bürkert
FLUID CONTROL SYSTEMS

Servo-assisted 2-way high-flow solenoid control valve

- Control valve for continuous control of liquids
- Low hysteresis and high repeatability
- Control with PWM signal
- Servo-assisted, tight closing valve

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

Type 2518
Cable Plug DIN EN 175301-803 - Form A

Type 8605
PWM Control Electronics for Solenoid Control Valves

Type description

The valve Type 6223 can be used for the control of larger flow quantities. Low hysteresis, high reproducibility and good response sensitivity guarantee good positioning behaviour. The valve closes tight. The push-over coil is easy to replace.

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Visit product website

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1. General Technical Data

Product properties	
Dimensions	Detailed information can be found in chapter "4. Dimensions" on page 4.
Material	
Body	Brass, stainless steel on request
Seal	FKM, others on request
Performance data	
Typical values of positioning behaviour[1.]	
Hysteresis	< 5 %
Reproducibility	< 1 % of end value[2.]
Response sensitivity	< 1 % of end value[2.]
Setting range	1:10
Actuating time (10…90 %)	< 200 ms
Pressure range[3.]	0,5…10 bar
Nominal operating mode	100 % continuous operation
Electrical data	
Operating voltage	24 V DC (12 V on request)
Power consumption	Detailed information can be found in chapter "6.4. Ordering chart" on page 8.
Maximum coil current[4.]	Detailed information can be found in chapter "6.4. Ordering chart" on page 8.
PWM frequency[5.]	280 Hz
Medium data	
Medium	Neutral liquids
Medium temperature	-10 °C…+90 °C
Viscosity (max.)	Maximum 21 mm^2/s (21 cSt)
Process/Port connection & communication	
Port connection size	G ⅜, G ½, G ¾, G 1
Electrical connection	Cable plug Type 2518 acc. to DIN EN 175301-803 form A Detailed information can be found in chapter "Cable plug Type 2518, Form A according to DIN EN 175301-803" on page 9.
Approvals and certificates	
Degree of protection	IP65
Environment and installation	
Installation position	Any, preferably actuator face up
Ambient temperature	Maximum +55 °C

1.) Characteristic data of control behaviour depends on process conditions.

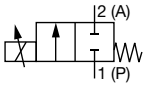
2.) By flow measurement

3.) Pressure data: Overpressure with respect to atmospheric pressure, depending on nominal diameter, tightness seal or nominal pressure

4.) Maximum value: value depends on operating pressure

5.) PWM: pulse width modulation

2. Circuit functions

Circuit functions	Description
	**Type: A, proportional control valve** 2/2 way Direct-acting Normally closed

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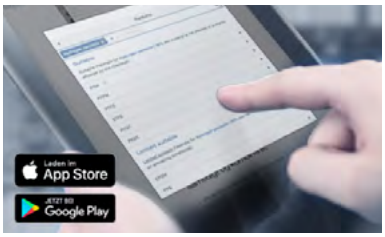
3. Materials

3.1. Chemical Resistance Chart – Bürkert resistApp



Bürkert resistApp – Chemical Resistance Chart

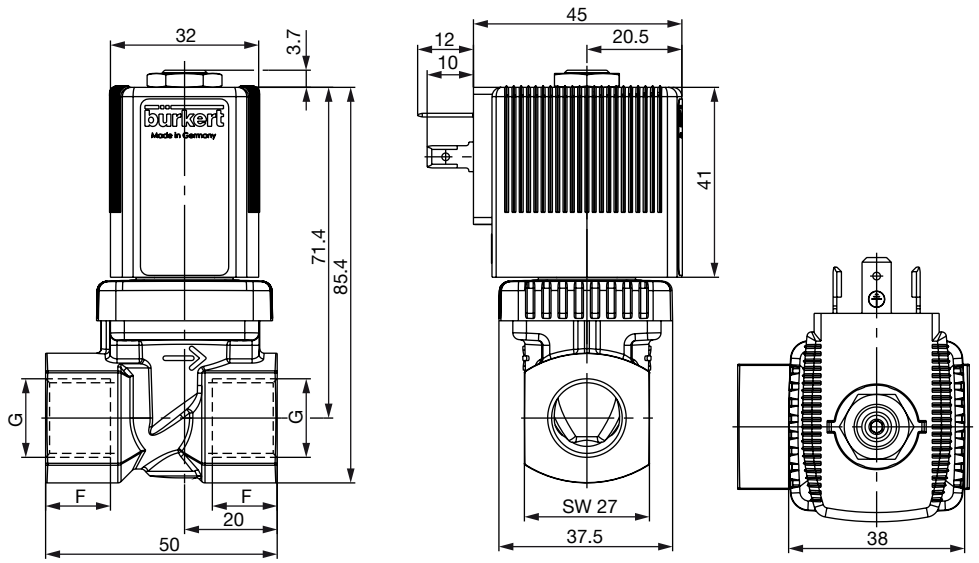
You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

