

2/2-way; direct-acting; G 1/4"- G 3/8"; PN 0-8 bar



Advantages / Benefits

- ▶ Optimization of process and product quality through continuous regulation
- ▶ Increase of efficiency
- ▶ Extremely high control accuracy:
 - low hysteresis
 - high repeatability
 - high responsivity
- ▶ Fail safe (self-closing in case of power failure)
- ▶ A complete control system "all from one" with Burkert sensors and controllers
- ▶ Brass or Stainless Steel body

Design / Function

Type 6022 and Type 6023 are direct-acting solenoid control valves for K_{Vs} flow rates from 0.1 to 0.7 m³/h. The proportional characteristic curve is practically linear. Regulation deviations (hysteresis, repeatability) keep in between small tolerance limits. The responsivity is particularly high. The solenoid control valve system consists of the basic components armature, push-over coil and the electronic plug-on control unit. It can be mounted in any position. The electronic control unit is integrated into the DIN 43 650 A plug, but can also be supplied as a standard DIN-rail mounting version.

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

Applications

Fluids

- Neutral gases and liquids
- Slightly aggressive liquids

Applications

- Water treatment
- Printing and paper machines
- Bottling plants
- Analytical appliances
- Combustion of natural gas
- Decontamination facilities
- Mechanical engineering
- Autoclave producers
- Chemical process engineering
- Control of temperature, vacuum, humidity and combustion



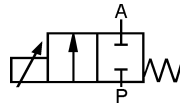
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Technical data

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 adaptation of the start of opening and of the reaching of maximum flow rate to the pressure conditions of the respective application by means of two potentiometers.
- Monitor function with LED display

Operational data (Armature)

Pressure range	0 - 8 bar, techn. vacuum
Port connection	G 1/4", G 3/8" (see characteristics)
Body material	Brass or Stainless Steel
Sealing material	FPM (Viton)
Medium	
Brass body	Neutral gases and liquids
SS body	Slightly aggressive liquids
Temperat. range of medium	-10 ... +90°C
Max. ambient temperature	+55°C
Max. Viscosity	21 cSt
Installation position	Any, no limitation on function

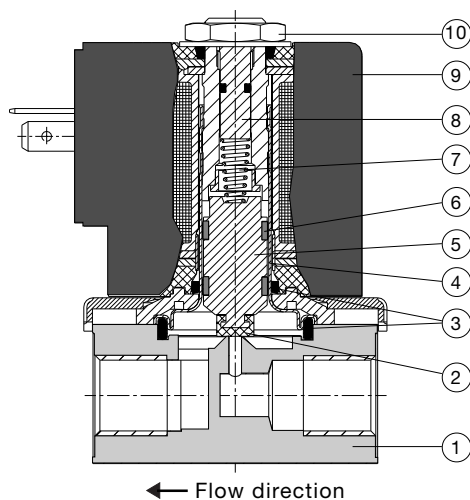
Operational data for Control Electronics

Design version M	Plug-on module
Design version H	DIN-rail mounting version (on request)
Operational voltage	DC 24 V/±, (max. 28V/±)
Ripple	±10% (We recommend our power supply type 1610)
Input signal	4-20 mA, 0-10V (0 - 20mA on request)
Control signal for valve	PWM (Pulse Width Modul.)
Max. current consumption	1.1A
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	IP65 (when mounted on valve, version M)
Electrical connection	Screw terminals for ø7 mm cable

Operational data (Solenoid)

Operational voltage	DC 24 V/±
Nominal power	See characteristics
Duty cycle	100% continuously rated
Protection class with mounted plug-on module	IP 65

Materials



1 Valve body:	Brass or Stainless Steel
2 Plunger seal:	FPM (Viton)
3 O-rings:	FPM (Viton)
4 Armature guide tube:	1.4303
5 Plunger:	1.4105
6 Slip-rings:	PTFE-Compound
7 Spring:	1.4310
8 Stopper:	1.4105
9 Coil:	PA (Polyamid)
10 Locknut:	9SMnPb28K (Surface-finish Zn5glcA)

Characteristic Values with ordering information (other versions on request)

