DATA SHEET

Type 7012

bürkert
FLUID CONTROL SYSTEMS

Direct-acting 3/2-way plunger valve

- Direct-acting and compact small valve up to DN 1.6
- Slipped over coil system
- Banjo fitting for direct mounting on pneumatic valves
- Simple and fast push-in, flange or manifold mounting

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

Type description

The 7012 valve is a direct-acting plunger valve. The stopper and the core guide tube are welded together to enhance pressure resistance and leak-tightness. Various body and seal material combinations are available depending on the actual application. A Bürkert-specific flange variant (SFB) enables the space-saving arrangement of valves on a multiple manifold. Push-in fittings can be selected for a flexible hose connection. A banjo connection with banjo bolt is the ideal solution for easy direct mounting on a pneumatic actuator. Optional manual override enables quick start-up and optimal maintenance. In combination with a plug to industry standard Form B or DIN EN 17301-803 Form C, the valves satisfy degree of protection IP65.

DTS 1000446517 EN Version: D Status: RL (released | freigegeben | validé) printed: 06.08.2021

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1. General technical data

Product properties	
Dimensions	Detailed information can be found in chapter "4. Dimensions" on page 6.
Material	
Body	Brass, polyamide (PA), stainless steel 1.4305
Seal	FKM, EPDM
Weight	
Standard version 24.5 mm solenoid coil	146 g (with G ⅛)
Standard version 20 mm solenoid coil	120 g (with G ⅛)
Banjo version	135 g
Circuit function	Detailed information can be found in chapter "2. Circuit functions" on page 4.
Thermal insulation class of solenoid	Epoxy: class H
Manual override	Optional, standard for Type 7012 banjo version
Performance data	
Nominal operating mode	
Single valve	Continuous operation 100 % ED resp. 50 % ED
For block mounting on multiple manifold	With 4 W/5 W solenoid coil 100 % ED (at max. 55 °C)
Switching times[1.)]	
Standard version	Orifice 1.2…1.6 mm: opening 8…12 ms, closing 8…12 ms
Banjo version	Orifice 1.2 mm: opening 7…12 ms, closing 7…12 ms
Circuit function	C and D
Electrical data	
Operating voltage	24 V DC, 24 V / 50 Hz, 110 / 230 V / 50 Hz
Voltage tolerance	±10 %
Medium data	
Viscosity (max.)	21 mm^2/s
Operating medium	Neutral gases and fluids (e.g. compressed air, water, hydraulic oil, technical vacuum)
Medium temperature	
Standard version	-10 °C…+100 °C
Banjo version	-10 °C…+60 °C
Process/Port connection & communication	
Port connection	
Standard version	M5, G ⅛, Flange
Banjo version	G ⅛, G ¼ and hose connector Ø 6 mm
Electrical connection	• Acc. to DIN EN 175301-803 Form C for cable plug Type 2516 • Acc. to industry standard Form B for cable plug Type 2507 • Flat pin terminal as protection class III device • Flying leads connection on request for coil size 20 mm
Approvals and Certificates	
Degree of protection	IP65 with cable plug
Environment and installation	
Installation position	As required, preferably with actuator upright
Ambient temperature	
Standard version	Max. +55 °C resp. 75 °C depending on power level
Banjo version	-10 °C…+40 °C

1.) Measured at valve outlet at 6 bar and +20 °C according to ISO 12238, opening: pressure rise 0…10 %, closing: pressure drop 100…90 %

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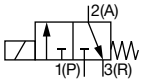
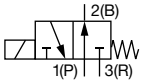
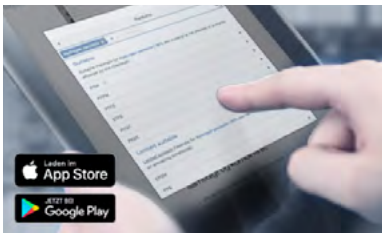
2. Circuit functions

Circuit functions	Description
	**Type: C, solenoid valve** 3/2 way Direct-acting Normally closed
	**Type: D, solenoid valve** 3/2 way Direct-acting Normally open

