DATA SHEET

Type 0121

bürkert
FLUID CONTROL SYSTEMS

Direct-acting 2/2 or 3/2-way pivoted armature valve

- Direct-acting, media-separated valve up to DN 8
- Maintenance-free pivoted armature technology
- Vibration-proof, block screwed coil system
- Service-friendly, robust manual override
- Explosion-proof variants

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

Can be combined with

Type 1087 ▸
Timer

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

Type description

The 0121 valve is a direct-acting, media separated pivoted armature valve. It is available as a 2/2 and 3/2-way variant. As a 3/2-way variant, it can be used as a distributor or mixing valve. Various diaphragm materials and circuit functions are available depending on the actual application. The range of bodies includes stainless steel (316L), PTFE and PVC versions. The solenoid coils are moulded with a chemically resistant epoxy. Since the coil system is separated from the medium by a diaphragm, the valve is especially suitable for critical media such as aggressive acids and lyes. The 0121 is equipped with manual override for start-up and testing. To reduce energy demands, all the coils can be delivered with electronic power reduction or as an impulse variant. The switching status can be indicated via position feedback as a binary or NAMUR signal. In combination with a plug to DIN EN 175301-803 Form A, the valves satisfy degree of protection IP65/67 – and NEMA 4X when combined with a stainless steel or plastic valve body.

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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 6.
Materials	
Seal	FKM FFKM EPDM
Body	PTFE PVC (resistant acc. to DIN 8062, 8061) PP (polypropylene) PVDF Stainless steel 1.4401
Weight	
Standard version	With VA: 0.9 kg With PVDF, PP and PVC: 0.38 kg With PTFE: 0.5 kg
Explosion proofed version	With VA: 1.15 kg With PVDF, PP and PVC: 0.62 kg With PTFE: 0.75 kg
Orifice	DN 2.0…DN 8.0 FFKM only possible up to DN 6.0
Thermal insulation class of solenoid coil	H
Performance data	
Duty cycle	
With VA	100 %
With PVDF, PP and PTFE	40 % duty cycle (60 % intermittent operation) in 10 min at 8 W-version 100 % duty cycle for 5 W-version or high-capacity electronic
With PVC	10 % duty cycle (10 min) 100 % duty cycle for version with high-capacity electronic
Switching frequency	
Standard version	Max. 100/min with AC Max. 10/min for UC (high-capacity electronic)
Explosion proofed version	Medium temperature up to +70 °C: max. 20/min Medium temperature up to +90 °C: max. 5/min
Response times[1.] standard version	
Frequency AC	Opening: 20 ms Closing: 11 ms
Frequency DC	Opening: 11 ms Closing: 8 ms
Response times[1.] explosion proofed version	
Orifice 2…8	Opening: 30 ms Closing: 40 ms
Circuit functions	A, B, C, D, E, F, T (see "2. Circuit functions" on page 5)
Electrical data	
Voltage tolerance	±10 %
Power consumption standard	
Frequency AC	Inrush: 30 VA Hold: 15 VA Hold: 8 W
Frequency DC	Cold: 11 W Warm: 8 W
Power consumption explosion proof version	
Frequency AC/DC	Inrush: 40 W Hold: 3 W

