## 2/2- 3/2-Way; NPT 1/4, Universal Function




## Advantages / Benefits

- **Universal function**
- **Separating diaphragm isolates solenoid system from operating fluid**
- **Long service life, even in non-lube conditions**
- **Insensitive to contaminated fluids**
- **Specific clean and testing available**
- **Lockable manual override standard**
- **With electrical feedback signaller (optional)**
- **On request: explosion proof-, impulse-, vacuum- or low power versions**

## Design/Function

The direct-acting 2- way and 3-way solenoid valve has a flipper as the switching method.

This unique valve hermetically isolates the actuator from the fluid. Making it less sensitive to contaminated fluids than a plunger-type system and provides a long service life, even in unlubricated applications.

The valve is available with several circuit functions. When the valve is energized the armature is pulled against a spring.

The solenoid epoxy encapsulation efficiently dissipates the heat generated by the fluid.

- Direct-acting
- Body materials: stainless steel
- Fast-acting
- Insensitive to abrasive, slightly contaminated fluids

## Applications

Neutral gases and liquids

Aggressive fluids

Demineralized water

Vacuum

Unlubricated compressed air

Water and gas analysis

Dryer systems

Pharmaceutical industry

Food processing

Steam traps

Pilot valve for process valves

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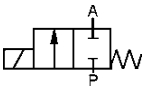
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bürkert *Easy* Fluid Control Solutions

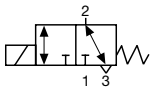
## Technical Data

### Circuit Function

**A-** 2/2-way valve, normally closed




**T-** 3/2-way valve, direct acting, universal function, any flow direction




## Operating Data (Valve)

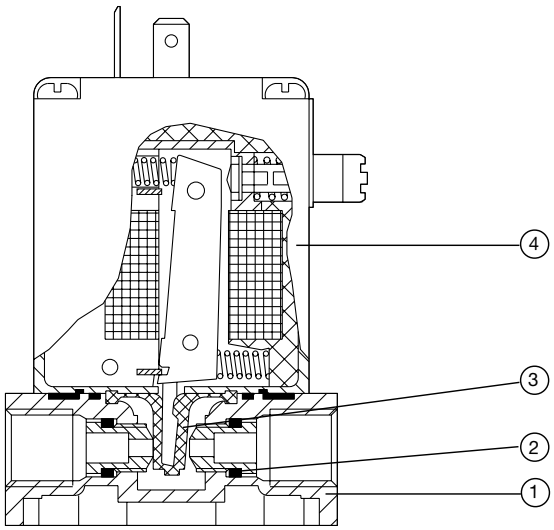
| | |
|---|---|
| Pressure range max. | 232 PSI (see specifications) |
| Port connection | Threaded port NPT 1/4" |
| Orifice | 5/64" to 5/32" |
| | Sub-base (on request) |
| Body material | 316L Stainless steel |
| Seal material | FPM (Viton), EPDM |
| Fluids | EPDM: Alkalis, acids up to a medium concentration, alkaline washing and bleaching lyes. FPM: Oxydizing acids, salt solutions, exhaust gas |
| Fluid temperature | -22°F to 194°F (EPDM) -10°F to 176°F (FPM) |
| Ambient temperature | max. 131°F |
| Max. viscosity | approx. 37 mm²/s |
| Response Times | |

| Circuit Function | Opening [ms] AC | Opening [ms] DC | Closing [ms] AC | Closing [ms] DC |
|---|---|---|---|---|
| A and T | 8 - 15 | 10 - 20 | 8 - 15 | 10 - 20 |

## Operating Data (Actuator)

| | |
|---|---|
| Operating voltages | AC: 110, 230 V/50 Hz, DC: 24 V |
| Voltage tolerance | ±10% |
| Power consumption | AC 30 VA (inrush) 15 VA / 8 W (hold) DC 8 W 5 W (on request) |
| Duty cycle | 100% continuous rated |
| Cycling rate | approx 1000 c.p.m. |
| Protection class | NEMA 4 (IP65) with cable plug Type 2508 |
| Electrical connection | cable plug Type 2508 (DIN 43650, form A) for 7 mm ø cable (supplied as standard) |
| Installation | as required |

