

Low flow valve 7242

1/4", 1/2", PN320

Valve for small and very small flow rates with electric actuator for shutting off and controlling liquids and gases for industrial applications

- Small and very small Cvs values
- High differential pressures up to 4641 psi
- Metallic sealing seat assembly made of stainless steel or carbide
- Metallic body seal
- Self-adaptation
- Actuators for open/close or control operation
- Available with safety position



Technical data valve

| | | |
|-------------------|---|---------------------|
| Size | 1/4", 1/2" | |
| Connection | Pipe thread acc. ISO 228-1 NPT thread acc. ANSI B1.20.1 Socket Weld | |
| Nominal pressure | PN 320 | |
| Fluid temperature | Standard version | -4°F up to +410°F |
| | Low-temperature version 1 | -40°F up to +320°F |
| | Low-temperature version 2 | -148°F up to +410°F |
| Leakage | ANSI Class IV | |

Technical data actuator

| Function | Control | | | | On/Off | |
|-----------------------------|--|--------------|-------------------|--------------|--|--------------|
| | CA24C | CA260C | CA24C-R | CA260C-R | CA24 | CA260 |
| Motor type | 24 V AC/DC | 100-240 V AC | 24 V AC/DC | 100-240 V AC | 24 V AC/DC | 100-240 V AC |
| Mains connection | 24 V AC/DC | 100-240 V AC | 24 V AC/DC | 100-240 V AC | 24 V AC/DC | 100-240 V AC |
| Set point range | (0)2-10 V / (0)4-20 mA | | | | 3-point** | |
| Mains frequency | 50/60 Hz | | | | 50/60 Hz | |
| Feedback | (0)2-10 V / (0)4-20 mA | | | | optional | |
| Dead band | ±0.6 % of the entire stroke | | | | - | |
| Repeatability | ±0.3 % of the entire stroke | | | | - | |
| Limit switch | 2 | | | | optional | |
| Potentiometer feedback | - | | | | optional | |
| Max. switching capacity | 24 V AC/DC 200 mA | | | | 250 V AC/DC 1 A | |
| Actuating speed | 38.1 / 50.8 / 76.2 s/inch (Standard: 50.8 s/inch) | | | | 50.8 or 76.2 s/inch (Standard: 76.2 s/inch) | |
| Safety functions | Monitoring of tensile force, set point, temperature of the electronics, etc. | | | | Tensile force monitoring | |
| Diagnostic functions | Storage of motor and total operating time, temperature and directional classes, etc. | | | | - | |
| Fail Safe position | - | - | freely adjustable | | - | |
| Load | 500 Ω for current set point / 95 kΩ for voltage set point | | | | - | |
| Max. power consumption | 13 W | 12 W | 13 W | 12 W | 13 W | 12 W |
| Input heating resistor | 10 W | | | | | |
| Starting current | 6 A | 2.5 A | 6 A | 2.5 A | 6 A | 2.5 A |
| Actuating power | 180 lbf | | | | | |
| Protection class (EN 60529) | IP 65*** | | | | | |
| Adm. Ambient temperature | 14 °F to +140 °F | | | | | |
| Duty cycle | 100 % | | | | | |

* for control with volt-signal split range adjustments are possible

** Minimum on-time 200 ms

*** Dustproof, protected against water jets from any angle

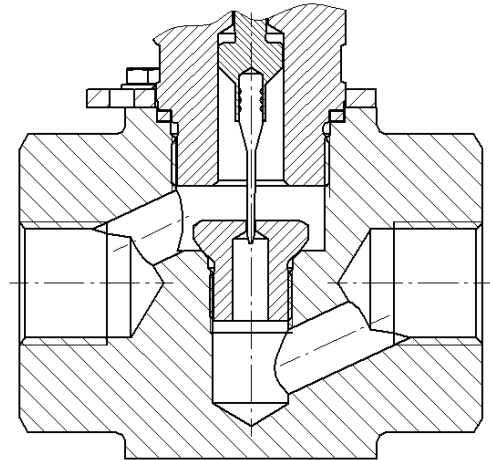
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Materials

| | | |
|-------------------|--|-----------|
| Body | 1.4404 (316L) | |
| Head section | 1.4404 (316L) | |
| Head section seal | 1.4404 (316L) | |
| Actuating stem | 1.4571 316Ti | |
| Packing | PTFE and PEEK Compound | |
| Needle | 1.4404 (316L) | Hardmetal |
| Seat | 1.4404 (316L) | Hardmetal |
| Actuator cover | Painted aluminium | |
| Actuator console | Anodized aluminium (optionally KTL coated) | |