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Voltages	
Standard version	24 V 50 Hz, 110 V 50 Hz, 230 V 50 Hz, 120 V 60 Hz, 240 V 60 Hz, 12 V DC, 24 V DC, (Further voltages on request)
Explosion proofed version	24 V, 230 V (further voltages on request)
Safety fuse (explosion proofed version)	Appropriate inrush current (see "8.3. Ordering chart" on page 12)
Medium data	
Viscosity	Max. 37 mm^2/s
Operating medium	
With FKM	Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases
With FFKM	Aggressive fluids, hot air, hot oils, aromatics, ether, esther, ketones
With EPDM	Alkalis, acids up to medium concentration, alkaline washing- and bleaching lyes
All Materials	For more detailed information please consult the resistance chart, see "3.1. Chemical Resistance Chart – Bürkert resistApp" on page 5
Medium temperature standard version	
With PVDF or PP	EPDM: -30 °C...+70 °C FKM: -10 °C...+70 °C FFKM: -10 °C...+70 °C
With PTFE or VA	EPDM: -30 °C...+90 °C FKM: -10 °C...+90 °C FFKM: -10 °C...+90 °C
With PVC	EPDM: -30 °C...+50 °C FKM: -10 °C...+50 °C FFKM: -10 °C...+50 °C
Medium temperature explosion proofed version	
With PVDF or PP	EPDM: -20 °C...+70 °C FKM: -10 °C...+70 °C FFKM: -10 °C...+70 °C
With PTFE or VA	EPDM: -20 °C...+90 °C FKM: -10 °C...+90 °C FFKM: -10 °C...+90 °C
With PVC	EPDM: -20 °C...+50 °C FKM: -10 °C...+50 °C FFKM: -10 °C...+50 °C
Approvals and certificates	
Standard version	
Protection class	IP65 with cable plug
Explosion proofed version	
Protection class	IP65
Type of protection	II 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130° Db
Certificate	EPS 16 ATEX 1 111 X IECEx EPS 16.0049X
Product connections	
Electrical connection	
Standard version	Tag connector acc. to DIN EN 175301-803 Form A for cable plug type 2518/2509 (on request also with injected cable or terminal box)
Explosion proofed version	Impressed cable (HO5RN-F3G, 3 x 0.75 mm^2) Terminal box without safety fuse (Information about ACP016 see operating manual)
Environment and installation	
Installation	As required, preferably with actuator upright
Ambient temperature (max.)	+50 °C

1.) Response times: Measurement at the valve output 6 bar and +20 °C, opening: pressure rise 0 to 90 %, closing: pressure drops 100 to 10 %

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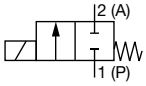
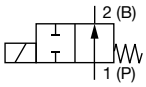
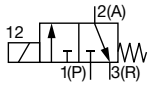
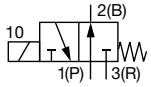
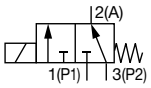
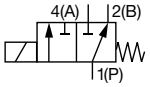
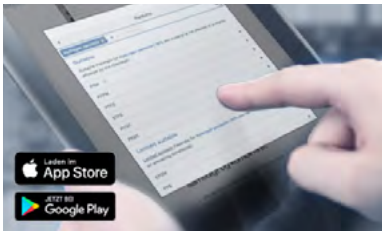
2. Circuit functions

Circuit functions	Description
	**Type: A, solenoid valve** 2/2 way Direct-acting Normally closed
	**Type: B, solenoid valve** 2/2 way Direct-acting Normally opened
	**Type: C, solenoid valve** 3/2 way Direct-acting Normally closed
	**Type: D, solenoid valve** 3/2 way Direct-acting Normally opened
	**Type: E, mixing valve (solenoid valve)** 3/2 way
	**Type: F, distribution valve (solenoid valve)** 3/2 way Direct-acting

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

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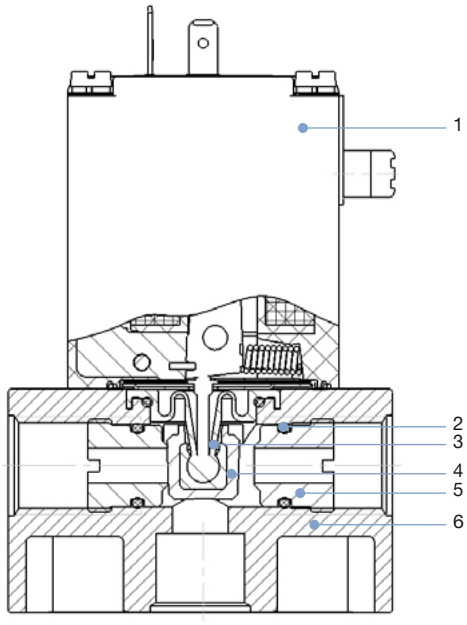
3.2. Material specifications

Note:
This sectional drawing shows the standard version with PVC housing and FKM seal.

