

2/2-Way; Direct-Acting; 1/8" NPT; 0-85 PSI



Advantages / Benefits

- ▶ Optimization of process and product quality through continuous control
- ▶ Increase of efficiency
- ▶ Extremely high control accuracy:
 - low hysteresis
 - high repeatability
 - high responsiveness
- ▶ Excellent rangeability
- ▶ Fail safe: Self-closing in case of power failure
- ▶ Easy LINK: Quick and easy connection to Burkert sensors for complete fluid control systems.
- ▶ Brass or stainless steel body
- ▶ CE

Design / Function

The Type 6021 is a direct-acting mini-solenoid proportional control valve for C_v values up to .06 with a near linear characteristic curve. Control deviations, hysteresis and repeatability are maintained within close tolerances, while exhibiting excellent responsiveness.

The mini-solenoid control valve consists of the basic valve, cable plug and the electronic control unit. For this mini-sized valve, the electronic control unit must be remotely mounted from the valve itself. A standard DIN-rail mounting configuration is supplied for this purpose.

A higher frequency pulse-width-modulation insures a continuous cross sectional flow opening of the valve proportional to the input control signal. This guarantees a superior control accuracy.

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- Adjustable ramp function from 0-10s cushions setpoint jumps
- Standard input signals 4-20 mA, 0-10V
- Monitor signal to assist set-up and indicator of coil current
- Tight shut-off due to zero-point suppression
- Compensation for coil heating
- Adjustable zero and span settings
- Simple ordering procedure with one order number for valve and control electronics

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Applications

Fluids

- Neutral gases and liquids
- Slightly aggressive liquids

Applications

- Analytical instruments
- Oxy-acetylene cutters
- Pressure control of gases in medical technology
- Medical equipment for speed control, water supply and artificial respiration
- Pharmaceutical and cosmetic industry
- Control of temperature, vacuum, humidity and combustion

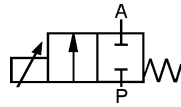


General Purpose

Technical Data

Valve Function

A – 2/2-way flow valve, normally closed, direct-acting



Function of Control Electronics

- Temperature compensation for coil heating by internal current control
- Ramp function to dampen fast status changes
- Simple zero and span settings by means of two potentiometers.
- Monitor function with LED display

Operational Data (Process)

| | |
|--------------------------|-----------------------------------|
| Pressure range | 0 - 85 PSI, technical vacuum |
| Port connection | 1/8" NPT |
| Body material | Brass or Stainless Steel |
| Sealing material | FPM (Viton) |
| Medium | Neutral gases and liquids |
| Temp. range of medium | 14°F to 194°F |
| Max. ambient temperature | 131°F |
| Maximum Viscosity | 21 cSt |
| Installation position | Any, no limitation on function |

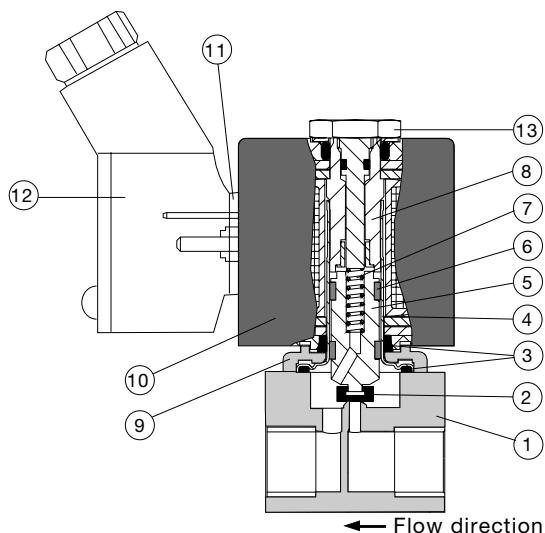
Operational Data for Control Electronics

| | |
|--------------------------|--|
| Design version H | DIN-rail mounting version |
| Operational voltage | 24 VDC, (max. 28 VDC) |
| Ripple | ±10% (We recommend Burkert power supply Type 1610) |
| Input signal | 4-20 mA, 0-10 V (0 - 20 mA on request) |
| Control signal for valve | PWM (Pulse Width Modul.) |
| Max. current consumption | 1.1 A |
| Power | Max. 0.5 W |
| Monitoring signal | Directly proportional to coil current 1 mV = 1 mA as set-up aid, or for external display. |
| Ramp time | 0 - 10 s (adjustable) |
| Protection class | NEMA 4 (IP 65) |
| Electrical connection | Suitable for Type 2506 cable plug |

Operational Data (Solenoid)

| | |
|---|-------------------------|
| Operational voltage | 24 VDC |
| Nominal power | See characteristics |
| Duty cycle | 100% continuously rated |
| Protection class with cable plug Type 2506 | NEMA 4 (IP 65) |

Materials



| | |
|------------------------|----------------------------|
| 1 Valve body: | Brass, 303 Stainless Steel |
| 2 Plunger seal: | FPM (Viton) |
| 3 O-rings: | FPM (Viton) |
| 4 Armature guide tube: | 305 Stainless Steel |
| 5 Plunger: | 430F Stainless Steel |
| 6 Slip-rings: | PTFE-Compound |
| 7 Spring: | 301 Stainless Steel |
| 8 Stopper: | 430F Stainless Steel |
| 9 Flange: | Cadmium Plated |
| 10 Coil: | PA (Polyamid) |
| 11 Flat-seal: | NBR |
| 12 Cable plug: | PA (Polyamid) |
| 13 Locknut: | Zinc Plated |