3. Materials

3.1. Chemical Resistance Chart – Bürkert resistApp



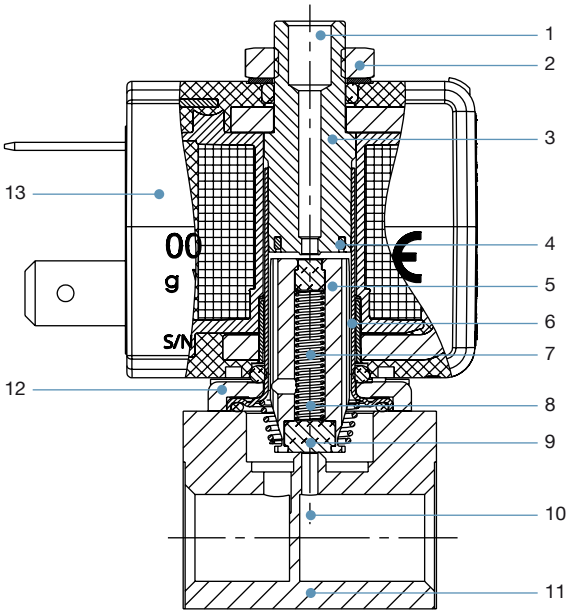
Bürkert resistApp – Chemical Resistance Chart

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

3.2. Material specifications

Standard version



No.	Element	Material
1	Pressure port P	For circuit function D
2	Locknut	DIN 176 Surface finish thick film passivated KOSA0101
3	Stopper	Stainless steel 1.4113
4	Shading ring	Copper (silver optional)
5	Core	Stainless steel 1.4113
6	Guide tube	Stainless steel 1.4303
7	Spring	Stainless steel 1.4310
8	O-ring	FKM/EPDM
9	Seal	FKM/EPDM
10	Pressure port P	For circuit function C
11	Valve body	Brass, stainless steel 1.4305 PA (polyamide)
12	Flange	• Surface finish thick film passivated KOSA0101 (brass version) • Nickel-plated surface (stainless steel version)
13	Coil	Epoxy

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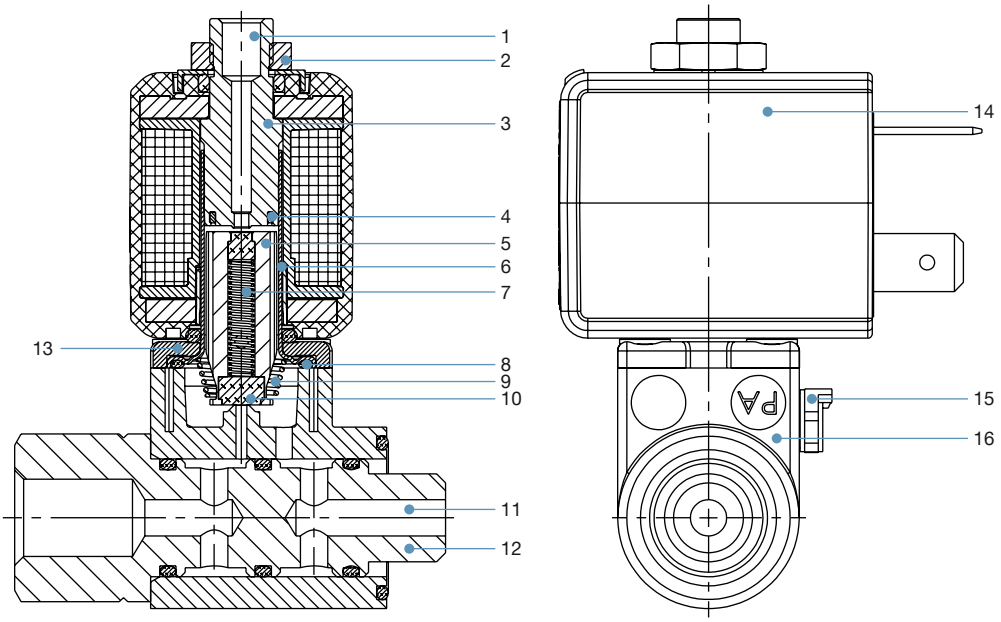
Banjo version