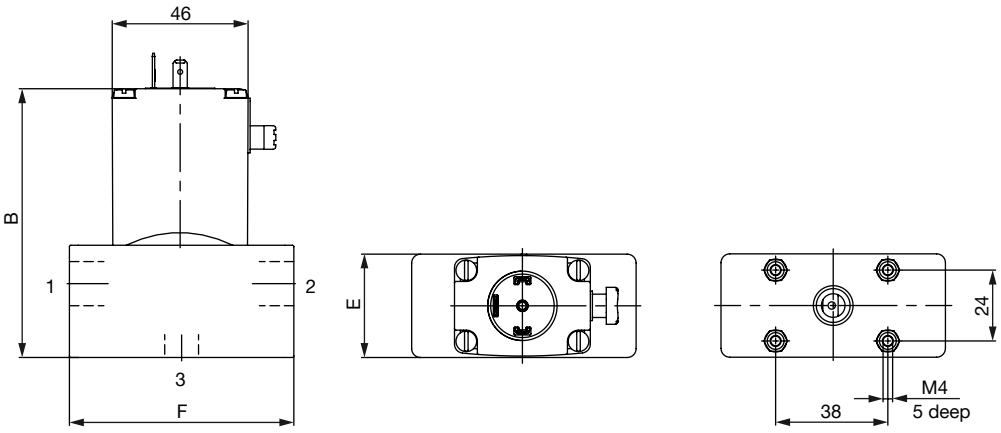


No.	Element	Material
1	Coil	Epoxy
2	O-ring	FKM, FFKM, EPDM
3	Toggle pin	PTFE
4	Seal	FKM, FFKM, EPDM
5	Seat	PTFE PVC (resistant acc. to DIN 8062, 8061) PP (polypropylene) PVDF Stainless steel 1.4401
6	Valve body	PTFE PVC (resistant acc. to DIN 8062, 8061) PP (polypropylene) PVDF Stainless steel 1.4401

4. Dimensions

4.1. Standard version

Note:
Dimensions in mm



Body material	D	B	E	F
Stainless steel	G ¼	89	32	76
PVC	G ⅜	91	35	65
PP	G ⅜	91	35	65
PVDF	G ⅜	91	35	70
PTFE	G ⅜	91	35	76