Start Chemical Resistance Check

4. Dimensions

4.1. DN10 version with coil size 5

Note:
Dimensions in mm



DN	F1	G1	F2	G2	F3	G3
DN10	12	G ⅜	10.3	NPT ⅜	10.1	Rc ⅜
	14	G 1/2	13.7	NPT 1/2	13.2	Rc 1/2

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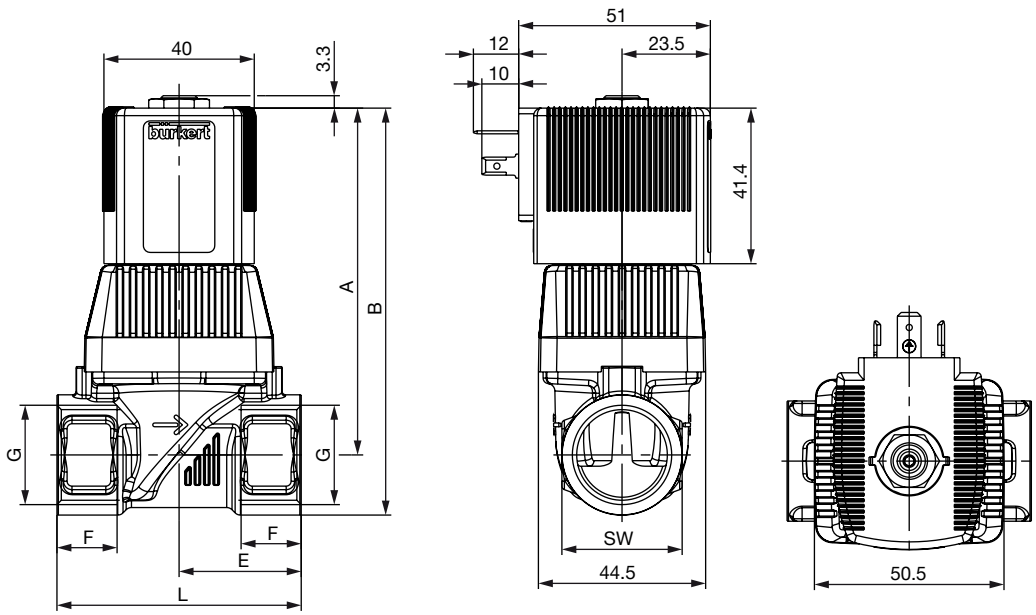
4.2. DN13 version with coil size 6

Note:
Dimensions in mm



DN	A	B	E (MS/VA)	F1	G1	F2	G2	F3	G3	L (MS/VA)	SW
DN13	90.3	103.8	27.25/32.5	14	G ½	13.7	NPT ½	13.2	Rc ½	58/65	27
	92.3	108.3	32.5	16	G ¾	14	NPT ¾	14.5	Rc ¾	65	32

