

2/2-Way; Pilot-Assisted; 3/8"- 1"; NPT; 7-145 PSI



Design / Function

The Type 6223 is an internally-piloted proportional solenoid valve with a near linear characteristic operating curve and a C_v range from 1.6 to 5.8. Variable flow is achieved by positioning the valve's armature proportionally to a standard electronic control signal. The high frequency pulse-width modulation design provides excellent control characteristics with deviations <1%.

The proportional solenoid valve consists of the basic valve and the Type 1094 plug-on electronic control unit, which can be mounted in any position. The electronic control unit is integrated into the DIN 43 650 A plug, however, it is also available in a standard DIN-rail mounting configuration.

- Adjustable ramp function from 0-10 s cushions setpoint 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 for coil heating
- Adjustable zero and span settings
- Simple ordering procedure with one order number for valve and control electronics

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Advantages / Benefits

- ▶ Optimization of process and product quality through proportional control
- ▶ Increased 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

Applications

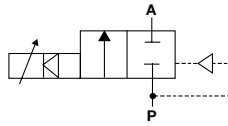
- Proportional control of larger flow rates of neutral and slightly aggressive media.
- General machine construction (in particular control for cooling circulations)
 - Process technology in the chemical industry
 - Paper and printing machines (e.g., moisture control)
 - Filling systems
 - Machinery and plants for food and beverage industries
 - Water treatment
 - Medical technology (sterilization)
 - Textile industry (dyeing, washing, drying)



Technical Data

Valve function

A 2/2-way proportional valve, normally closed, servo-assisted



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	7 - 145 PSI
Port connection	NPT 3/8", 1/2", 3/4", 1" (see characteristics)
Body material	Brass or Stainless Steel
Sealing material	FPM (Viton)
Medium	Neutral liquids
Temperat. range of medium	14°F to 194°F
Max. ambient temperature	131°F
Max. Viscosity	21 cSt
Installation position	Any, no limitation on function

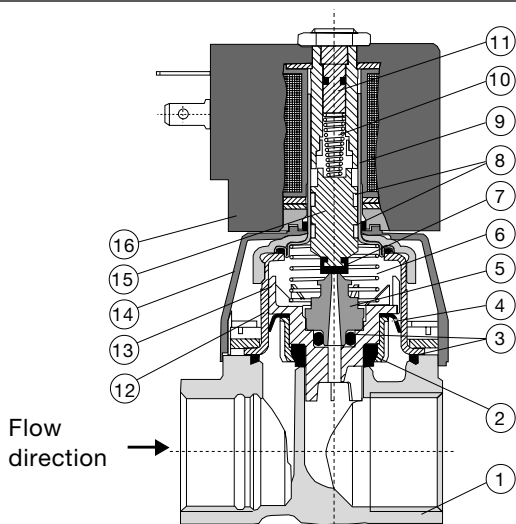
Operational Data for Control Electronics

Design version M	Plug-on module
Design version H	DIN-rail mounting version (on request)
Operational voltage	24 VDC, (max. 28VDC)
Ripple	±10% (Burkert recommends power supply Type 1610)
Input signal	4-20 mA, 0-10V (0 - 20 mA on request)
Control signal for valve max. current consumption	PWM (Pulse Width Module) 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 - 10s (adjustable)
Protection class	NEMA 4 (IP65) when mounted on valve-version M
Electrical connection	Plug has screw terminals and accepts a 7mm cable

Operational Data (Solenoid)

Operational voltage	24 VDC
Nominal power	See characteristics
Duty cycle	100% continuously rated
Protection class with mounted plug-on module	NEMA 4 (IP 65)

Materials



1 Valve body:	Brass or 316L Stainless Steel
2 Seal:	FPM (Viton)
3 O-rings:	FPM (Viton)
4 Gasket:	PTFE
5 Pilot-seat:	PPS
6 Spring:	301 Stainless Steel
7 Plunger-seal:	FPM (Viton)
8 Slip-ring:	PTFE-Compound
9 Armature guide tube:	301 Stainless Steel
10 Spring:	301 Stainless Steel
11 Stopper:	430F Stainless Steel
12 Cover:	301 Stainless Steel
13 Piston:	PPS
14 Bonnet:	PA (Polyamide)
15 Plunger:	430F Stainless Steel
16 Coil bobbin:	PA (Polyamide)

Characteristic Values with Ordering Information (Other Versions on Request)

Brass or Stainless Steel Body; Sealing FPM (Viton)

