bürkert
FLUID CONTROL SYSTEMS

3/2-way solenoid valve, direct-acting

- 3/2-way plunger valve up to DN 2.7
- Tool-free coil and core changing (core with the aid of bayonet catch)
- Push-in and flange variant
- Approval/conformities for use in the food sector
- Suitable for applications with hot water and steam

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

Type description

Type 7016 is a direct-acting, non-media separated plunger valve for the filling and dosing of neutral liquids and gases. The material selection and valve sizing also ensure safe function and durability in hot water and steam applications. The innovative service concept allows the valve to be opened quickly and inspected, and wearing parts to be changed if needed, via a bayonet catch without the need for tools. The solenoid can be loosened and aligned in any position. Flange and push-in variants in PPS are available as port connections. The valve can be fastened and maintained quickly thanks to the optionally available quick clip brackets and/or screw fittings. The valve programme includes approvals and/or conformities as per Commission Regulation (EC) 1935/2004, FDA and NSF 169. The valves comply with degree of protection IP20.

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1. General technical data

Product properties	
Dimensions	Further information can be found in chapter "6. Dimensions" on page 8.
Material	
Seal	FKM, EPDM
Housing	Polyphenylene sulphide (PPS)
Weight	
Push-in housing [1.)]	115 g
Flange housing [1.)]	110 g
Orifice	DN 1.6...DN 2.7
Circuit function	C Further information can be found in chapter "3. Circuit functions" on page 5.
Thermal insulation class of solenoid coil	Epoxy coil class H
Performance data	
Duty cycle/single valve	100 % continuous operation (at max. + 65 °C ambient temperature)
Switching time [2.)]	Opening: 8...15 ms Closing: 15...20 ms
Electrical data	
Operating voltage	24 V DC
Nominal power	7 W
Voltage tolerance	± 3 %
Medium data	
Operating medium	Neutral and aggressive gases and liquids (e.g. air, water, coffee, milk) (see chapter "5.1. Bürkert resistApp" on page 7)
Medium temperature	Liquid medium: + 5 °C...+ 100 °C Gaseous medium: + 5 °C...+ 145 °C
Viscosity	Max. 21 mm^2/s
Product connections	
Electrical connection	Flat pin terminal (6.3 × 0.8) as protection class III device
Port connection	Flange Push-in housing (hose outer diameter 6 mm) Push-in housing (hose outer diameter 4 mm)
Approvals and conformities	
Degree of protection	IP20
North America (USA/Canada)	Further information can be found in chapter "4.4. North America (USA/Canada)" on page 6.
Foods and beverages/Hygiene	Further information can be found in chapter "4.5. Foods and beverages/Hygiene" on page 6.
Environment and installation	
Installation position	As required, preferably with actuator upright
Ambient temperature	Max. + 65 °C

1.) Standard variant 24.5 mm solenoid coil

2.) Measurement at + 20 °C, nominal pressure [3.)] at the valve outlet acc. to DIN ISO 12238:2001, opening: pressure build-up 0...10 %, closing: pressure reduction 100...90 %

3.) Pressure data: overpressure to atmospheric pressure and air as a medium

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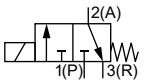
2. Product variants

Flange variant	Push-in variant

3. Circuit functions

Symbol	Description
	**Circuit function C (CF C)** 3/2-way solenoid valve Direct-acting Normally closed

4. Approvals and conformities

4.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants can be supplied with the below mentioned approvals or conformities.

4.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

4.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

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4.4. North America (USA/Canada)

Note:
The UL Recognized coil approval applies as standard for this type. If you require any further certificate, please contact your Bürkert contact.

Approval	Description
c UL us	**Valid for coils: UL Recognized for the USA and Canada** The coils are UL Recognized for the USA and Canada according to: • UL 429 (electrically operated valves) • CAN/CSA-C22.2 No. 139

4.5. Foods and beverages/Hygiene

Approval	Description
NSF COMPONENT	**NSF/ANSI 169 (valid for the variable code PL05)** The products are approved according to NSF/ANSI 169 (special purpose food equipment and devices).

Conformity	Description
FDA	**FDA – Code of Federal Regulations (valid for the variable code PL02, PL03)** All wetted materials are compliant with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA) according to the manufacturer's declaration.
USP	**United States Pharmacopeial Convention (USP) (valid for the variable code PL04)** All wetted materials are biocompatible according to the manufacturer's declaration.
	EC Regulation 1935/2004 of the European Parliament and of the Council (valid for the variable code PL01, PL02) All wetted materials are compliant with EC Regulation 1935/2004/EC according to the manufacturer's declaration.

