



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

- Direct-acting, media-separated valve with diameter of up to DN 5
- Maintenance-free pivoted armature technology
- Vibration-proof, block screwed coil system
- Suitable for aggressive alkaline and acidic solutions
- Service-friendly, robust manual operation
- Explosion proof versions

The 0330 valve is a direct-acting, media-separated pivoted armature valve. It is available in 3/2- and 2/2-way versions. As a 3/2-way version, it can be used as a distributor or mixing valve. Various diaphragm material combinations and methods of operation are available depending on the application. The standard brass housing satisfies all European drinking water requirements. Stainless steel (316), PVDF, and polypropylene housing versions complete the offering. The solenoid coils are moulded with a chemically resistant epoxy. The 0330 is equipped with manual override for commissioning and testing. For reduced energy requirements all coils can be delivered with electronic power reduction or as an impulse version. The switching status can be indicated with position feedback as a binary or NAMUR signal. In combination with a plug in accordance with DIN EN 17301-803 Form A, the valves satisfy protection class IP65/67 - in combination with a stainless steel or plastic housing NEMA 250 Cat. 4X.

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Technical data									
Available housing materials	Brass								
	Stainless steel (1.4401)								
	PP (Polypropylene)								
	PVDF (Polyvinylfluoride)								
Port	G 1/4; NPT 1/4;								
connection	(RC 1/4 and G 1/8 on request)								
Seal material	EDPM / FKM / FFKM / NBR								
Medium									
for NBR	Neutral medium such as compressed air, town gas, water,								
	hydraulic oil, oils and fats without additives, oxygen								
EPDM	Alkalis, acids to medium concentrations, alkaline washing								
	and bleaching lyes								
for FKM	Oxydizing acids and substances, hot oils with additives,								
	salt solutions, waste gases, oxygen								
for FFKM	aggressive mediums, hot air, hot oils								
All Materials - For more exact in	nfo. please refer to our chemical resistance chart								
Medium temperature	NBR 0 to +80 °C								
for body material	EPDM -30 to +90 °C								
brass or stainless steel	FKM 0 to +90 °C								
	FFKM +5 to +90 °C								
Medium temperature	NBR 0 to +80 °C								
for body material	EPDM -30 to +80 °C								
PP or PVDF	FKM 0 to +80 °C								
	FFKM +5 to +80 °C								
Viscosity	Max. 37mm <sup>2</sup> /s								
Ambient temperature	max. +55 °C								
Voltages	24V 50Hz; 110V 50Hz; 230V 50Hz; 120V 60Hz;								
	240V 60Hz; 12V DC; 24V DC;								
	(further voltages on request)								
Voltage tolerance	+/- 10%								
Duty cycle for brass and	100%								
stainless steel.									
Duty cycle for PP and PVDF	40% ED (60% intermittent operation) in 30min for 8W								
	version 100% ED for 5W version								



#### **Circuit function**

A 2/2 way direct-acting solenoid valve, normally closed



**B** 2/2 way direct-acting solenoid valve, normally open



**C** 3/2 way direct-acting solenoid valve, normally closed



**D** 3/2 way direct-acting solenoid valve, normally open



**E** 3/2 way mixing solenoid valve



**F** 3/2 way direct-acting, distribution solenoid valve



**T** 3/2 way direct-acting solenoid valve, flow direction optional



#### Technical data (continued)

Electrical connection	Pin terminal acc. to DIN EN 175301-803 Form A for cable
	pug Type 2508/2509
	(also on request with moulded cable or terminal box)
Protection class	IP65 with Cable Plug
Coil insulation class	Н
Installation	As required, preferably with actuator upright
Weight [kg]	
with metal body	0.47
with plastic hausing	0.40

#### Standard power consumption

Frequency AC Inrush [VA]	Hold [VA]		Frequency DC Cold [W]	Warm [W]
30	15	8	11	8

#### Impulse (inrush winding)

	• ,		
Frequency AC Hold [VA]	Operation [W]	Frequency DC Cold [W]	Warm [W]
20	11	11	8

#### Response times

Orifice [mm]	Frequency AC		Frequency DC	
	Opening [ms]	Closing [ms]	Opening [ms]	Closing [ms]
2-4	8-15	8-15	10-20	10-20