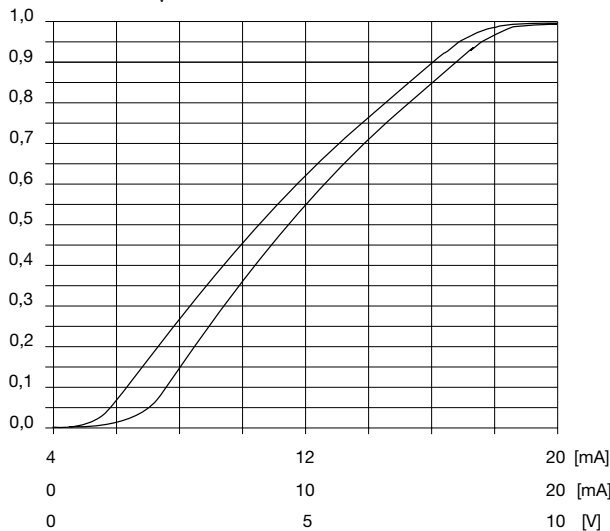
Port Connection [Inch]	Orifice [Inch]	Body Material	C _v	Pressure Range [PSI]	Power-Consumption [W]	Max. Coil-Current [mA]	Input signal	Weight [lbs]	Controller	Item-No. Valve	Valve with Controller
3/8 NPT	3/8	Brass	1.6	7-145	8	300	4-20 mA	1.2	060 644 J	457 138 W	702 628 P
3/8 NPT	3/8	Brass	1.6	7-145	8	300	0-10 V	1.2	060 459 R	457 138 W	702 629 Q
1/2 NPT	3/8	Brass	1.6	7-145	8	300	4-20 mA	1.1	060 644 J	457 139 X	702 630 M
1/2 NPT	3/8	Brass	1.6	7-145	8	300	0-10 V	1.1	060 459 R	457 139 X	702 631 A
1/2 NPT	1/2	Brass	2.9	7-145	10	330	4-20 mA	1.6	060 644 J	457 140 C	702 632 B
1/2 NPT	1/2	Brass	2.9	7-145	10	330	0-10 V	1.6	060 459 R	457 140 C	702 633 C
3/4 NPT	1/2	Brass	2.9	7-145	10	330	4-20 mA	1.4	060 644 J	457 141 Z	702 634 D
3/4 NPT	1/2	Brass	2.9	7-145	10	330	0-10 V	1.4	060 459 R	457 141 Z	702 635 E
3/4 NPT	3/4	Brass	5.8	7-145	15	530	4-20 mA	3.1	060 644 J	457 142 S	702 636 F
3/4 NPT	3/4	Brass	5.8	7-145	15	530	0-10 V	3.1	060 459 R	457 142 S	702 637 G
1 NPT	3/4	Brass	5.8	7-145	15	530	4-20 mA	2.8	060 644 J	457 143 T	702 638 R
1 NPT	3/4	Brass	5.8	7-145	15	530	0-10 V	2.8	060 459 R	457 143 T	702 639 J
1/2 NPT	1/2	SS	2.9	7-145	10	330	4-20 mA	1.6	060 644 J	458 404 B	702 265 M
1/2 NPT	1/2	SS	2.9	7-145	10	330	0-10 V	1.6	060 459 R	457 404 B	702 266 N
3/4 NPT	1/2	SS	2.9	7-145	10	300	4-20 mA	1.4	060 644 J	458 405 C	702 267 P
3/4 NPT	1/2	SS	2.9	7-145	10	300	0-10 V	1.4	060 459 R	458 405 C	702 268 Y
3/4 NPT	3/4	SS	5.8	7-145	15	530	4-20 mA	3.1	060 644 J	458 406 D	702 269 Z
3/4 NPT	3/4	SS	5.8	7-145	15	530	0-10 V	3.1	060 459 R	458 406 D	702 270 W
1 NPT	3/4	SS	5.8	7-145	15	530	4-20 mA	2.8	060 644 J	458 407 E	702 271 K
1 NPT	3/4	SS	5.8	7-145	15	530	0-10 V	2.8	060 459 R	458 407 E	702 272 L

Versions for air and gases on request.

Regulation Data - Characteristics

Characteristic	see diagram
Hysteresis	< 5%
Repeatability	< 1% F.S.
Responsivity	< 1% F.S.
Setting time (90%)	< 200 ms
Turn down ratio	1 : 20

