





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

- Direct-acting, media-separated valve up to DN 4
- Pilot valve with Bürkert-specific flange variant (SFB)
- Maintenance-free pivoted armature technology
- 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 2518 Cable Plug DIN EN 175301 - 803 - Form A	▶
	Type 1087 Timer	▶

Type description

The 0331 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 standard brass body meets all European drinking water requirements. Stainless steel (316L), PVDF, and polypropylene bodies complete the offering. 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 0331 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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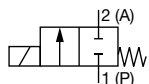
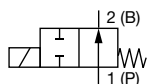
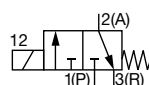
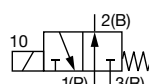
1. General Technical Data

Product properties	
Dimensions	Detailed information can be found in chapter "4. Dimensions" on page 6.
Material	
Seal	EDPM / FKM / FFKM / NBR
Body	Brass Stainless steel (1.4401) PP (Polypropylene) PVDF (Polyvinylidene fluoride) PEEK
Material resistance	More detailed information can be found in our resistance table, "3.1. Chemical Resistance Chart – Bürkert resistApp" on page 5.
Weight	Metal body 0.47 kg Plastic body 0.40 kg
Nominal diameter	DN 2...DN 4
Thermal insulation class of solenoid coil	H
Performance data	
Duty cycle	
With brass and stainless steel	100 %
With PP and PVDF	40 % duty cycle (60 % intermittent operation) in 30 min for 8 W version 100 % duty cycle for 5 W version
With PEEK	60 % duty cycle (40 % intermittent operation) in 30 min for 8 W version
Max. cycling rate (explosion proof version)	Medium temperature up to +70 °C: 20/min Medium temperature up to +90 °C: 5/min
Switching times¹⁾ standard version	
Frequency AC	Opening: 8...15 ms Closing: 8...15 ms
Frequency DC	Opening: 10...20 ms Closing: 10...20 ms
Switching times¹⁾ explosion proof version	
Orifices 2...4	Opening: 30 ms Closing: 40 ms
Electrical data	
Voltage tolerance	± 10 %
Block mounting	Use reduced duty cycle or 5 W coil
Power consumption standard	
Frequency AC	Inrush: 30 VA Hold: 15 VA Hold: 8 W
Frequency DC	Cold: 11 W Warm: 8 W
Power consumption Impulse (inrush winding)	
Frequency AC	Hold: 20 VA Hold: 11 W
Frequency DC	Cold: 11 W Warm: 8 W
Power consumption explosion proof version	
Frequency AC/DC	Inrush: 40 W Hold: 3 W
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 proof version	24 V, 230 V (further voltages on request)

Medium data	
Viscosity	Max. 37 mm ² /s
Operating medium	
With NBR	Neutral mediums such as compressed air, town gas, water, hydraulic oil, oils and greases without additives, oxygen
With EPDM	Alkalis, acids to medium concentrations, alkaline washing and bleaching lyes
With FKM	Oxidizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen
With FFKM	Aggressive mediums, hot air, hot oils
Medium temperature	
With body material brass, stainless steel or PEEK	NBR: 0 °C...+80 °C EPDM: -30 °C...+90 °C FKM: 0 °C...+90 °C FFKM: +5 °C...+90 °C
With body material PP or PVDF	NBR: 0 °C...+80 °C EPDM: -30 °C...+80 °C FKM: 0 °C...+80 °C FFKM: +5 °C...+80 °C
Process/Port connection & communication	
Port connection	Flange interface acc. to Bürkert standard (see also chapter "4. Dimensions" on page 6)
Electrical connection	
Standard version	Tag connector acc. to DIN EN 175301 - 803 Form A for cable plug Type 2518/2509 (on request also with moulded cable or terminal box)
Explosion proof version	Moulded cable (for more detailed information, refer to the operating manual ACP016), terminal box without safety fuse
Approvals and certificates	
Standard version	
Degree of protection	IP65 with cable plug
Explosion proof version	
Degree of protection	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
Environment and installation	
Installation position	As required, preferably with actuator upright
Ambient temperature (max.)	
Standard version	+55 °C
Explosion proof version	+40 °C

1.) Measured at valve outlet at 6 bar and +20 °C. Opening: pressure rise 0...90%, closing: pressure drop 100...10%