#### Response times [ms]:

Measured at valve outlet at 6 bar and +20 °C

Opening: Pressure rise 0 to 90%, Closing: Pressure drop 100 to 10%

#### Pressure range and flow rate for metal body

Circuit function	DN	Kv value w	ater [m³/h]:	Sta	ndard <sup>1)</sup>	Impulse 2)
		DC	AC [50 or 60Hz]	Pressure range 4) [bar]	Vacuum <sup>3)</sup> Pressure range <sup>4)</sup> [bar]	Pressure range 4) [bar]
A/B/C/D/F	2.0	0.08	0.11	0 - 16 5)	-0.98 - 10	0 - 16 5)
	3.0	0.14	0.18	0 - 10	-0.98 - 6	0 - 10
	4.0	0.17	0.23	0 - 5	-0.98 - 3	0 - 5
	5.0	0.29	0.29	0 - 2.5	-0.98 - 1	0 - 2.5
Е	2.0	0.08	0.11	0 - 10	-0.98 - 8	0 - 10
	3.0	0.14	0.18	0 - 6	-0.98 - 5	0 - 6
	4.0	0.17	0.23	0 - 3	-0.98 - 2.5	0 - 3
	5.0	0.29	0.29	0 - 1.5	-0.98 - 1	0 - 1
T	2.0	0.08	0.11	0 - 12	-0.98 - 8	0 - 10
	3.0	0.14	0.18	0 - 8	-0.98 - 5	0 - 6
	4.0	0.17	0.23	0 - 4	-0.98 - 2.5	0 - 5
	5.0	0.29	0.29	0 - 2.5	-0.98 - 1	-

# Pressure range and flow rate for plastic body

Circuit function	DN	Kv value water [m³/h] <sup>6)</sup>	Standard <sup>1)</sup> Pressure range <sup>4)</sup> [bar] AC [50 or 60Hz]	Pressure range <sup>4)</sup> [bar] DC	Vacuum Pressure range <sup>4)</sup> [bar]	Impulse <sup>2)</sup> Pressure range <sup>4)</sup> [bar]
A/B/C/D/F	2.0	0.13	0 - 16 5)	0 - 12	-0.98 - 10	0 - 12
	3.0	0.25	0 - 10	0 - 8	-0.98 - 6	0 - 8
	4.0	0.30	0 - 5	0 - 4	-0.98 - 3	0 - 4
	5.0	0.40	0 - 4.5	0 - 3	-0.98 - 1	0 - 3
E/T	2.0	0.13	0 - 10	0 - 7	-0.98 - 7	0 - 7
	3.0	0.25	0 - 6	0 - 4	-0.98 - 5	0 - 4
	4.0	0.30	0 - 3	0 - 2	-0.98 - 2.5	0 - 2

<sup>1)</sup> Rated power consumtion 8W

2) Inrush power 11W

<sup>3)</sup> Vacuum possible for all seal materials

<sup>4)</sup> Pressure values [bar] with respect to atmospheric pressure

<sup>5)</sup> For seal material FKM and FFKM the max. mediums pressure is 12 bar

 $<sup>^{\</sup>rm 6)}$  At frequency DC the  $\rm K_{\rm v}$  value is reduced till 10% to fulfil the function



#### Other circuit functions

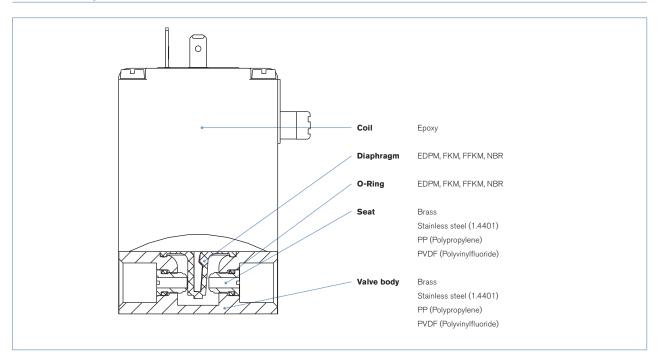
The valves are fitted with different springs for a specific circuit function. When used in other circuit functions the permissable operating pressure changes acc. to the following table.