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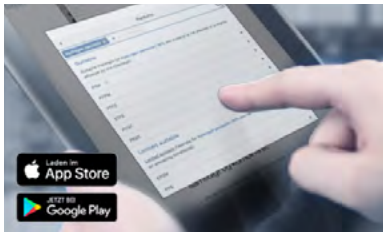
5. Materials

5.1. Bürkert resistApp



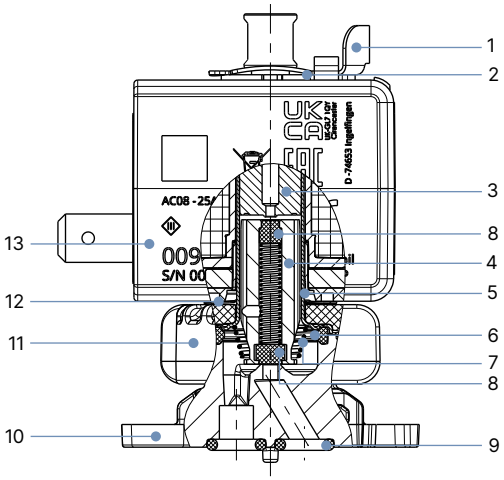
Bürkert resistApp – Chemical resistance chart

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

5.2. Material specifications

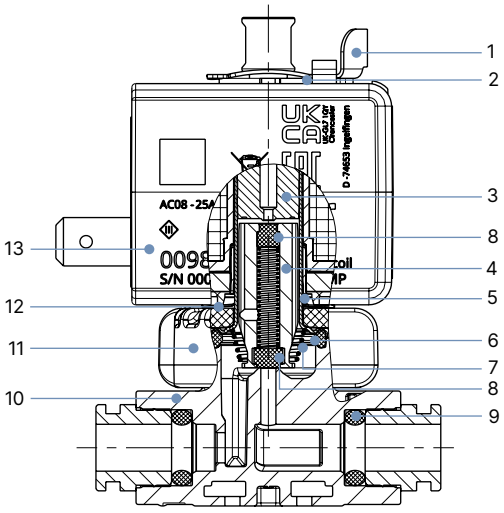
Flange variant



No.	Element	Material
1	Pushover plate	Stainless steel 1.4310
2	Retaining plate	Stainless steel 1.4301
3	Stopper 1.)	Stainless steel 1.4113
4	Core 1.)	Stainless steel 1.4113
5	Core guide tube 1.)	Stainless steel 1.4303
6	Sealing ring 1.)	EPDM
7	Spring 1.)	Stainless steel 1.4310
8	Seal 1.)	FKM/EPDM
9	O-ring 1.)	EPDM
10	Valve body 1.)	PPS
11	Union nut to bayonet catch	PA
12	Anti-twist plate	Stainless steel 1.4310
13	Coil	Epoxy

1.) Wetted

Push-in variant



No.	Element	Material
1	Pushover plate	Stainless steel 1.4310
2	Retaining plate	Stainless steel 1.4301
3	Stopper 1.)	Stainless steel 1.4113
4	Core 1.)	Stainless steel 1.4113
5	Core guide tube 1.)	Stainless steel 1.4303
6	Sealing ring 1.)	EPDM
7	Spring 1.)	Stainless steel 1.4310
8	Seal 1.)	FKM/EPDM
9	O-ring 1.)	EPDM
10	Valve body 1.)	PPS
11	Union nut to bayonet catch	PA
12	Anti-twist plate	Stainless steel 1.4310
13	Coil	Epoxy

1.) Wetted

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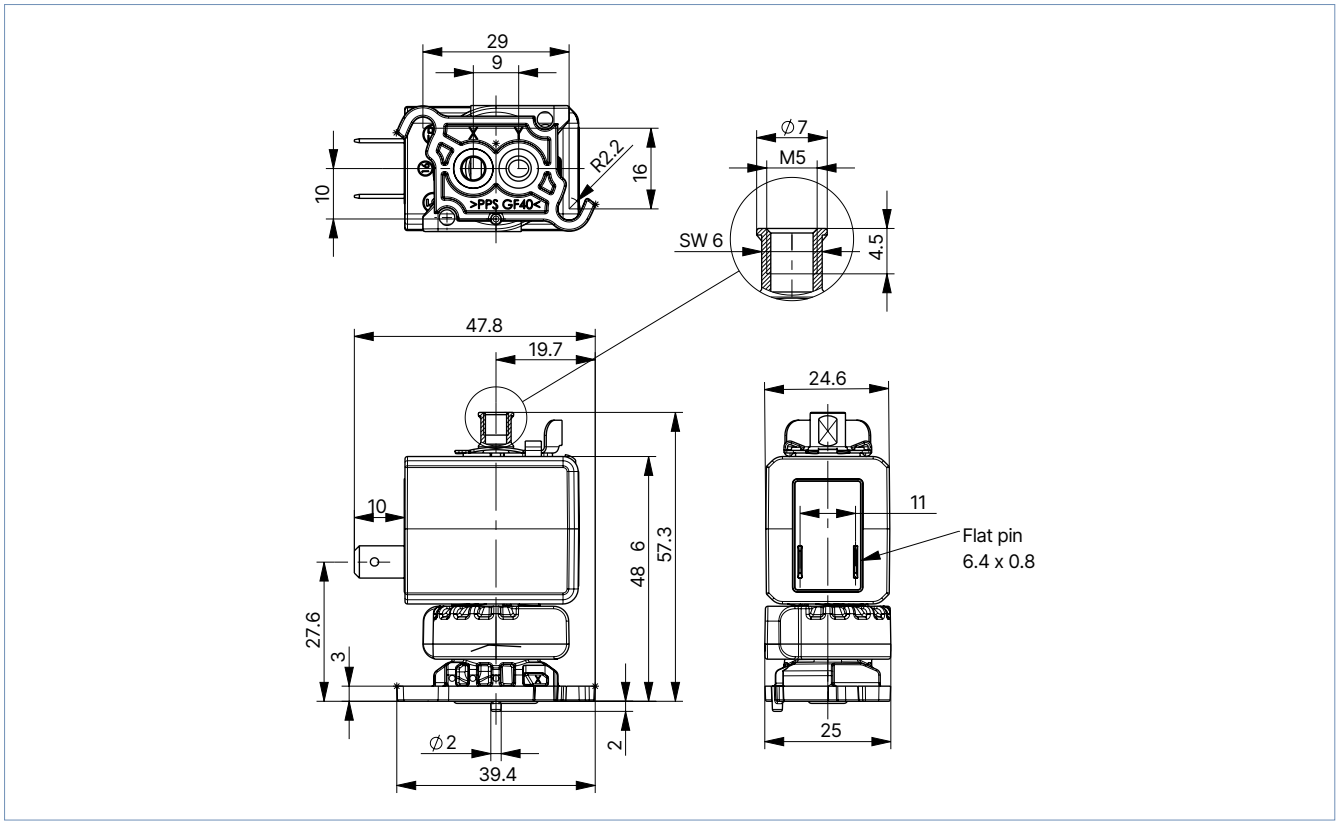
6. Dimensions