No.	Element	Material
1	Pressure port P	For circuit function D
2	Locknut	DIN 176 Surface finish thick film passivated KOSA0101
3	Stopper	Stainless steel 1.4113
4	Shading ring	Copper (silver optional)
5	Core	Stainless steel 1.4113
6	Guide tube	Stainless steel 1.4303 ST
7	Spring	Stainless steel 1.4310
8	O-ring	FKM
9	Spring	Stainless steel 1.4310
10	Seal	FKM
11	Pressure port P	For circuit function C
12	Banjo bolt	Nickel-plated brass
13	Flange	• Surface finish thick film passivated KOSA0101 (brass version) • Nickel-plated surface (stainless steel version)
14	Coil	Epoxy
15	Manual override	Durethan
16	Body	PA (polyamide)

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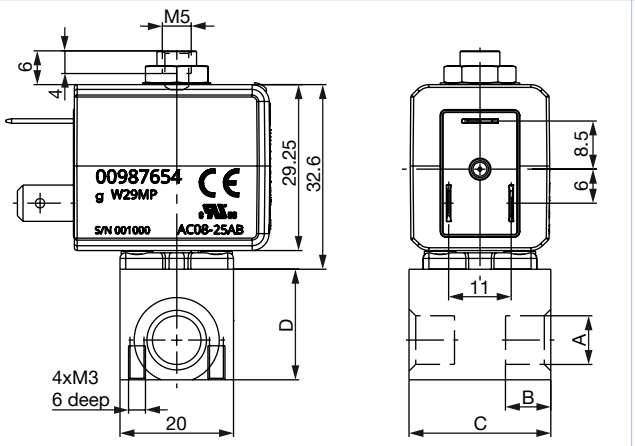
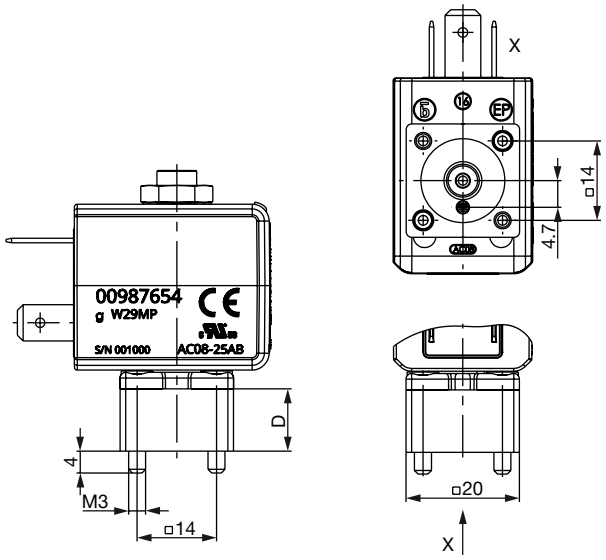
4. Dimensions

4.1. Standard version

Versions according to industry standard Form B

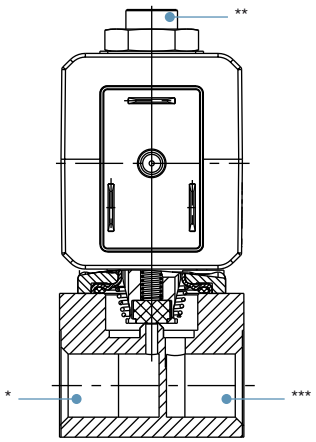
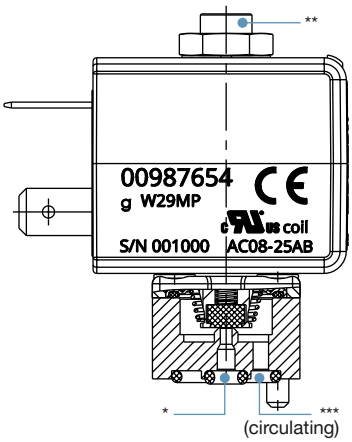
Note:
Dimensions in mm