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 open
	Type C, solenoid valve 3/2 way Direct-acting Normally closed
	Type D, solenoid valve 3/2 way Direct-acting Normally open

Circuit functions	Description
	Type: E, mixing valve (solenoid valve) 3/2 way
	Type: F, distribution valve (solenoid valve) 3/2 way Direct-acting
	Type: T, solenoid valve 3/2 way Direct-acting Flow direction optional

3. Materials

3.1. Chemical Resistance Chart – Bürkert resistApp

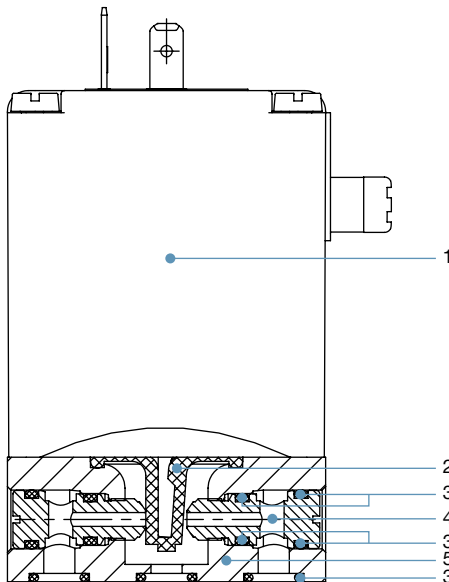


Bürkert resistApp – Chemical Resistance Chart

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



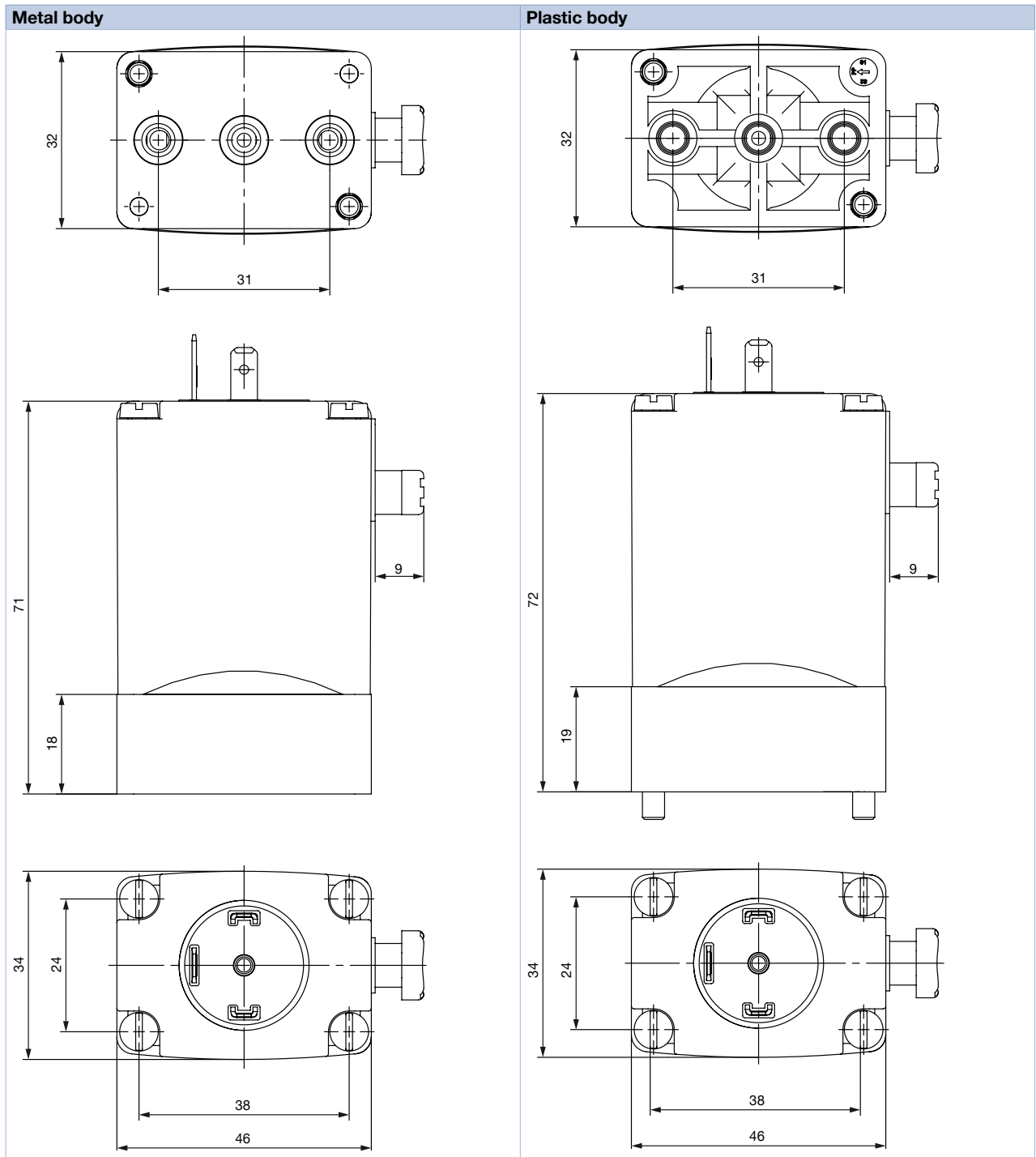
No.	Element	Material
1	Coil	Epoxy
2	Diaphragm	EDPM, FKM, FFKM, NBR
3	O-ring	EDPM, FKM, FFKM, NBR
4	Seat	Brass Stainless steel (1.4401) PP (Polypropylene) PVDF (Polyvinylidene fluoride) PEEK
5	Valve body	Brass Stainless steel (1.4401) PP (Polypropylene) PVDF (Polyvinylidene fluoride) PEEK