% of Maximum C_v



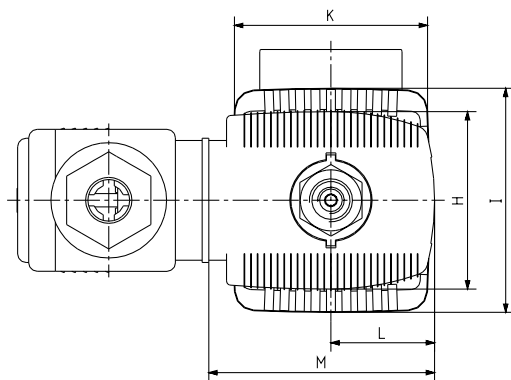
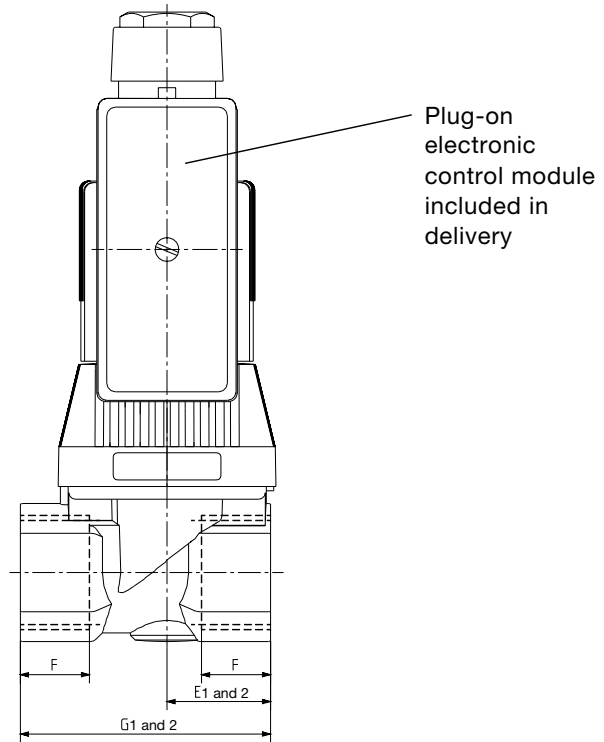
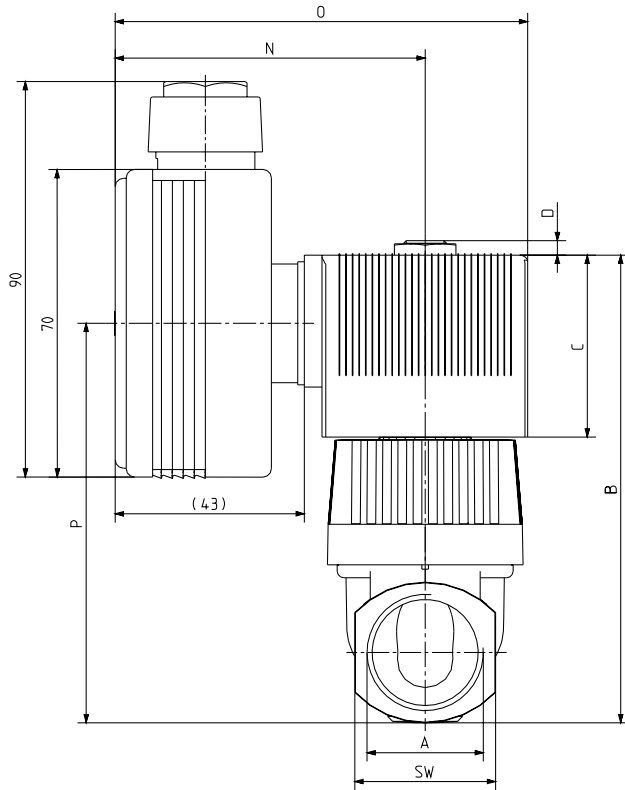
Advice for Selection of Valve Sizing

In continuous flow applications, the choice of the appropriate valve size is much more 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.

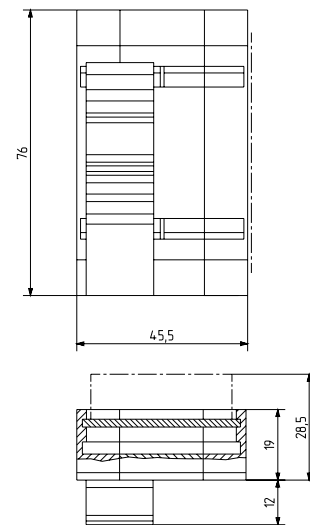
Recommended value: $\Delta p_{\text{valve}} > 30\%$ of total Δp within the system

Contact Burkert should you require assistance with valve sizing.

Dimensions [in (mm)]



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



Port-Conn.	Orifice [Inch]	A/F	B	C	D	E	F	G	H	I	K	L	M	N	O	P
NPT 3/8	.39	1.1	3.37	1.62	.15	.79	.47	1.97	1.26	1.50	1.48	.81	1.77	2.66	3.47	2.77
NPT 1/2	.39	1.1	3.37	1.62	.15	.79	.55	1.97	1.26	1.50	1.48	.81	1.77	2.66	3.47	2.77
NPT 1/2	.51	1.3	4.18	1.63	.13	.95	.55	2.29	1.58	1.99	1.75	.93	2.01	2.78	3.70	3.57
NPT 3/4	.51	1.3	4.18	1.63	.13	.95	.63	2.29	1.58	1.99	1.75	.93	2.01	2.78	3.70	3.57
NPT 3/4	.79	1.6	5.82	2.52	.28	1.38	.63	3.15	1.69	2.60	2.60	.85	1.97	2.82	3.66	4.84
NPT 1	.79	1.6	5.82	2.52	.28	1.38	.71	3.15	1.69	2.60	2.60	.85	1.97	2.82	3.66	4.84

In case of special requirements, please advice for consults.

We reserve the right to make technical changes without notice.

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