Threaded version	Flange version
	

Port connection	A	B	C	D
Thread	M5	5	20	14
Thread	G ⅛	8	25	19.5
Flange	–	–	20	11

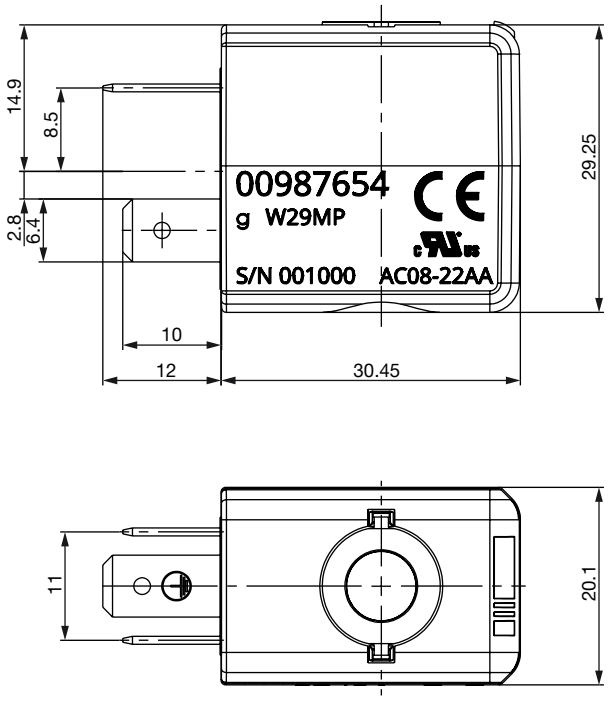
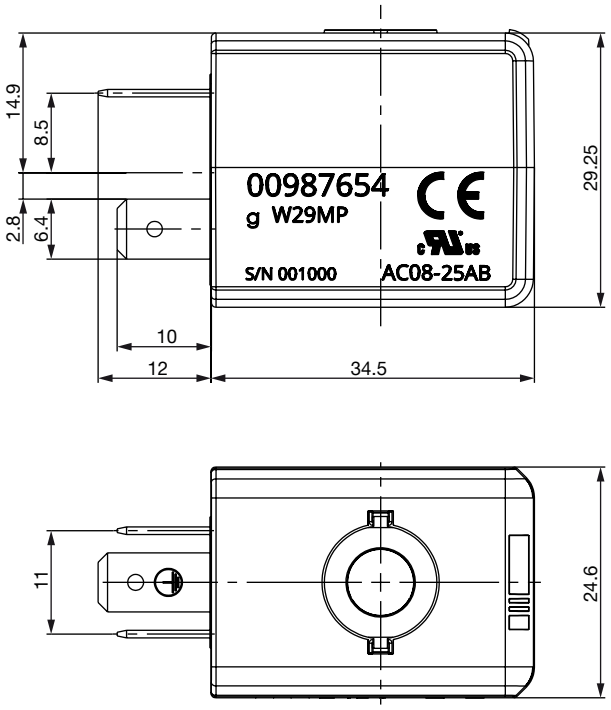
PIN Assignments

For the positions marked with *, ** or *** in the drawing, the connections are marked with the letters shown in the table above, depending on the circuit function. Unused connections in circuit functions A or B will be closed off with a blanking plug or cap nut.