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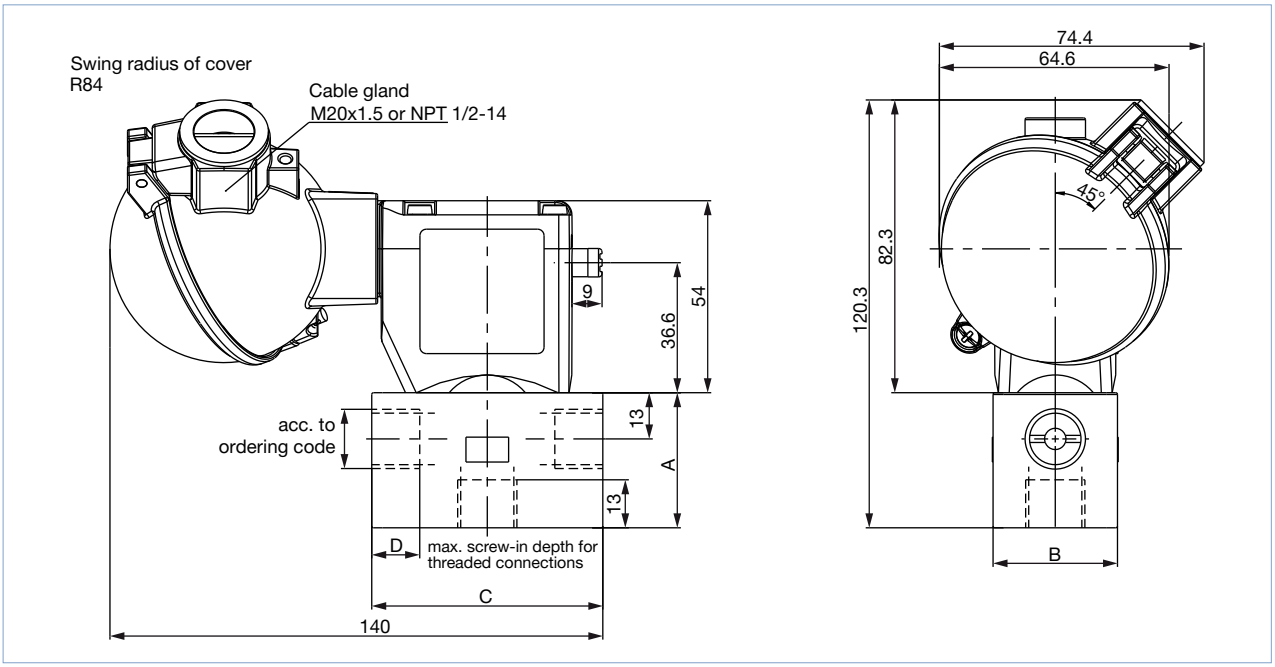
4.2. Explosion proofed version

Terminal box version

Note:

- Dimensions in mm
- Attaching device: M4 x 5 holes on the bottom of the housing on the hole pattern 38 x 24 mm

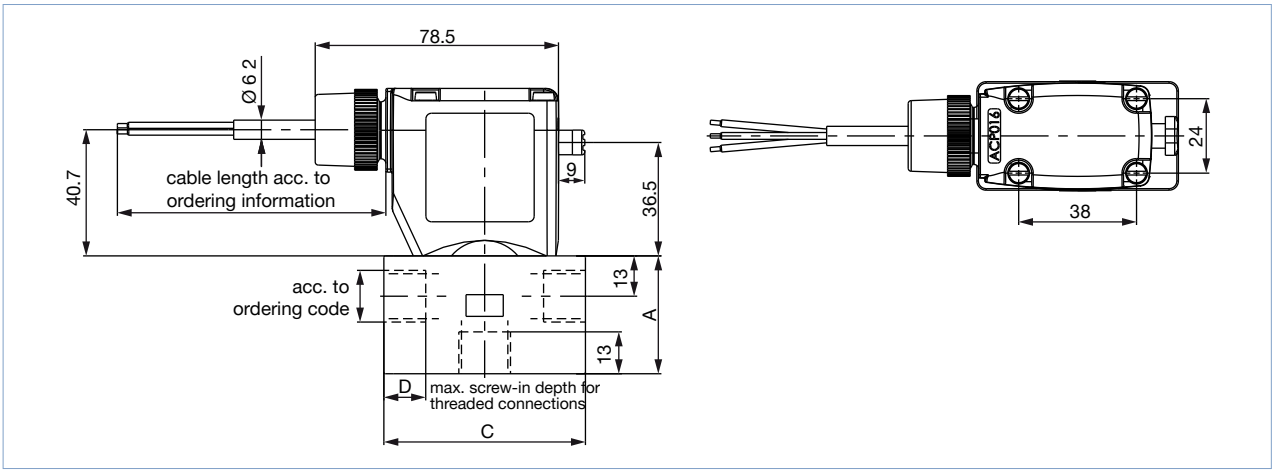


Body material	A	B	C	D
Stainless steel	36	32	76	19.5
PVC	38	35	65	17
PP	38	35	65	17
PVDF	38	35	70	19.5
PTFE	38	35	76	22.5

Cable version

Note:

- Dimensions in mm
- Attaching device: M4 x 5 holes on the bottom of the housing on the hole pattern 38 x 24 mm

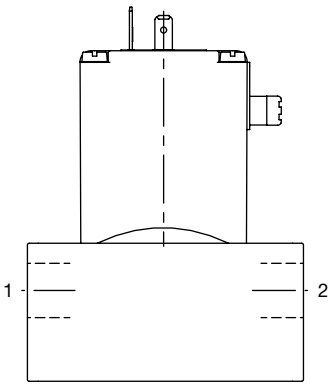
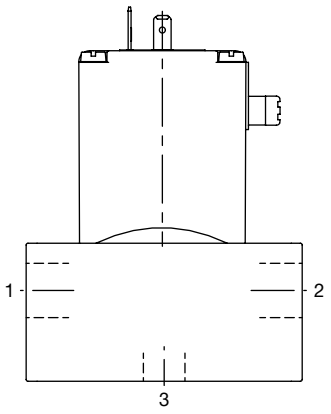


Body material	A	C	D
Stainless steel	36	76	19.5
PVC	38	65	17
PP	38	65	17
PVDF	38	70	19.5
PTFE	38	76	22.5

5. Device/Process connections

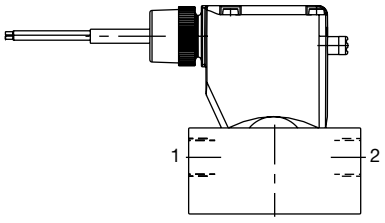
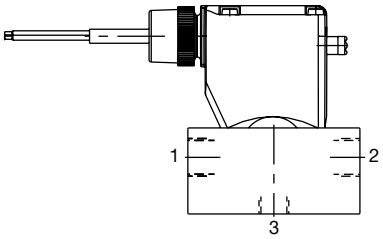
5.1. PIN assignment standard version

Note:
The pin assignment (marked No. 1, 2 and 3 in the drawing) depends on the circuit function. In the table, compare the respective pin assignment with the corresponding circuit function.

Circuit function	Connection 1	Connection 2	Connection 3	2 way	3 way
A	A	P	–		
B	P	B	–		
C	P	R	A		
D	R	P	B		
E	P1	P2	A		
F	A	B	P		

5.2. PIN assignment explosion proof version

Note:
The pin assignment (marked No. 1, 2 and 3 in the drawing) depends on the circuit function. In the table, compare the respective pin assignment with the corresponding circuit function.

Circuit function	Connection 1	Connection 2	Connection 3	2 way	3 way
A	A	P	–		
B	P	B	–		
C	P	R	A		
D	R	P	B		
E	P1	P2	A		
F	A	B	P		

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6. Performance specifications

6.1. Pressure range and flow rate

Standard version

Circuit function	DN	K_v value water	Pressure range[1.] [bar]	
		[m³/h]	Frequency AC[2.] (50 or 60 Hz)	Frequency DC[2.]
A / F	2	0.1	0…6	0…3
	4	0.3[3.]	0…4	0…2
	6	0.6[4.]	0…2	0…1
	8	1.0	0…1	0…0.8
C / D	2	0.1	0…3	0…1.5
	4	0.3[3.]	0…2	0…1
	6	0.6[4.]	0…1	0…0.5
	8	1.0	0…0.3	0…0.3
B	2	0.1	0…6	0…3
	4	0.3[3.]	0…4	0…2
	6	0.6[4.]	0…2	0…1
	8	1.0	0…1	0…0.5
E	2	0.1	0…3	0…1.5
	4	0.3[3.]	0…2	0…1
	6	0.6[4.]	0…1	0…0.5
	8	1.0	0…0.2	0…0.2

1.) Pressure data: Measured as overpressure to the atmospheric pressure (deviating pressure range for 5 W version)

2.) Heat output 8 W

3.) Nominal size 4 mm and seal material FKM resp. FFKM K_v value reduces to 0.24 m³/h