CVS-values

| Characteristic: linear | | | |
|------------------------|--------------|-------|--------------|
| 1/4" | | 1/2" | |
| CVS | rangeability | CVS | rangeability |
| 0.2 | 30:1 | 1.5 | 30:1 |
| 0.13 | 30:1 | 1.2 | 30:1 |
| 0.079 | 30:1 | 0.79 | 30:1 |
| 0.05 | 30:1 | 0.5 | 30:1 |
| 0.031 | 30:1 | 0.31 | 30:1 |
| 0.02 | 30:1 | 0.2 | 30:1 |
| 0.013 | 25:1 | 0.13 | 30:1 |
| 0.008 | 25:1 | 0.079 | 30:1 |
| 0.005 | 25:1 | 0.05 | 30:1 |
| 0.003 | 25:1 | 0.031 | 30:1 |
| | | 0.02 | 30:1 |
| | | 0.013 | 25:1 |
| | | 0.008 | 25:1 |
| | | 0.005 | 25:1 |
| | | 0.003 | 25:1 |



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Admissible pressures

1/4" - p1 as a function of p2

| p1 [psi] | CVS values | Seat relief | p2 [psi] | | | | | | | | | |
|----------|------------|-------------|----------|------|------|------|------|------|------|------|------|------|
| | | | 0 | 290 | 725 | 1450 | 2176 | 2901 | 3626 | 4351 | 4641 | |
| p1 [psi] | 0.05-0.20 | 61.82 lbf | 2567 | 2451 | 2306 | 2031 | | | | | | |
| | | 116.90 lbf | 4641 | 4641 | 4641 | 4641 | 4641 | 4641 | 4641 | 4641 | 4641 | 4641 |
| | 0.0-0.03 | 61.82 lbf | 4641 | 4641 | 4641 | 4395 | | | | | | |
| | | 39.34 lbf | 4279 | 2988 | 1059 | | | | | | | |

1/2" - p1 as a function of p2

| p1 [psi] | CVS values | Seat relief | p2 [psi] | | | | | | | | | |
|----------|-------------|-------------|----------|------|------|------|------|------|------|------|------|--|
| | | | 0 | 290 | 725 | 1450 | 2176 | 2901 | 3626 | 4351 | 4641 | |
| p1 [psi] | 1.16 - 1.51 | 179.85 lbf | 1885 | 1885 | 1885 | 1885 | | | | | | |
| | 0.31 - 0.79 | 179.85 lbf | 4641 | 4627 | 4540 | 4380 | 4235 | 4076 | 3931 | | | |
| | | 116.90 lbf | 2292 | 2234 | 2147 | 1987 | | | | | | |
| | 0.05 - 0.20 | 116.90 lbf | 4641 | 4641 | 4641 | 3162 | | | | | | |
| | | 61.82 lbf | 2567 | 1871 | 856 | | | | | | | |
| | 0.00 - 0.03 | 61.82 lbf | 4641 | 4641 | 1827 | | | | | | | |
| | | 39.34 lbf | 4279 | 667 | | | | | | | | |