Circuit function	Connection Type			Threaded version	Flange version
	*	**	***		
A	P	to lock	A		
B	to lock	B	P		
C	P	R	A		
D	R	P	B		
T	P	R	A		

Versions according to industry standard Form B

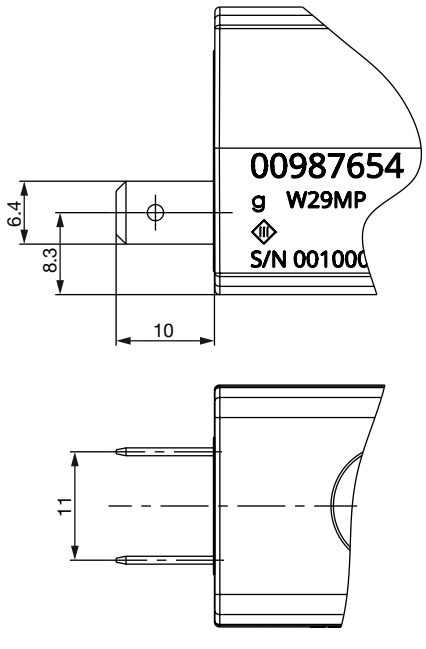
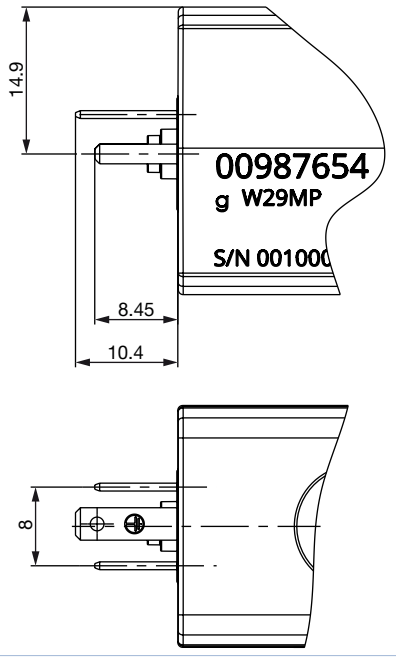
Note:
Dimensions in mm

Coil size 2 (20 mm)	Coil size 3 (24.5 mm)
	

Further electrical connections

Note:

- Specifications apply to coil sizes 20 mm and 24.5 mm
- Dimensions in mm

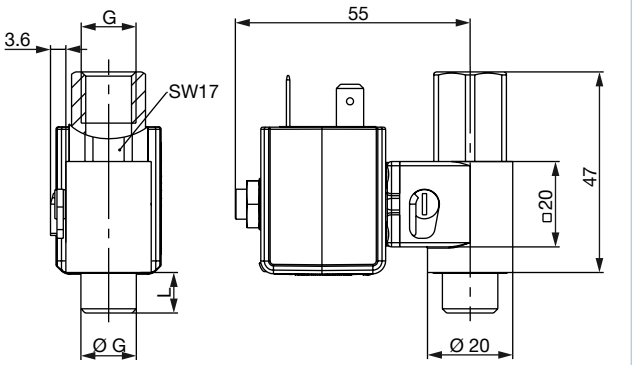
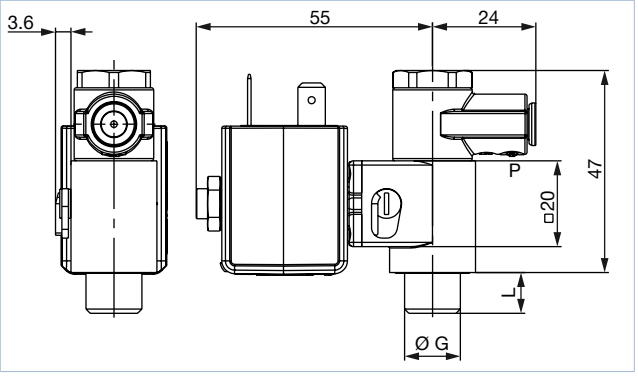
Version flat pin terminal as protection class III device	Version according to DIN EN 175301 - 803 Form C
	

4.2. Banjo version

Versions according to industry standard Form B, coil size 24.5 mm

Note:

- Dimensions in mm
- Plug connection for compressed air: Pressure port P can be continuously rotated through 360°.
- Available orifices: 1.2 mm