6.1. Flange variant

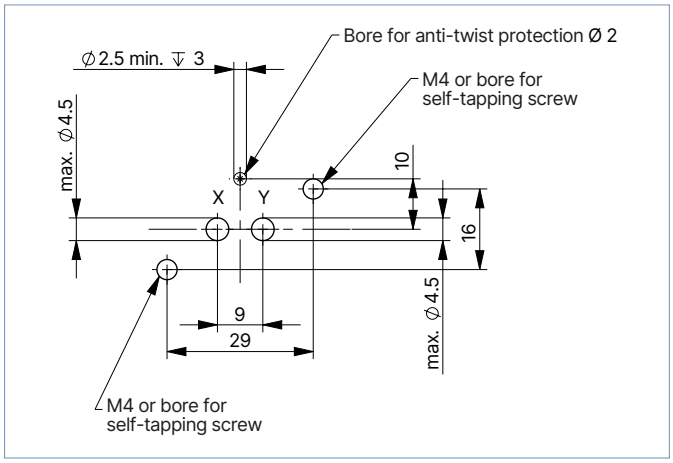
Note:

- Dimensions in mm
- The connections X and Y are marked on the housing.



6.2. Flange pattern

Note:
Dimensions in mm



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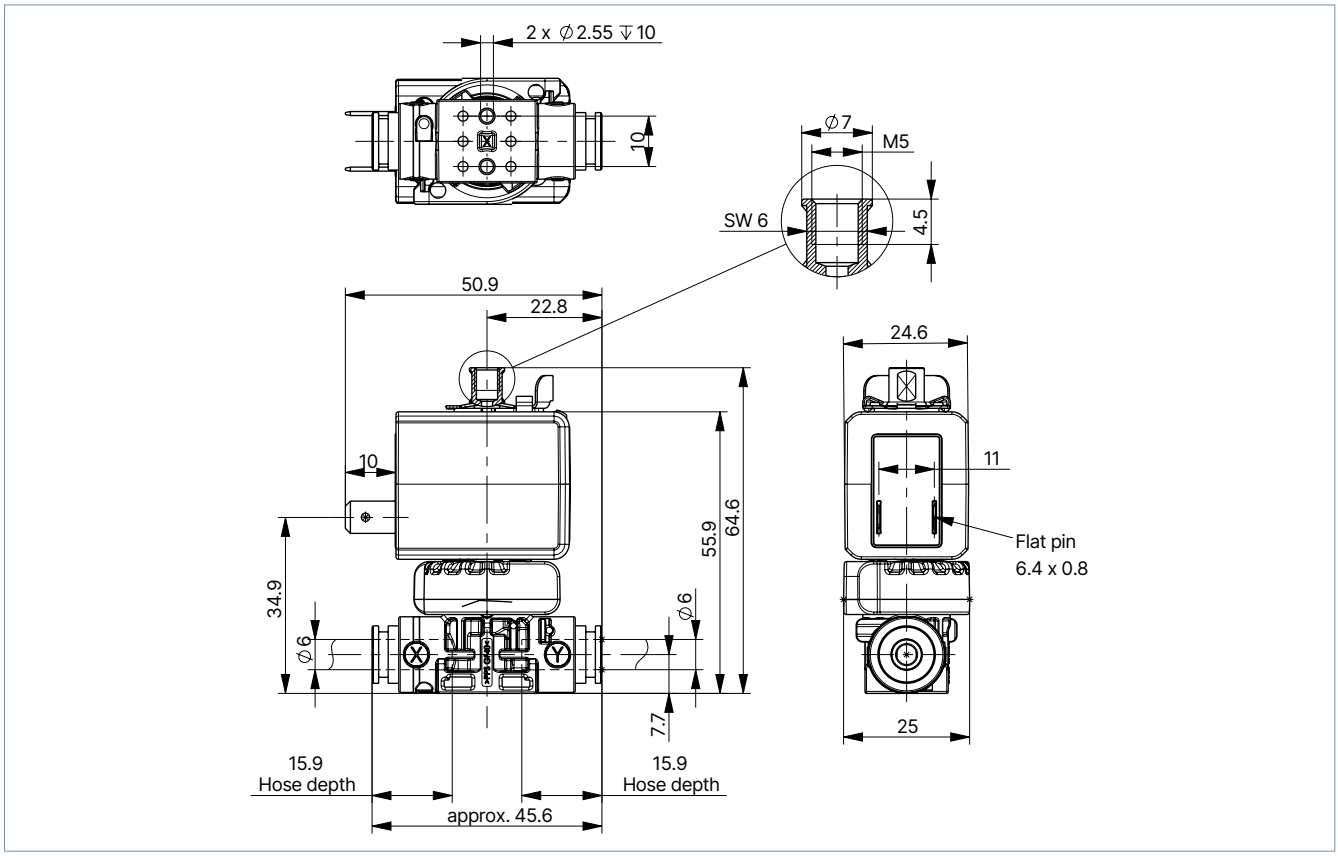
6.3. Push-in variant