4.) Nominal size 6 mm and seal material FKM resp. FFKM K_v value reduces to 0.48 m³/h

Explosion proofed version

Circuit function	DN	K_v value water[1.]	Pressure range[2.]
		[m³/h]	[bar]
A / F	2	0.1	0…6
	4	0.3[3.]	0…4
	6	0.6[4.]	0…2
	8	1.0	0…1
C / D	2	0.1	0…3
	4	0.3[3.]	0…2
	6	0.6[4.]	0…1
	8	1.0	0…0.3
B	2	0.1	0…6
	4	0.3[3.]	0…4
	6	0.6[4.]	0…2
	8	1.0	0…1
E	2	0.1	0…3
	4	0.3[3.]	0…2
	6	0.6[4.]	0…1
	8	1.0	0…0.2

1.) Measured at +20 °C, 1 bar pressure at valve inlet and free outlet

2.) Pressure data: Measured as overpressure to the atmospheric pressure

3.) Nominal size 4 mm and seal material FKM resp. FFKM K_v value reduces to 0.24 m³/h

4.) Nominal size 6 mm and seal material FKM resp. FFKM K_v value reduces to 0.48 m³/h

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7. Product accessories

7.1. Accessory

Standard version

Option	Variable code	Specifications
Oxygen versions	NL02	Suitable for application with oxygen (non-metallic materials in contact with medium are BAM-proofed)
Higher purity requirements e.g. oil-, grease- and silicon free	NL05	Parts in contact with the medium are specially cleaned and the valves appropriate packed
Electrical feedback	LF03	See **Type 1060** ▶. Function as opener, closer or toggle switch depending on the connection (no IP65 achievable)
High-capacity electronic	CZ05	Inrush power 60 W, holding current 3 W; with plastic version 100 % duty cycle feasible
Vacuum version	NA02	Suitable for vacuum up to -0.98 bar
Improved purity and tightness requirements	NA03	Parts in contact with the medium are specially cleaned and the leak test to 10…4 mbar x l / sec
Coil with reduced performance (5 W)	–	Deviced have smaller pressure rangen; for plastic version 100 % duty cycle is achievable
Cable plug	JHxx/JGxx/JFxx	Cable plug is part of the delivery. Cable plug versions (acc. to DIN EN 175301-803 Form A), see separate datasheet **Type 2518** ▶ and **Type 2509** ▶
Approvals	PD02	UR (UL-recognized)/CSA approval
	PE95	UL (UL-listed) approval
	PR05	cFMus approved coil Class I, Division 1, Groups A, B, C and D - T4 Class II, Division 1, Groups E, F and G - T4 Class III, Division 1 - T4 Class I, Zone 1, AEx mb IIC T4 Gb, Zone 21 AEx mb IIIC T130 C Db Ex mb IIC T4 Gb; Ex mb IIIC T130 C Db
	PU15	UL listed for Hazardous Locations for USA and Canada, Class I, Zone 1, AEx eb mb IIC T4; Zone 21, AEx mb tb IIIC T130 °C / Class I, Div 2, Group A,B,C,D; Class II+III, Div 2, Group F,G
	PX41	EPS 16 ATEX 1111 X / IECEx EPS 16.0049X, 2G T4 IIC / 2D T130 °C IIIC, Tamb -40 °C bis +60 °C, single and block mounting
Possible conformity (depending on construction)	–	EAC; Drinking water; FDA

Explosion proofed version

Option	Variable code	Specifications
Oxygen versions	NL02	Suitable for applications with oxygen (non-metallic materials in contact with medium are BAM-proofed)
Higher purity requirements e.g. oil-, grease- and silicon free	NL05	Parts in contact with the medium are specially cleaned and the valves appropriate packed
Vacuum version	NA02	Suitable for vacuum up to -0.98 bar
Improved purity and tightness requirements	NA03	Parts in contact with the medium are specially cleaned and the leak test to 10…4 mbar x l / sec

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