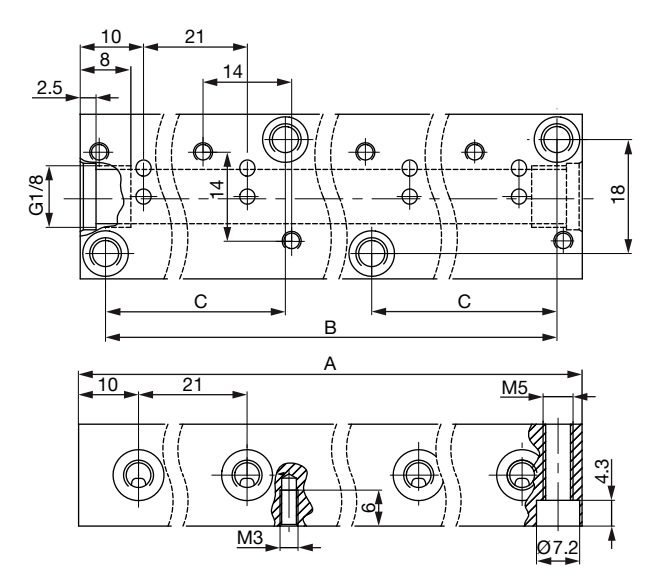
Threaded version for compressed air	Plug connection for compressed air
	

G	L
G ⅛	6.5
G ¼	9.5

4.3. Multiple manifold

Note:

- Dimensions in mm
- Can only be combined with versions circuit function C (normally closed) and valves with coil size 20 mm
- Manifolds with valves of coil size 24.5 mm on request



Quantity of valve places	A [mm]	B [mm]	C [mm]	Article no.
1	20	12	–	005312
2	41	33	–	005355
3	62	54	–	005313
4	83	75	–	005314
5	104	96	–	005315
6	125	117	–	005316
7	146	138	–	005893
8	167	159	54	005166
9	188	180	54	005241
10	209	201	75	005819
11	230	222	75	005242
12	251	243	96	005222

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5. Performance specifications

5.1. Power consumption of standard coil version 24.5 mm

Coil	Orifice	Electrical power					Switching times[1.]	
		Inrush AC	Hold AC		DC		Opening	Closing
	[mm]	[VA]	[VA]	[W]	Cold [W]	Hot [W]	[ms]	[ms]
24 V / DC / 7 W	1.2	–	–	–	7	5.5	8…12	8…12
	1.6							
24 V / DC / 5.5 W	1.2	–	–	–	5.5	4.5		
	1.6							
24 V / 50 Hz / 4 W	1.2	12	6.5	4	–	–		
	1.6							
230 V / 50 Hz / 4 W	1.2	12	6.5	4	–	–		
	1.6							

1.) Measured at valve outlet at 6 bar[2.] and +20 °C according to ISO 12238, opening: pressure rise 0…10 %, closing: pressure drop 100…90 %

2.) Measured as overpressure to the atmospheric pressure and air as a medium

5.2. Power consumption of standard coil version 20 mm

Coil	Orifice	Electrical power					Switching times[1.]	
		Inrush AC	Hold AC		DC		Opening	Closing
	[mm]	[VA]	[VA]	[W]	Cold [W]	Hot [W]	[ms]	[ms]
24 V / DC / 6.5 W	1.2	–	–	–	6.5	5	8…12	8…12
	1.6							
24 V / 50 Hz / 6 W	1.2	11	7	6	–	–		
	1.6							
230 V / 50 Hz / 6 W	1.2	11	7	6	–	–		
	1.6							
24 V / DC / 5 W	1.2	–	–	–	5	4		
	1.6							
24 V / 50 Hz / 4 W	1.2	9	5	4	–	–		
	1.6							
230 V / 50 Hz / 4 W	1.2	9	5	4	–	–		
	1.6							

1.) Measured at valve outlet at 6 bar[2.] and +20 °C according to ISO 12238, opening: pressure rise 0…10 %, closing: pressure drop 100…90 %

2.) Measured as overpressure to the atmospheric pressure and air as a medium

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