Hose outer diameter 6 mm

Note:
Dimensions in mm



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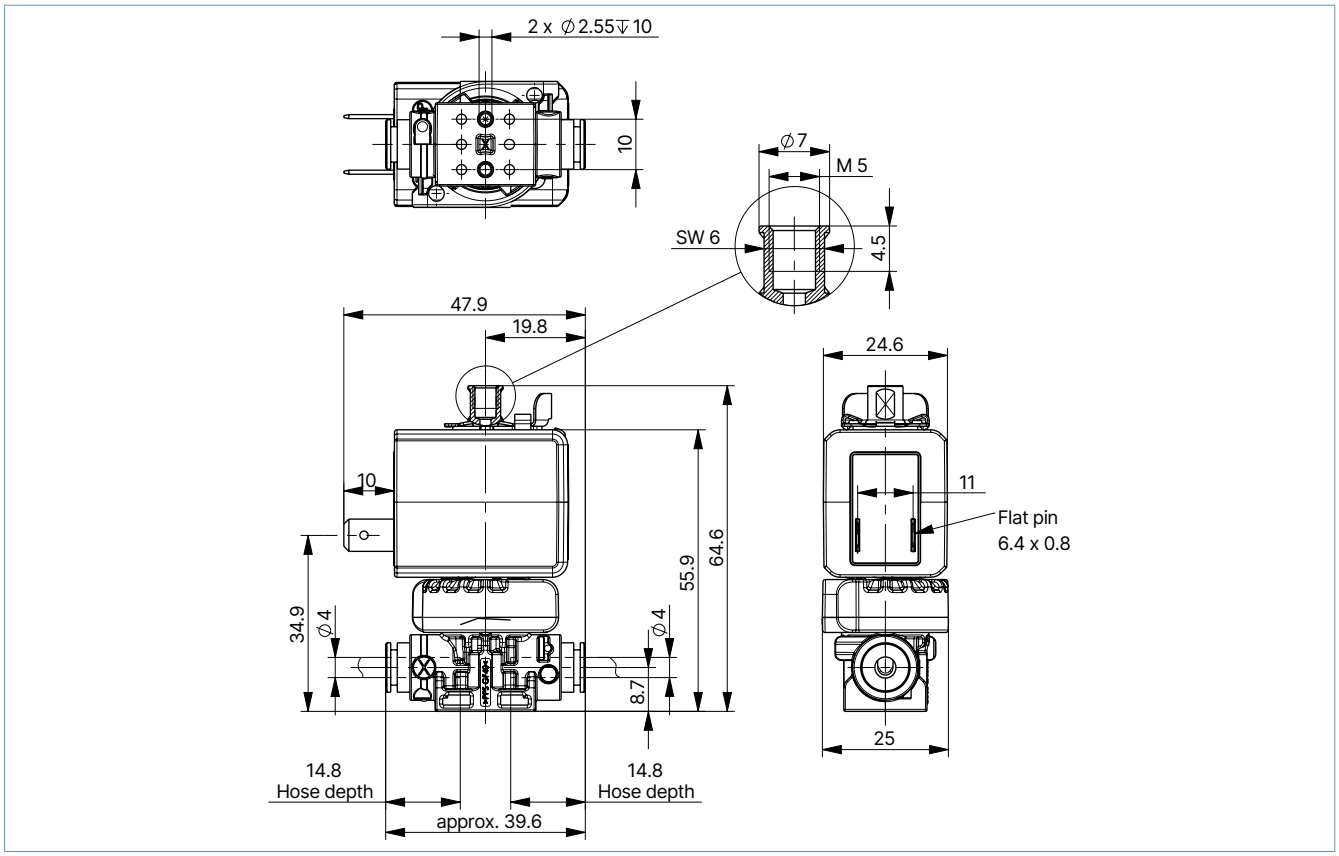
Hose outer diameter 4 mm