## Materials




| | | |
|---|---|---|
| 1 | Valve body: | 316L Stainless Steel |
| 2 | O-Rings: | FPM (Viton), EPDM |
| 3 | Isolating diaphragm: | FPM (Viton), EPDM |
| 4 | Coil: | Epoxy |

## Ordering Chart for Standard Versions (Other Versions on Request)

| Circuit Functions | Orifice | $C_v$[1] | Port Connection [NPT] | Pressure Range [PSI] | Body Material | Seal Material | Voltage[2] | Electrical Classifications[3] | Item Number |
|---|---|---|---|---|---|---|---|---|---|
| A | 1/8" | .27 | 1/4" | 0-145 | Stainless Steel | EPDM | 24 DC | — | 454 768 J |
| | 1/8" | .27 | 1/4" | 0-145 | Stainless Steel | EPDM | 120/60 | — | US 01957 |
| | 1/8" | .27 | 1/4" | 0-145 | Stainless Steel | EPDM | 120/60 | UL/FM | US 03207 |
| | 1/8" | .27 | 1/4" | 0-145 | Stainless Steel | FPM | 120/60 | — | 454 676 E |
| | 1/8" | .27 | 1/4" | 0-145 | Brass | FPM | 120/60 | UL/FM | US 04159 |
| | 5/32" | .33 | 1/4" | 0-70 | Stainless Steel | FPM | 24 DC | — | US 03936 |
| C | 5/64" | .13 | 1/4" | 0-170 | Brass | FPM | 120/60 | UL/FM | 453 226 S |
| | 5/64" | .13 | 1/4" | 0-170 | Brass | FPM | 120/60 | Haz-Ex | 455 111 R |
| | 1/8" | .27 | 1/4" | 0-145 | Brass | FPM | 24 DC | UL/FM | 453 020 T |
| | 1/8" | .27 | 1/4" | 0-145 | Brass | FPM | 24 DC | Haz-Ex | 453 302 H |
| | 1/8" | .27 | 1/4" | 0-145 | Brass | FPM | 24/60 | UL/FM | 453 019 W |
| | 1/8" | .27 | 1/4" | 0-145 | Brass | FPM | 24/60 | Haz-Ex | US 02961 |
| | 1/8" | .27 | 1/4" | 0-145 | Brass | FPM | 120/60 | UL/FM | 453 018V |
| | 1/8" | .27 | 1/4" | 0-145 | Brass | FPM | 120/60 | Haz-Ex | 455 303 A |
| | 1/8" | .27 | 1/4" | 0-145 | Stainless Steel | FPM | 120/60 | UL/FM | 453 232 Y |
| | 1/8" | .27 | 1/4" | 0-145 | Stainless Steel | FPM | 120/60 | Haz-Ex | 455 304 B |
| | 5/32" | .33 | 1/4" | 0-70 | Brass | FPM | 24 DC | UL/FM | 453 235 T |
| | 5/32" | .33 | 1/4" | 0-70 | Brass | FPM | 24 DC | Haz-Ex | 455 305 C |
| | 5/32" | .33 | 1/4" | 0-70 | Brass | FPM | 120/60 | UL/FM | 452 863 Y |
| | 5/32" | .33 | 1/4" | 0-70 | Brass | FPM | 120/60 | Haz-Ex | US 03705 |
| T | 5/64" | .13 | 1/4" | 0-170 | Brass | FPM | 24 DC | UL/FM | 454 762 C |
| | 5/64" | .13 | 1/4" | 0-170 | Brass | FPM | 120/60 | UL/FM | 454 490 Z |
| | 5/64" | .13 | 1/4" | 0-170 | Brass | FPM | 120/56 | Haz-Ex | US 03253 |
| | 5/64" | .13 | 1/4" | 0-170 | Stainless Steel | FPM | 24 DC | UL/FM | US 03365 |
| | 5/64" | .13 | 1/4" | 0-170 | Stainless Steel | FPM | 120/60 | UL/FM | 454 126 P |
| | 5/64" | .13 | 1/4" | 0-170 | Stainless Steel | FPM | 120/56 | Haz-Ex | US 02822 |
| | 1/8" | .27 | 1/4" | 0-85 | Brass | FPM | 24 DC | UL/FM | 453 026 M |
| | 1/8" | .27 | 1/4" | 0-85 | Brass | FPM | 120/60 | UL/FM | 453 024 K |
| | 1/8" | .27 | 1/4" | 0-85 | Stainless Steel | FPM | 24 DC | UL/FM | US 03061 |
| | 1/8" | .27 | 1/4" | 0-85 | Stainless Steel | FPM | 120/60 | UL/FM | 453 558 F |
| | 5/32" | .33 | 1/4" | 0-58 | Brass | FPM | 24 DC | UL/FM | 455 055 U |
| | 5/32" | .33 | 1/4" | 0-58 | Brass | FPM | 120/60 | UL/FM | US 03075 |
| | 5/32" | .33 | 1/4" | 0-58 | Brass | FPM | 120/56 | Haz-Ex | 455 114 L |
| | 5/32" | .33 | 1/4" | 0-58 | Stainless Steel | FPM | — | — | — |
| | 5/32" | .33 | 1/4" | 0-58 | Stainless Steel | FPM | 120/60 | UL/FM | 453 634 T |
| | 5/32" | .33 | 1/4" | 0-58 | Stainless Steel | FPM | 120/56 | Haz-Ex | 455 115 M |