4. Dimensions

4.1. Standard version

Note:

- Dimensions in mm
- For the dimensions of the cable plug Type 2518, please refer to chapter "8.4. Ordering chart accessories" on page 15.



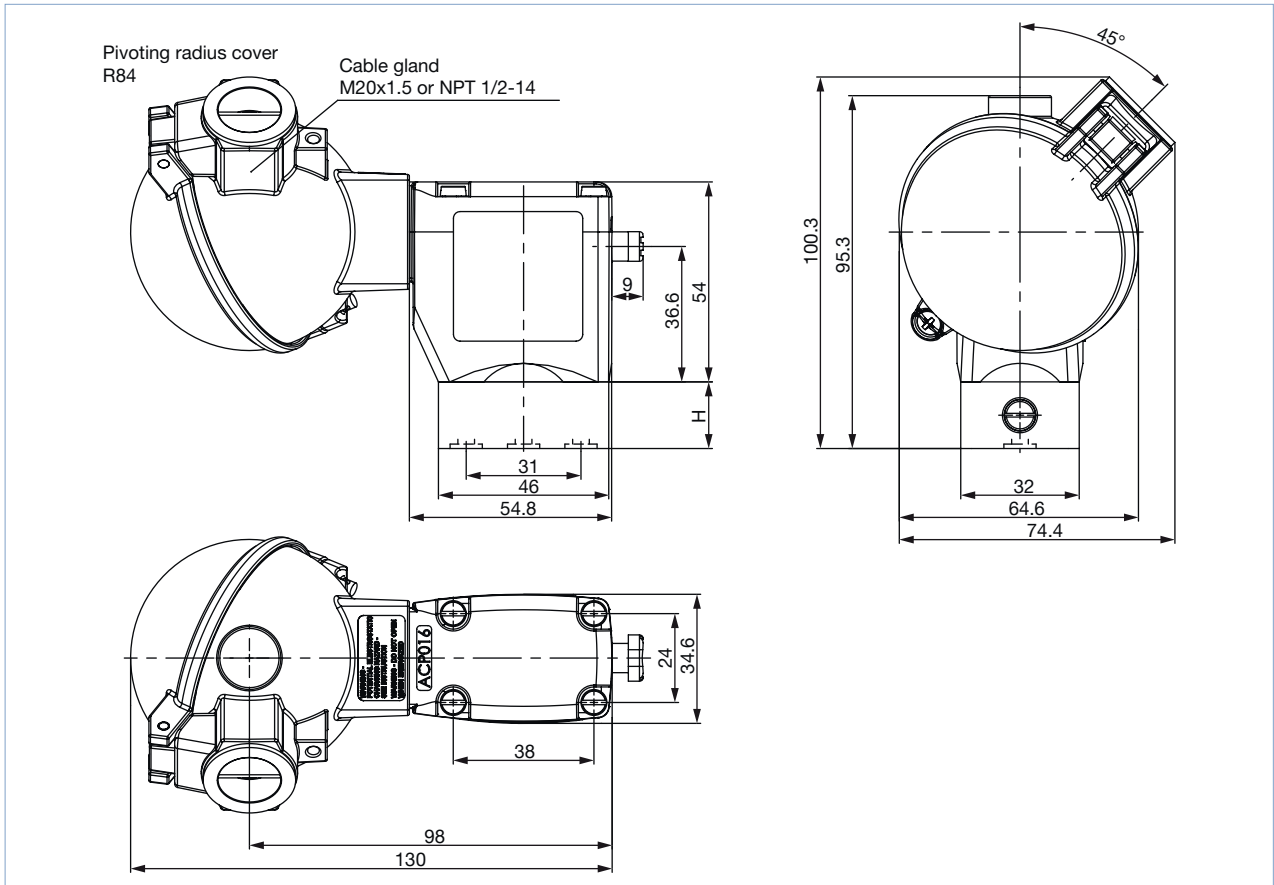
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4.2. Explosion proof version