Note:
Dimensions in mm



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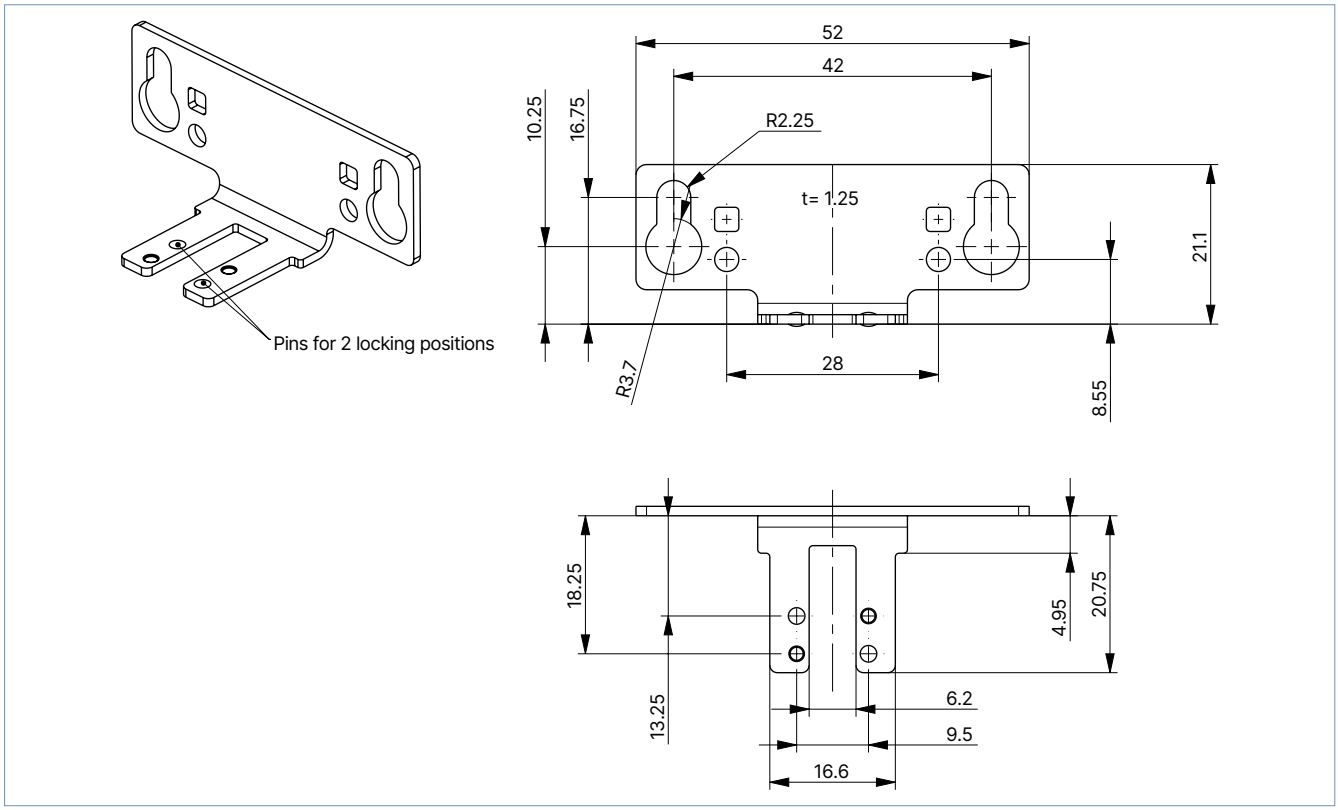
6.4. Mounting bracket (Quick-Clip)

Note:
Dimensions in mm



7. Product connections

7.1. Port connection

Pin assignment

The Type 7016 valve is supplied with circuit function A (standard) with flow below seat. This connection is designated as the pressure input (NC) and is marked with Y. The exhaust (NO) is located at the stopper (M5 connection). The pin assignment can also be found on the type label with "Y=Inlet".

8. Performance specifications

8.1. Power consumption

Standard variant with flat pin terminal, coil size 24.5 mm

Coil	Orifice		Electrical power consumption		Switching times [1.]	
	Pressure input (NC)	Ventilation (NO)	DC		Opening	Closing
	[mm]	[mm]	Cold [W]	Warm [W]	[ms]	[ms]
24 V / DC / 7 W	1.6	1.2	7	5.5	8...15	15...20
	2.0					
	2.7					

1.) Measurement at + 20 °C, nominal pressure [2.] at the valve outlet acc. to DIN ISO 12238:2001, opening: pressure build-up 0...10 %, closing: pressure reduction 100...90 %
2.) Pressure data: overpressure to atmospheric pressure and air as a medium