**Notes:**

1) $C_v$ reduced 20% with DC current operation.

2) 120/56 suitable for 50Hz or 60 Hz power.

3) • U.L. is a U.L. listed valve per U.L. Standard Groups a, B, C, and D.
   • FM is FM approved for Haz Location, CL I Div 2, Groups A, B, C, and D.
   • Valve comes with electrical plug if no electrical class is given.

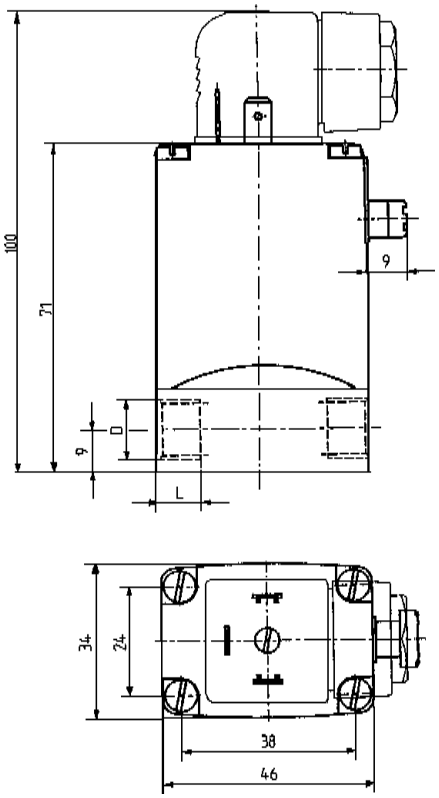
4) Vacuum versions available on request.

## Options

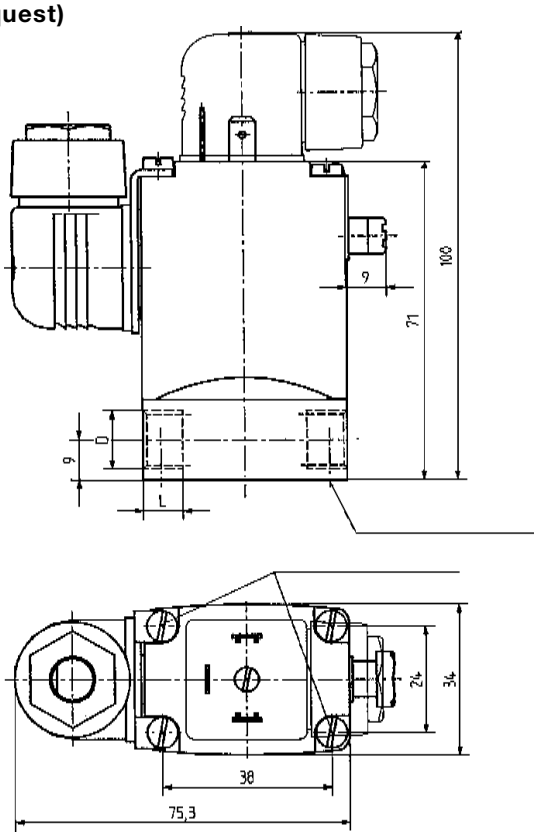
- Diagnosis: Electrical feedback signaller
- Impulse coil
- Specific clean and testing
- Vacuum version
- Brass valve body
- Sub-base version Type 331
- Explosion-proof version