Operating limits

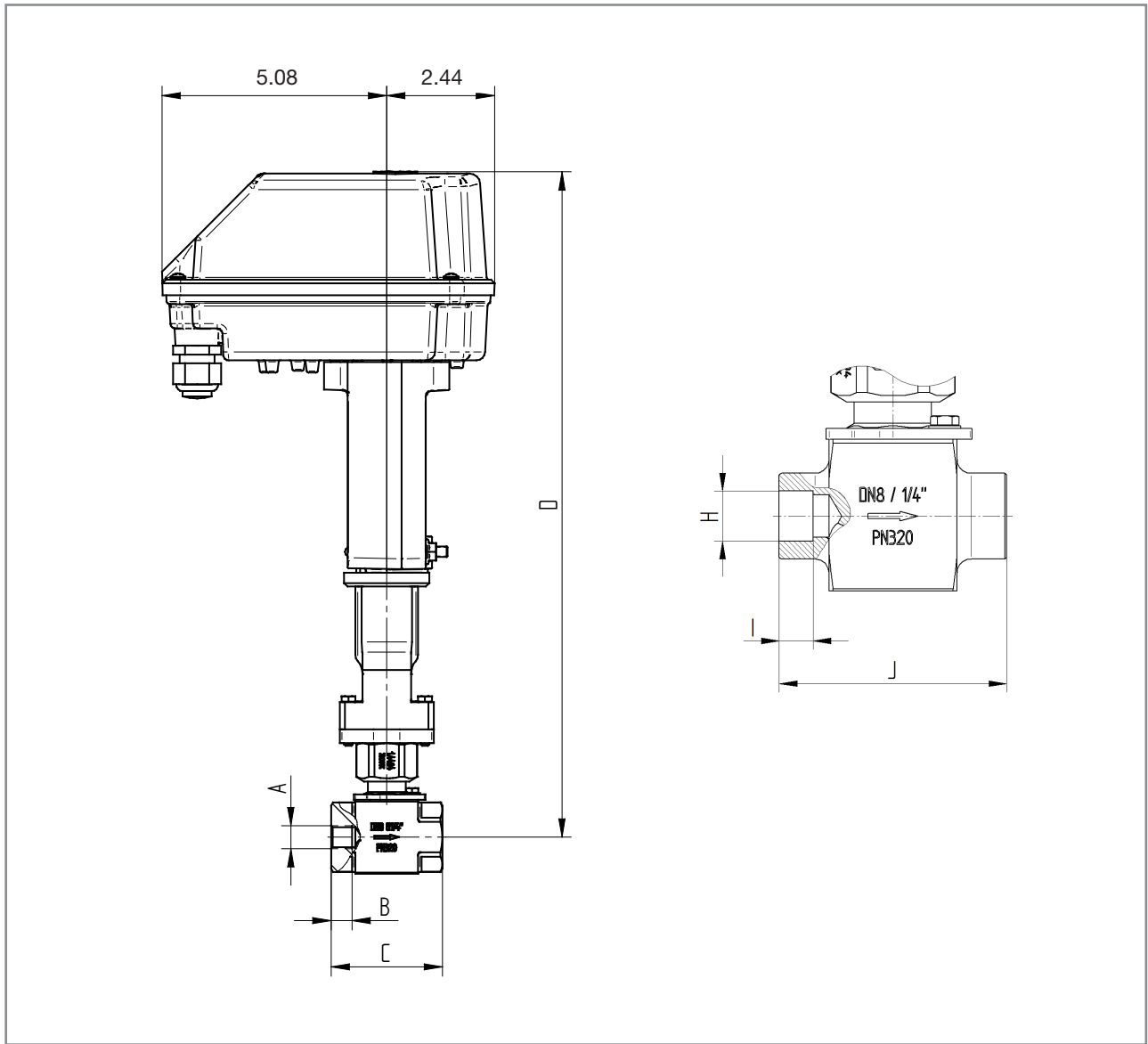
| Material trim | | Temperature | max. differential pressure [psi] | |
|---------------|-----------|-------------|----------------------------------|------|
| Needle | Seat | | Liquid | Gas |
| 316L | 316L | T ≤ 210°F | 1450 | 4600 |
| | | T > 210°F | 580 | 2300 |
| Hardmetal | Hardmetal | - | 2900 | 4600 |

Pressure-temperature rating

| Standard version | |
|------------------|----------|
| T [°F] | PS [psi] |
| -75 up to +250 | 4640 |
| 302 | 4360 |
| 392 | 3970 |
| 410 | 3915 |

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Dimensions and weights



| Size | G-thread connection | | NPT-thread connection | | C | Standard | | Stroke |
|------|---------------------|------|-----------------------|------|------|----------|--------------|--------|
| | A | B | A | B | | D | Weight [lbs] | |
| 1/4" | G 1/4" | 0.47 | NPT 1/4" | 0.39 | 2.52 | 15.04 | 0.16 | 0.47 |
| 1/2" | G 1/2" | 0.59 | NPT 1/2" | 0.55 | 3.11 | 15.31 | 0.19 | 0.47 |

Dimensions en inch

| Size | Socket weld connection | | J |
|------|------------------------|------|------|
| | H | I | |
| 1/4" | 0.55 | 0.38 | 2.52 |
| 1/2" | 0.85 | 0.5 | 3.11 |

Dimensions in inch