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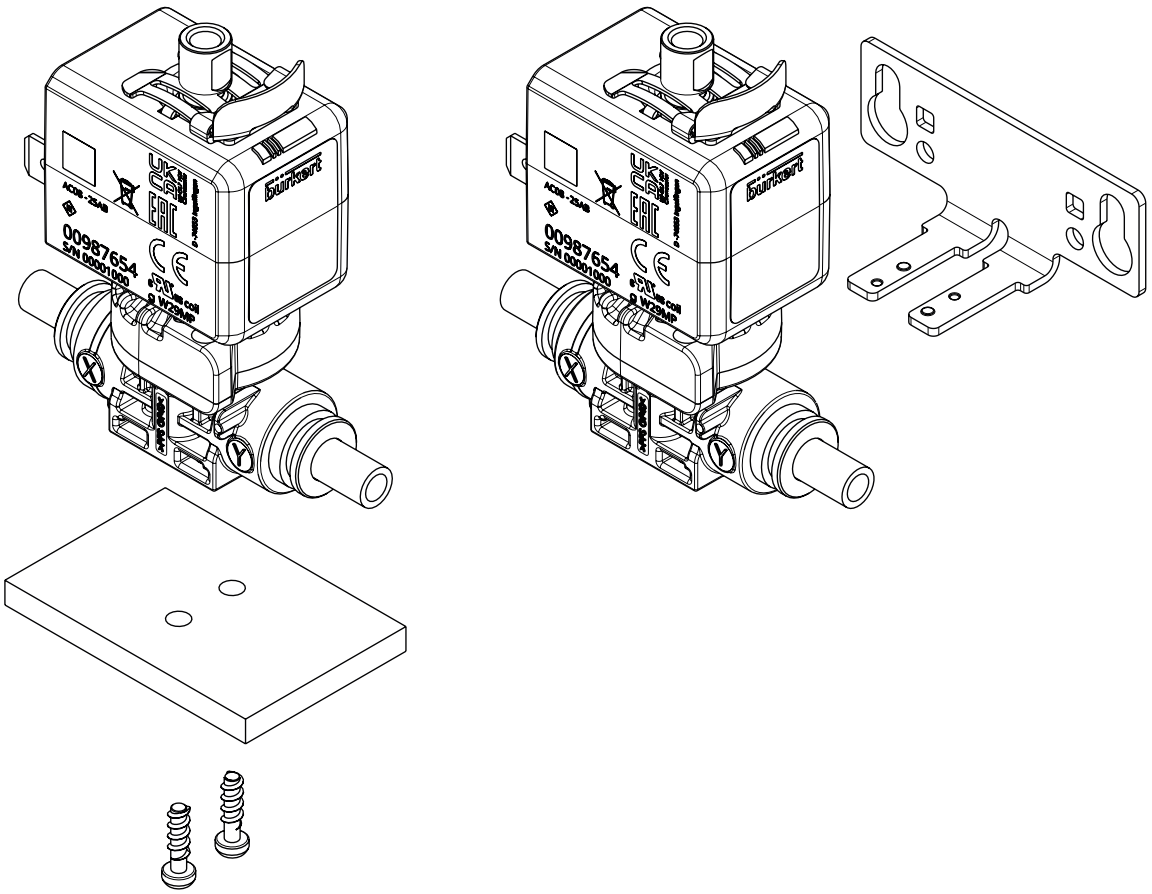
9. Product installation

9.1. Mounting options

The push-in variant can be fixed with self-tapping screws or with the mounting bracket (Quick-Clip).



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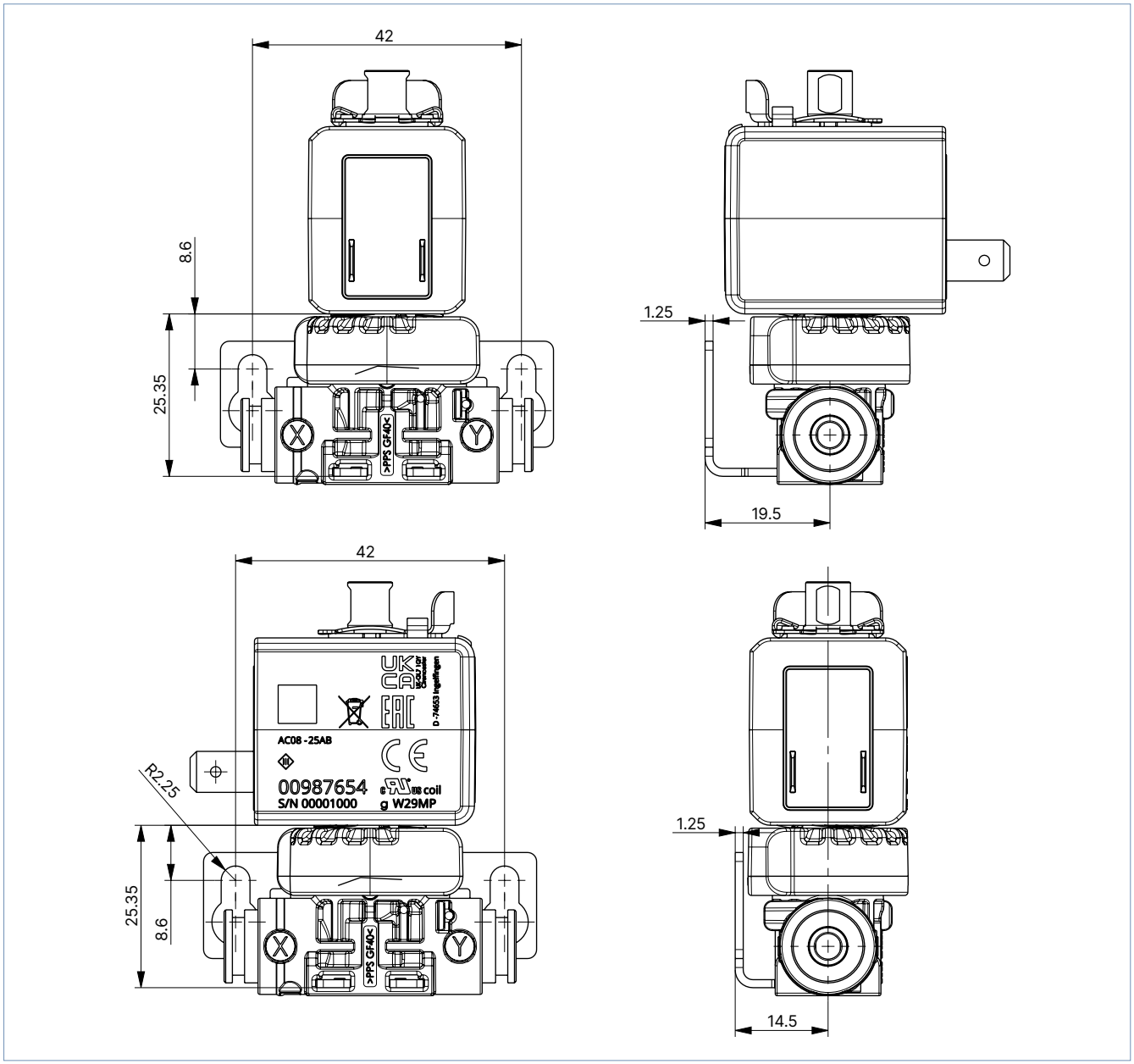
9.2. Installation dimensions Quick-Clip