Terminal box version

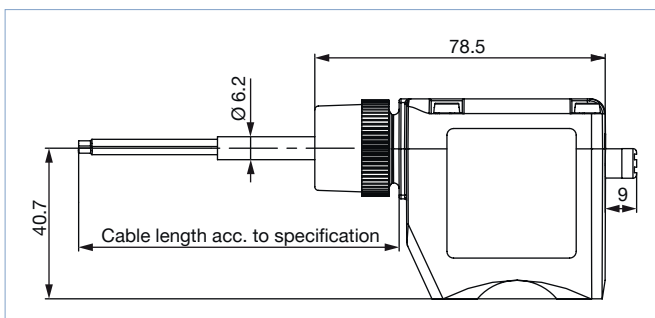
Note:

Dimensions in mm



Version	H
Brass/Stainless steel	18
PP/PD	19

Cable outlet version



5. Device/Process connections

5.1. PIN assignment standard version

Note:

The connections marked with 1, 2 and 3 are labelled in the drawing according to the circuit function table. In the table, compare the respective pin assignment with the corresponding circuit function.

Circuit function	Connection 1	Connection 2	Connection 3	3 way
A	P	A	-	
B	-	B	P	
C	P	A	R	
D	R	B	P	
E	P1	A	P2	
F	A	P	B	
T	NC	I _N /OUT	NO	

5.2. PIN assignment explosion proof version

Note:

The connections marked with 1, 2 and 3 are labelled in the drawing according to the circuit function table. In the table, compare the respective pin assignment with the corresponding circuit function.

Circuit function	Connec- tion 1	Connec- tion 2	Connec- tion 3	3 way
A	P	A	-	
B	-	B	P	
C	P	A	R	
D	R	B	P	
E	P1	A	P2	
F	A	P	B	
T	NC	I _N /OUT	NO	

6. Performance specifications

6.1. Pressure range and flow rate

Standard version

Circuit function	DN	K _v value water		Pressure range ^{1.)}		
		DC	AC (50 or 60 Hz)	Standard ^{2.)}	Vacuum ^{3.)}	Impulse ^{4.)}
		[m ³ /h]	[m ³ /h]	[bar]	[bar]	[bar]
Brass, stainless steel or PEEK body						
A / B / C / D / F	2.0	0.08	0.10	0...16 ^{5.)}	-0.98...10	0...16 ^{5.)}
	3.0	0.12	0.15	0...10	-0.98...6	0...10
	4.0	0.15	0.18	0...5	-0.98...3	0...5
E	2.0	0.08	0.10	0...10	-0.98...8	0...10
	3.0	0.12	0.15	0...6	-0.98...5	0...6
	4.0	0.15	0.18	0...3	-0.98...2.5	0...3
T	2.0	0.08	0.10	0...12	-0.98...8	-
	3.0	0.12	0.15	0...8	-0.98...5	-
	4.0	0.15	0.18	0...4	-0.98...3	-

