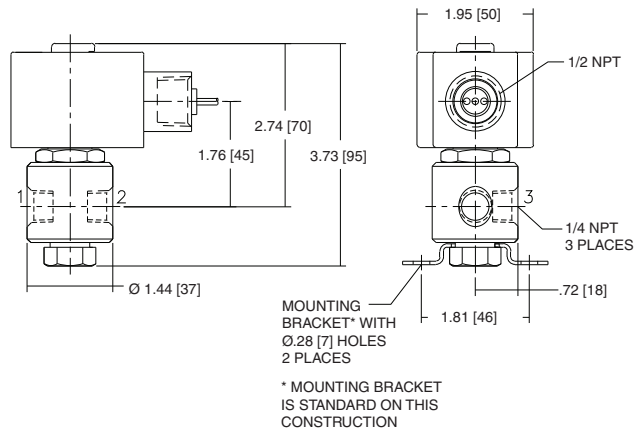
**Const. Ref. 1**



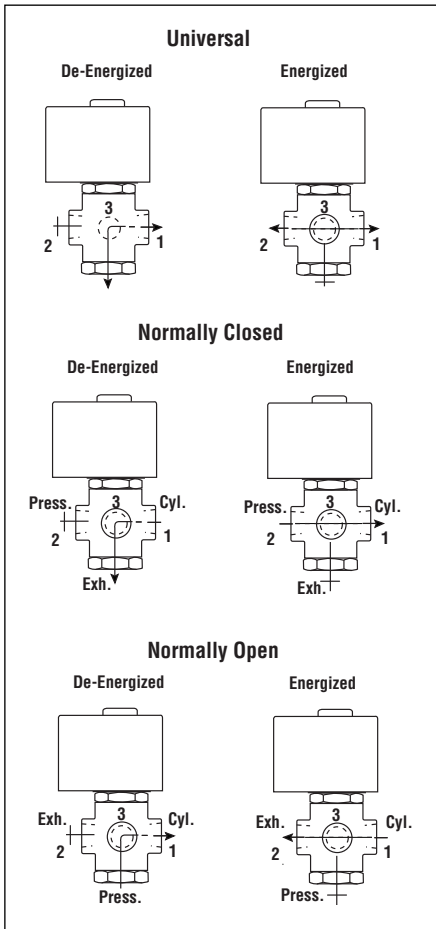
**Const. Ref. 2**



**Const. Ref. 3**



**FLOW DIAGRAMS**



**Const. Ref. 4**