Note:
Dimensions in mm



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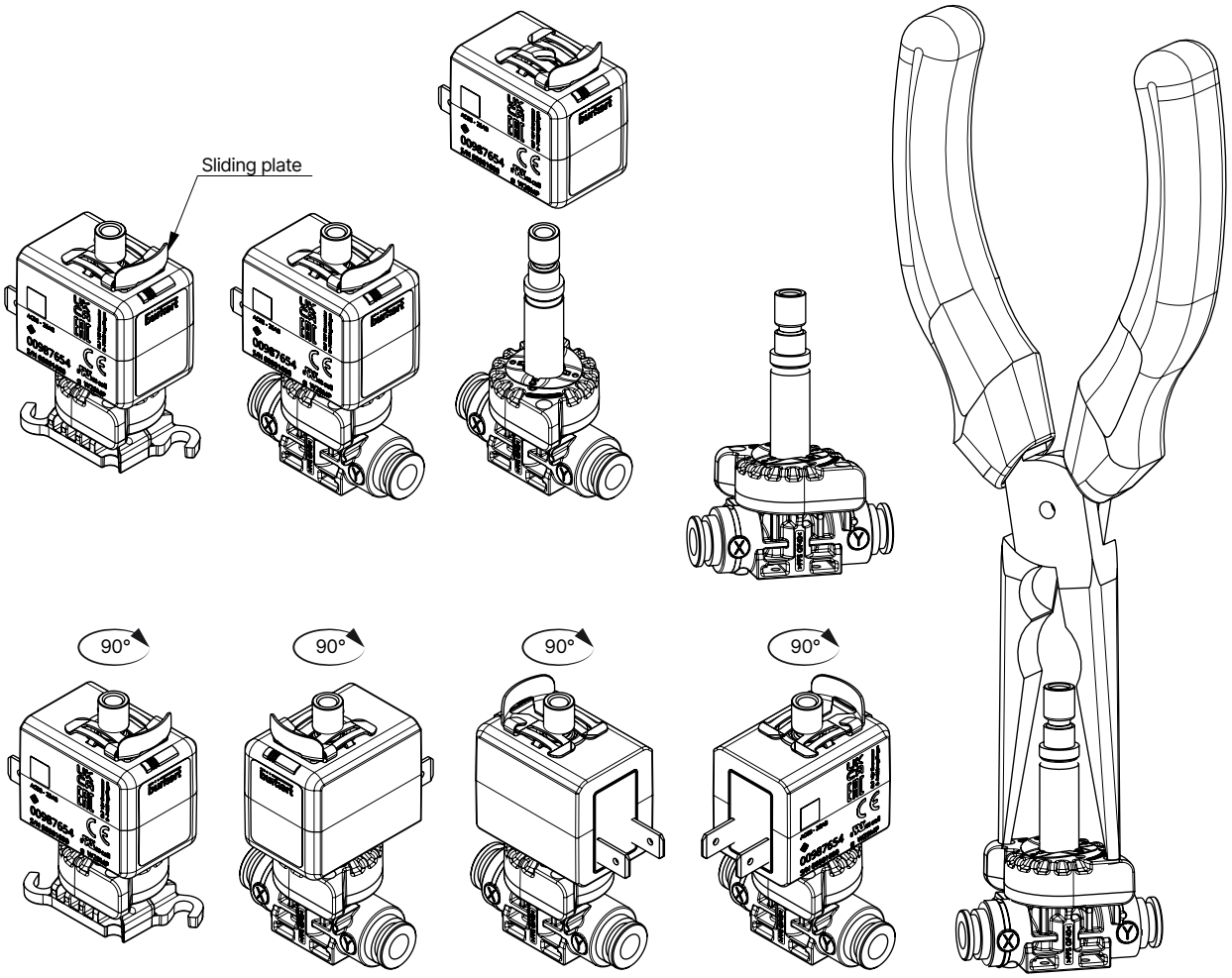
10. Product design and assembly

10.1. Product features

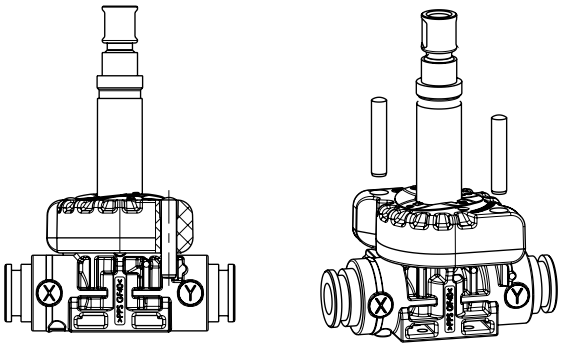
Orientation of the coil

By loosening the sliding plate, the solenoid coil can be removed and, if necessary, the orientation of the solenoid coil can be changed.