General Purpose

Characteristic Values with Ordering Information (Other Versions on Request)

Brass or Stainless Steel Body; Sealing FPM (Viton)

(With cable plug Type 2506)

| Port Connection [inch] | Orifice [inch] | Body Material | Pressure Range [PSI] | Power Consumption [W] | Maximum Coil Current [mA] | Weight [lbs.] | Item No. | | |
|---------------------------|-------------------|-----------------|-------------------------|--------------------------|------------------------------|------------------|------------------|------------|----------------------|
| | | | | | | | Controller Only* | Valve Only | Valve and Controller |
| 1/8 NPT | 1/16 | Brass | 0 - 85 | 4 | 165 | .3 | 060 657 P | 456 969 E | 702 622 H |
| 1/8 NPT | 1/16 | Stainless Steel | 0 - 85 | 4 | 165 | .3 | 060 657 P | 458 401 G | 704 245 R |

*Controller suitable for 4-20 mA or 0-10V signal

Regulation Data - Characteristics

| | |
|--------------------|-------------|
| Characteristic | See diagram |
| Hysteresis | < 5% |
| Repeatability | < 0.5% F.S. |
| Responsiveness | < 0.5% F.S. |
| Setting time (90%) | < 20 ms |
| Turn down ratio | 1:10 |

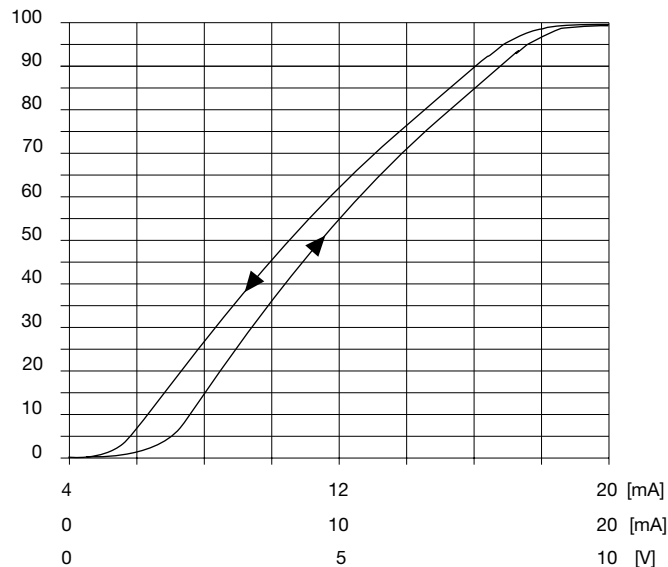
Advice for Selection of Valve Sizing

In continuous flow applications, the choice of the appropriate valve size is much more important than with ON/OFF valves. The optimum valve size should be selected such that the resulting flow in the system is not unnecessarily reduced by the valve. However, a sufficient part of the pressure drop should be taken across the valve, even when it is fully opened.

Recommended value: $\Delta p_{\text{valve}} > 30\%$ of total Δp within the system

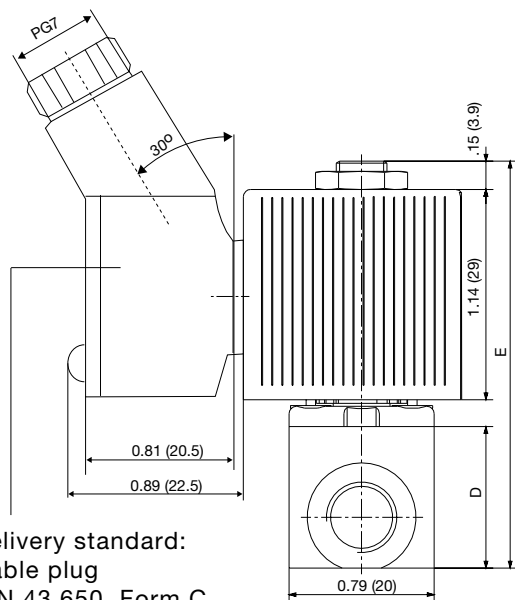
Contact Burkert should you require assistance with valve sizing or valve selection.

% of Maximum C_v

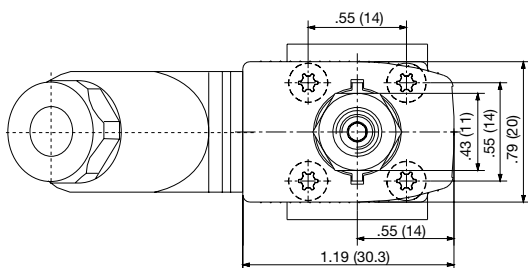
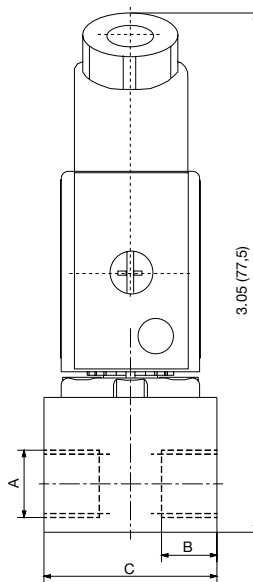


General Purpose

Dimensions [inch (mm)]



Delivery standard:
Cable plug
DIN 43 650, Form C.



| Port Connection | Orifice [Inch] | | | | | |
|-----------------|----------------|------|-----|-----|-----|------|
| | | A | B | C | D | E |
| 1/8" NPT | 1/16 | 1/8" | .28 | .99 | .77 | 2.21 |

Delivery standard:
Control electronic
DIN-rail mounting
(design version H).