Circuit function	DN	K _v value water ^{6.)} [m ³ /h]	Pressure range ^{1.)}			
			Standard ^{2.)} AC [50 or 60 Hz] [bar]	Standard ^{2.)} DC [bar]	Vacuum ^{3.)} [bar]	Impulse ^{4.)} [bar]
			PVDF or PP body			
A / B / C / D / F	2.0	0.1	0...16 ^{5.)}	0...12	-0.98...10	0...12
	3.0	0.15	0...10	0...8	-0.98...6	0...8
	4.0	0.18	0...5	0...4	-0.98...3	0...4
E / T	2.0	0.1	0...10	0...7	-0.98...7	0...7
	3.0	0.15	0...6	0...4	-0.98...5	0...4
	4.0	0.18	0...3	0...2.5	-0.98...2.5	0...2

1.) Pressure values with respect to atmospheric pressure (deviating pressure range for 5 W version)

2.) Rated power consumption 8 W

3.) Vacuum possible for all seal materials

4.) Inrush power 11 W

5.) For seal material FKM and FFKM the max. medium pressure is 12 bar

6.) At frequency DC the K_v value is reduced till 10 % to fulfil the function

Use in other circuit function

The valves are equipped with different springs for a specific mode of operation. When used in other modes of operation, the permissible operating pressure changes according to the following table.

Circuit function	Max. operating pressure [bar] when using the valve in a new circuit function																	
	Orifice DN 2						Orifice DN 3						Orifice DN 4					
	A ^{1.)}	B ^{1.)}	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
Metal body (8 W respectively 11 W)																		
C	16	1.5	16	1.5	1.5	16	10	1	10	1	1	10	5	0.8	5	0.8	0.8	5
D	4	16	4.5	16	4	4	2.5	10	2.5	10	2	3	2	5	2	5	2	2
T	8	8	10	10	10	8	6	6	6	6	6	6	3	3	3	3	3	3
Plastic body (8 W respectively 11 W)																		
C	16	1.5	16	1.5	1.5	16	10	1	10	1	1	10	5	0.8	5	0.8	0.8	5
D	4	16	4.5	16	4	4	2.5	10	2.5	10	2	3	2	5	2	5	2	2
F	16	1.5	10	1.5	1.5	16	6	1	6	1	1	10	4	1	4	1	1	

1.) For circuit function A and B the valve must be connected acc. to the pin assignment of 3/2 way valve.

Explosion proof version

Circuit function	DN	K _v value water [m ³ /h]	Pressure range ^{1.) 2.)}	
			Standard [bar]	Vacuum [bar]
Brass, stainless steel or PEEK body				
A / B / C / D / F	2.0	0.10	0...16	-0.98...10
	3.0	0.15	0...10	-0.98...6
	4.0	0.18	0...5	-0.98...3
E	2.0	0.10	0...10	-0.98...8
	3.0	0.15	0...6	-0.98...5
	4.0	0.18	0...3	-0.98...2.5
T	2.0	0.10	0...10	-0.98...8
	3.0	0.15	0...8	-0.98...5
	4.0	0.18	0...4	-0.98...3

1.) Devices with FKM or FFKM diaphragm are reduced to a max. pressure of 12 bar.

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

Circuit function	DN	K _v value water [m ³ /h]	Pressure range ^{1.) 2.)}	
			Standard [bar]	Vacuum [bar]
PVDF or PP body				
A / B / C / D / F	2.0	0.10	0...16	-0.98...10
	3.0	0.15	0...10	-0.98...6
	4.0	0.18	0...5	-0.98...3
E / T	2.0	0.10	0...10	-0.98...8
	3.0	0.15	0...6	-0.98...5
	4.0	0.18	0...3	-0.98...2.5

1.) Devices with FKM or FFKM diaphragm are reduced to a max. pressure of 12 bar.