Locking pin

By means of a parallel pin with a diameter of 3 mm and a length of 16...18 mm (not included in the scope of delivery), the union nut can be additionally fixed in the closed position.



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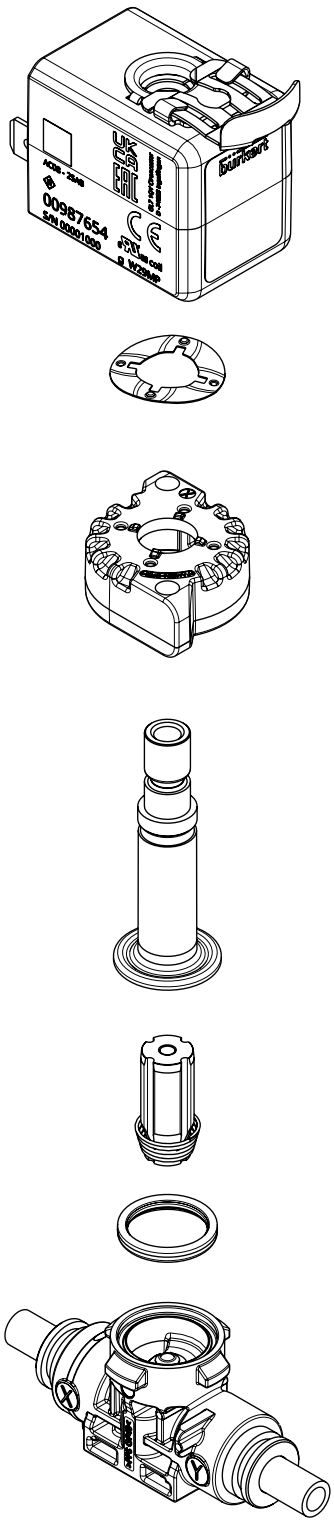
Replacement of the core

By opening the bayonet catch, the solenoid valve can be separated from the valve body. In this state, the core with the seat seal can be inspected and easily replaced if necessary.



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11. Ordering information

11.1. Bürkert eShop

Bürkert eShop – Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

Order online now

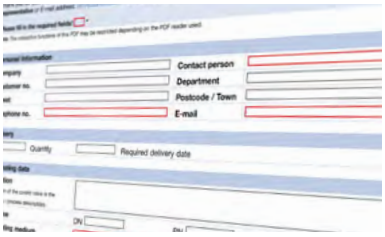
11.2. Bürkert product filter

Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements?
Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

11.3. Bürkert Product Enquiry Form



Bürkert Product Enquiry Form – Your enquiry quickly and compactly

Would you like to make a specific product enquiry based on your technical requirements? Use our Product Enquiry Form for this purpose. There you will find all the relevant information for your Bürkert contact. This will enable us to provide you with the best possible advice.

Fill out the form now

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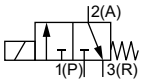
11.4. Ordering chart

Standard variant with flat pin terminal, coil size 24.5 mm

Note:

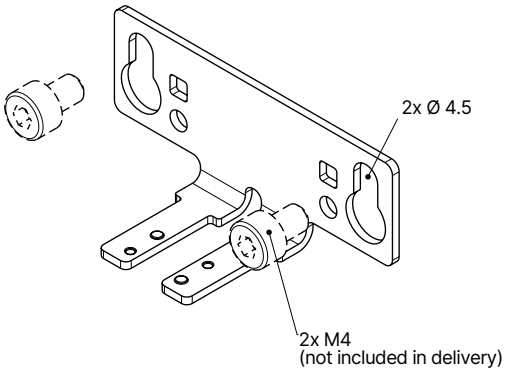
- All valves are delivered without a cable plug.
- The K_V value for the nominal vent size (NO) is 0.045 m^3/h for all articles.
- The Q_{Nn} value for the nominal vent size (NO) is 49 l/min for all articles.
- All valves have PPS as housing material.
- For all valves, the maximum duty cycle is 100 % continuous operation.

Circuit function	Port connection	Orifice		Q_{Nn} value air 1.)	K_V value water 2.)	Voltage/ Frequency	Medium pressure max.	Seal material	Article no.
		Pressure input (NC)	Ventilation (NO)				Ambient temperature + 65 °C		
							Water		
		[mm]	[mm]	[l/min]	[m^3/h]	[V/Hz]	[bar]		
CF C 3/2-way solenoid valve Direct-acting Normally closed 	Bürkert flange	1.6	1.2	70	0.065	024 / DC / 7	14	FKM	20043170
		2.0		108	0.100		10		20026394
		2.7		168	0.155		3		20043171
	Push-in 6/4 mm	1.6		65	0.060		14		20043172
		2.0		97	0.090		10		20025852
		2.7		152	0.140		3		20043173
	Push-in 4/2 mm	1.6		49	0.045		14		20043174

1.) Measurement at + 20 °C, 6 bar at the valve outlet and 1 bar pressure difference
2.) Measurement at + 20 °C, 1 bar at the valve inlet and free outlet

11.5. Ordering chart accessories

Mounting bracket (Quick-Clip)

Description	Packaging unit	Article no.
	10 pcs.	20042946
	100 pcs.	20042945

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