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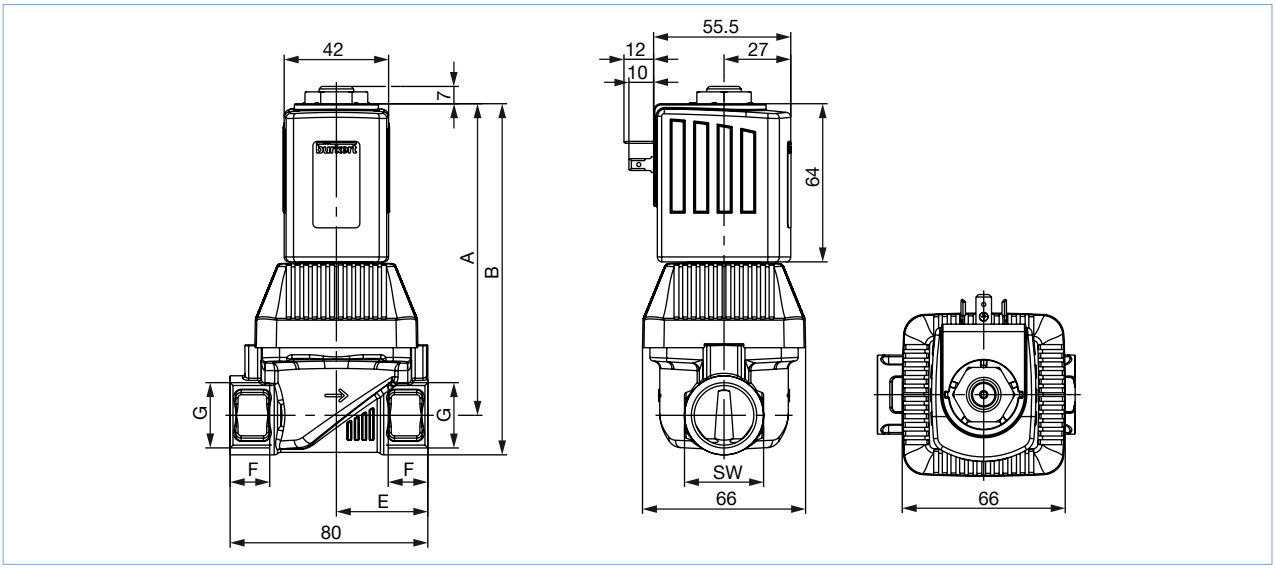
4.3. DN20 version with coil size K

Note:
Dimensions in mm



DN	A	B	E	F1	G1	F2	G2	F3	G3	SW
DN20	126.1	142.1	37	16	G ¾	14	NPT ¾	14.5	Rc ¾	32
	128.6	149.1	37.5	18	G 1	16.8	NPT 1	16.8	Rc 1	41

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5. Performance specifications

5.1. Flow characteristic

Determination of the K_V value

Pressure drop	K_V value for liquids [m^3/h]	K_V value for gases [m^3/h]
Sub-critical $p_2 > \frac{p_1}{2}$	$= Q\sqrt{\frac{\rho}{1000\,\Delta p}}$	$= \frac{Q_N}{514}\sqrt{\frac{T_1\,\rho_N}{p_2\,\Delta p}}$
Supercritical $p_2 < \frac{p_1}{2}$	$= Q\sqrt{\frac{\rho}{1000\,\Delta p}}$	$= \frac{Q_N}{257\,p_1}\sqrt{T_1\,\rho_N}$

K_V	Flow coefficient	[m^3/h][1.)]
Q_N	Standard flow rate	[m_N^3/h][2.)]
p_1	Inlet pressure	[bar][3.)]
p_2	Outlet pressure	[bar][3.)]
Δp	Differential pressure p_1-p_2	[bar]
ρ	Density	[kg/m^3]
ρ_N	Standard density	[kg/m^3]
T_1	Medium temperature	[(273+t)K]

1.) Measured for water, Δp = 1 bar, over the value

2.) At reference conditions 1.013 bar and 0 °C (273 K)

3.) Absolute pressure

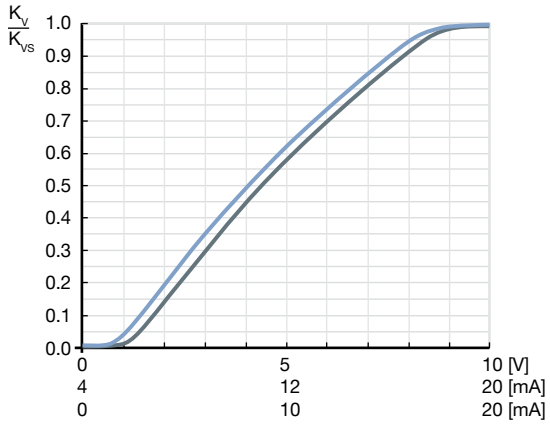
5.2. Exemplary characteristic curve of a proportional valve

Note:
In continuous flow applications, the choice of an appropriate valve size is much more important than with on/off valves. The optimum 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: $\Delta p_{valve} > 25\,\%$ of total pressure drop within the system

Otherwise, the ideal, linear valve curve characteristic is changed.

If the differential pressure (difference between inlet and outlet pressure) exceeds half the value of the nominal pressure discontinuities may occur.
For that reason take advantage of Bürkert competent engineering services during the planning phase!



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