Brass body; Sealing FPM

(with plug-on control electronics)

Port-connection [Inch]	Orifice [mm]	K _{Vs} -Value (Water) [m ³ /h]	Q _{Nn} -Value (Air) [l/min]	Pressure-range ¹⁾ [bar]	Power-consumption [W]	max. Coil-current [mA]	Input-signal ²⁾	Weight [kg]	Order-No.
G 1/4	2,0	0,10	110	0 - 8	8	300	4...20 mA	0,507	702 532 X
G 1/4	2,0	0,10	110	0 - 8	8	300	0...10 V	0,507	702 533 Y
G 1/4	4,0	0,33	350	0 - 2	8	300	4...20 mA	0,507	702 534 Z
G 1/4	4,0	0,33	350	0 - 2	8	300	0...10 V	0,507	702 535 S
G 3/8	4,0	0,40	430	0 - 4	15	530	4...20 mA	0,908	702 536 T
G 3/8	4,0	0,40	430	0 - 4	15	530	0...10 V	0,908	702 537 U
G 3/8	6,0	0,70	750	0 - 2	15	530	4...20 mA	0,908	702 538 D
G 3/8	6,0	0,70	750	0 - 2	15	530	0...10 V	0,908	702 539 E

Stainless Steel body; Sealing FPM

(with plug-on control electronics)

Port-connection [Inch]	Orifice [mm]	K _{Vs} -Value (Water) [m ³ /h]	Q _{Nn} -Value (Air) [l/min]	Pressure-range ¹⁾ [bar]	Power-consumption [W]	max. Coil-current [mA]	Input-signal ²⁾	Weight [kg]	Order-No.
G 1/4	2,0	0,10	110	0 - 8	8	300	4...20 mA	0,507	704 233 D
G 1/4	2,0	0,10	110	0 - 8	8	300	0...10 V	0,507	704 234 E
G 1/4	4,0	0,33	350	0 - 2	8	300	4...20 mA	0,507	704 235 F
G 1/4	4,0	0,33	350	0 - 2	8	300	0...10 V	0,507	704 236 G

1) All pressures quoted are gauge pressures with respect to the prevailing atmospheric pressure.

2) Input signal 0-20 mA on request.

Regulation data - characteristics

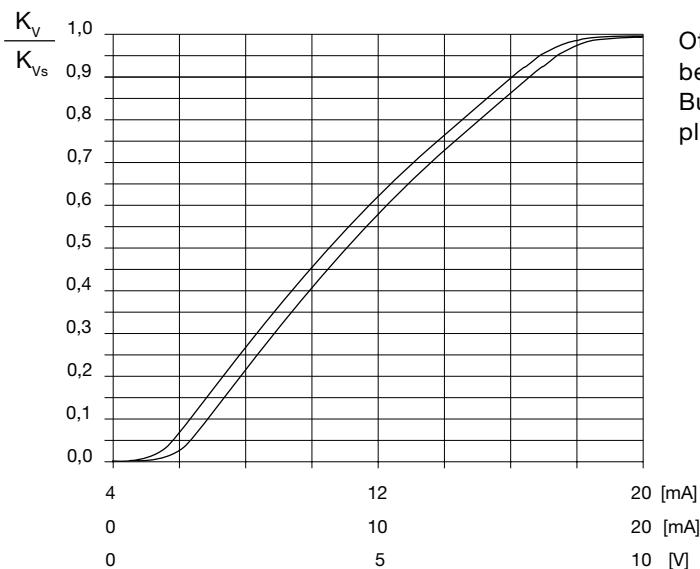
Characteristic	see diagram
Hysteresis	< 5%
Repeatability	< 0.5% F.S.
Responsivity	< 0.5% F.S.
Setting time (90%)	< 50 ms
Turn down ratio	1 : 10

Advice for selection of valve sizing

In fluid plants including continuous valves, the choice of the appropriate valve size is much more important than with on/off valves. The optimum orifice should be selected such that, on the one hand, the resulting flow in the fluid system is not unnecessarily reduced by the valve, and, on the other hand, a sufficient part of the pressure drop takes place over the valve even if it is fully opened:

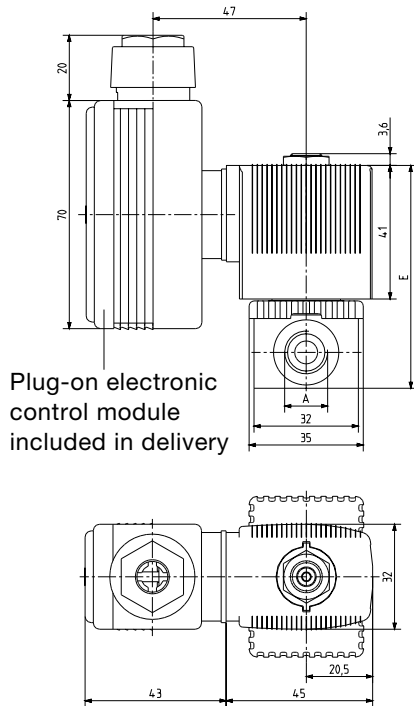
recommended value: $\Delta p_{\text{valve}} > 30\%$ of total Δp within the system

Otherwise, even a perfectly linear valve characteristic will be deformed to a heavily convex shape. For that reason, Burkert offers a competent guide service from the early planning phases of a fluid plant.



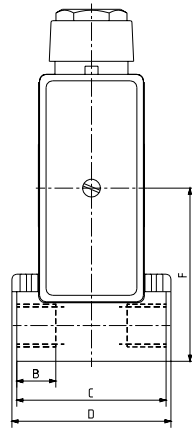
Dimensions (in mm)

Type 6022; G1/4"

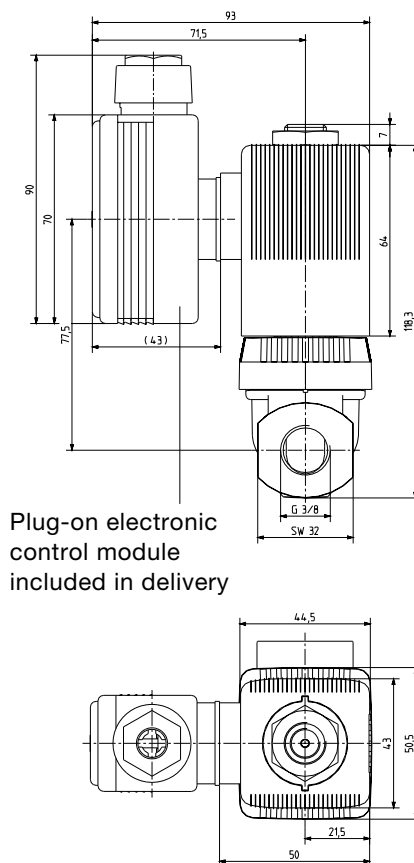


Variable Dimensions

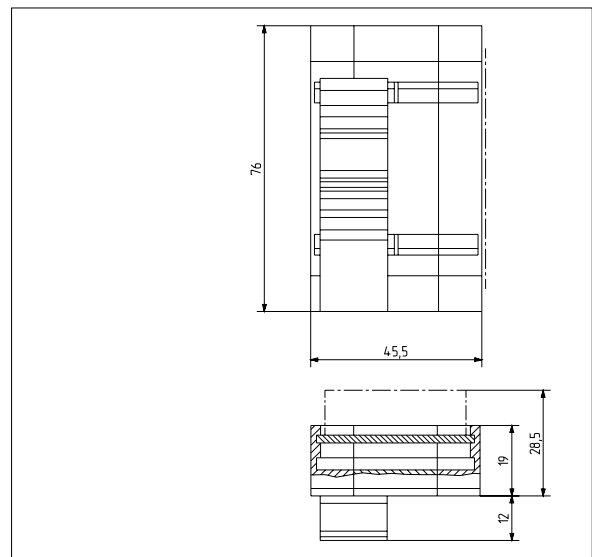
Port-connection	Orifice [mm]	A	B	C	D	E	F
		G 1/4	4,0	1/4"	12,0	46,0	49,0



Type 6023; G3/8"



DIN-rail mounting version of control electronics on request (design version H).



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