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

7. Product accessories

7.1. Accessory standard version

Option	Variable Code	Description
Impulse version	CF02	Bistable magnetic system with inrush and drop-off coil; continuous operation or operation with short current pulses (min. 150 ms) possible
Oxygen versions	NL02	Suitable for applications with oxygen (non-metal materials that are in contact with the medium, are tested and approved according to BAM)
Increased purity requirements e.g. oil, grease and silicone-free	NL50/NL05	Wetted parts are specially cleaned and packaged in accordance with the valves
Increased tightness requirements	PCxx	Standard units are tested at 10 ⁻² mbar x l / sec; feasible up to 10 ⁻⁶ mbar
Electrical feedback	LF02/LF03	See Type 1060 ▶. Function as opener, closer or toggle switch depending on the connection (no IP65 achievable)
High-power electronics	CZ05	Inrush power 60 W, nominal holding current 3 W; with plastic versions 100 % duty cycle is now feasible
Vacuum version	NA02	Suitable for vacuums up to -0.98 bar
Increased purity and tightness requirements	NA03	Wetted parts are specially cleaned and leak tested to 10 ⁻⁴ mbar x l/sec
Increased purity and tightness requirements and vacuum version	NA01	Wetted parts are specially cleaned and leak tested up to 10 ⁻⁴ mbar x l/sec and suited for vacuum up to -0.98 bar
Coil with reduced power (5 W)	-	Devices have lower pressure range; with plastic versions 100 % duty cycle is now feasible
Cable plug	JHxx/JGxx/ JFxx	Cable plug is included in delivery. Cable plug versions (acc. to DIN EN 175301 - 803 Form A), see datasheet Type 2518 ▶ and Type 2509 ▶

Option	Variable Code	Description
Manifold with banjo bolt	LG 09	Due to the banjo bolt a direct attachment is possible (for example, to externally controlled pneumatic drives)
Approvals	PD01	CSA General Purpose valve
	PD02	UR (UL-recognized)/CSA approval
	PD07	DNV-GL (formerly Germanischer Lloyd)
	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
	PE95	UL (UL-listed) approval
	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 conformities (depending on the assembly)	-	EAC; drinking water; FDA;


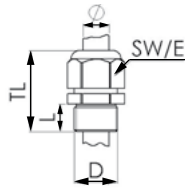
7.2. Accessory explosion proof version

Option	Variable Code	Description
Oxygen versions	NL02	Suitable for applications with oxygen (non-metal materials that are in contact with the medium, are tested and approved according to BAM)
Increased purity requirements e.g. oil, grease and silicone-free	NL50/NL05	Wetted parts are specially cleaned and packaged in accordance with the valves
Increased hermetic requirements	PCxx	Standard units are tested at 10 ⁻² mbar x l / sec; feasible up to 10 ⁻⁶ mbar
Vacuum version	NA02	Suitable for vacuums up to -0.98 bar
Increased purity and hermetic requirements	NA03	Wetted parts are specially cleaned and leak tested to 10 ⁻⁴ mbar x l/sec
Increased purity and hermetic requirements and vacuum version	NA01	Wetted parts are specially cleaned and leak tested up to 10 ⁻⁴ mbar x l/sec and suited for vacuum up to -0.98 bar
Electrical feedback	CF15	Coil with intrinsically safe proximity switches (PTB 00 ATEX 2048X) instead of manual override
Manifold with banjo bolt	LG 09	Due to the banjo bolt a direct attachment is possible (for example, to externally controlled pneumatic drives)
Potential conformities (depending on design)	-	EAC; drinking water; FDA

7.3. Cable glands for ATEX/IECEx terminal box

Note:

A cable gland in polyamide version is included in the delivery. A nickel-plated brass version can be ordered at a surcharge, see **"8.4. Ordering chart accessories"** on page 15.

Description	Ex approvals		Dimensions										
	Certification	Identification											
Ex cable gland, Brass, nickel-plated, 6...13 mm 	PTB 04 ATEX 1112 X, IECEx PTB 13.0027X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	 <table border="1"> <tr> <td>TL</td> <td>29...37 mm</td> </tr> <tr> <td>L</td> <td>6 mm</td> </tr> <tr> <td>D</td> <td>20 mm</td> </tr> <tr> <td>SW</td> <td>24 mm</td> </tr> <tr> <td>E</td> <td>27 mm</td> </tr> </table>	TL	29...37 mm	L	6 mm	D	20 mm	SW	24 mm	E	27 mm
TL	29...37 mm												
L	6 mm												
D	20 mm												
SW	24 mm												
E	27 mm												