## Dimensions [mm] 2/2-Way

**Standard Version**

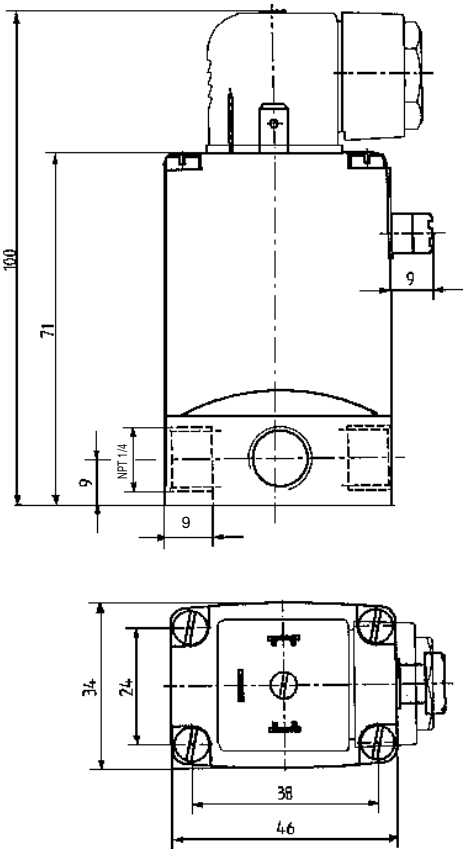



**Valve with Electrical Feedback Signaller Type 1060 (on request)**

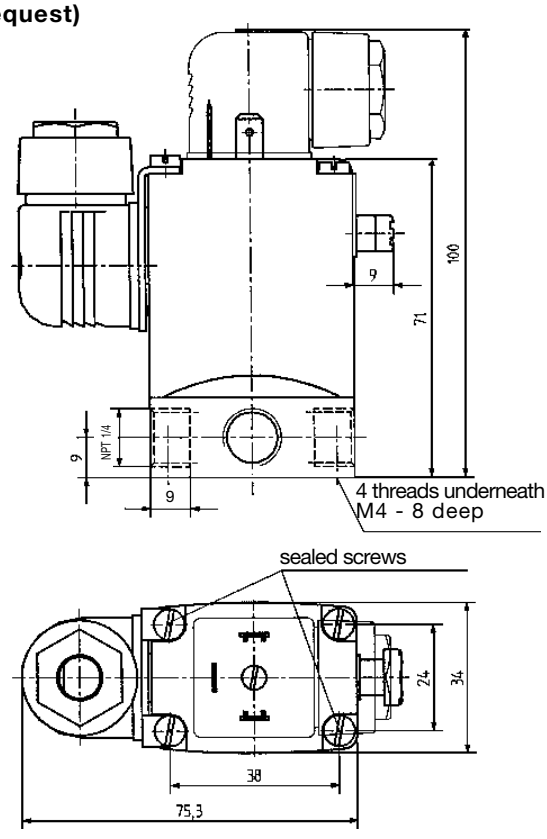



## Dimensions [mm] 3/2-Way

**Standard Version**




**Valve with Electrical Feedback Signaller Type 1060 (on request)**




In case of special requirements, please consult for advice.

We reserve the right to make technical changes without notice.
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