Metal body	Metal body (8W respectively 11W)																	
Circuit Max. operating pressure [bar] when using the valve in a new circuit function																		
function	Orifice 2mm						Orifice 3mm					Orifice 4mm						
	A1)	<b>B</b> <sup>1)</sup>	С	D	Е	F	Α	В	С	D	E	F	Α	В	С	D	E	F
С	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 (8W respectively 11W)																		
Circuit Max. operating pressure [bar] when using the valve in a new circuit function																		
function	Orifice 2mm						Orific	Orifice 3mm					Orifice 4mm					
	<b>A</b> <sup>1)</sup>	<b>B</b> 1)	С	D	E	F	Α	В	С	D	E	F	Α	В	С	D	Е	F
С	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	5

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

#### **Additional options**





# **Additional options**

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 <sup>-2</sup> mbar x I / sec; feasible up to 10 <sup>6</sup> mbar
Electrical feedback	LF02 / LF03	See Type 1060
High-power electronics	CZ05	Inrush power 60 W, nominal holding current 3 W; with plastic versions 100% ED is now feasible
Vacuum version	NA02	Suitable for vacuums up to -0.98bar
Increased purity and tightness requirements	NA03	Wetted parts are specially cleaned and leak tested to 10 <sup>-4</sup> mbar x l/sec
Increased purity and tightness requirements and vacuum version	NA01	Wetted parts are specially cleaned and leak tested up to 10 <sup>-4</sup> mbar x l/sec and suited for vacuum up to -0.98 bar
Coil with reduced power (5W)		Devices have lower pressure range; with plastic versions 100% ED is now feasible
Cable plug	JFxx / JGxx	Cable plug is included in delivery. Cable plug versions (acc. to DIN EN 175301-803 Form A), see datasheet Type 2508 and 2509
Approvals	PD01	CSA General Purpose valve
	PD02	CSA General Purpose valve UL recognized General Purpose valve
	PD24	UL listed Genaral Purpose valve CSA Genaral Purpose valve FM non-incendive for class I / II / III Div.2 T4
	PD45	FM explosionproof for class I Div. 1 and dust-ingnitionproof for class II / III Div. 1 T4 CSA General Purpose valve for hazardous location class I / II Div. 2 and class III T4
	PD07	DNV-GL (formerly Germanischer Lloyd)
possible conformities (depending on the assembly)		EAC, trinking water, FDA
Approvals	PE84	NSF61 - drinking water approval USA

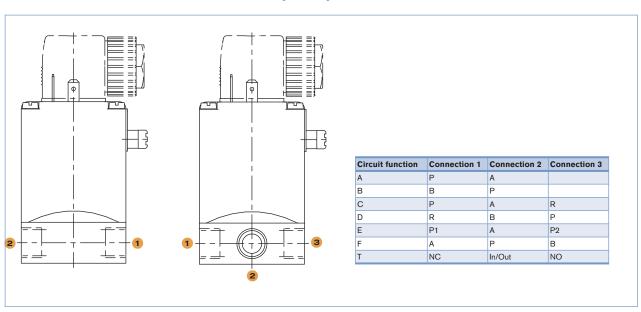


# Dimensions [mm]

# Plastic body Plastic body Plastic body For metal housings, the minimum thread length at the middle connection is 7.5mm Mounting device: By drilling M4 x 8 (metal housing) or self-tapping screws (plastic housing) on underside of the housing on the hole pattern 38 x 24.

#### Port connections

The connections marked with 1, 2 and 3 are labelled in the drawing according to the circuit function table.





# Ordering chart (products with reduced delivery time)

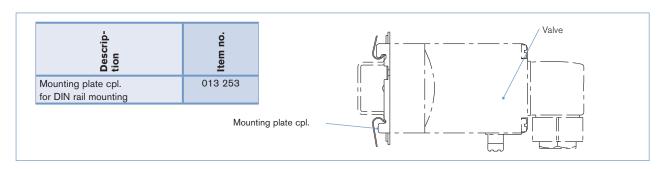
All devices with connection thread G 1/4, manual override and cable plug Type 2508

			Item no. n	er voltage/frequer	ncv [V/Hz]	
Ē		<u>=</u>	B E			
Circuit function	Orifice [mm]	Seal Material	Housing or seat material	024/DC	024/50	230/50
A 2)	3.0	FKM	Brass	020 293	022 883	124 909
	3.0	FKM	Stainless steel	020 292	023 984	024 563
	3.0	FKM	PP	018 410	088 496	045 653
	3.0	FKM	PVDF	018 188	020 286	069 006
	3.0	NBR	Brass	020 294	086 553	024 902
	3.0	EPDM	PP	067 214	022 105	062 398
	4.0	FKM	Brass	024 019	025 246	124 912
	4.0	FKM	Stainless steel	018 276	018 857	020 873
	4.0	FKM	PP	062 695	043 005	063 116
	4.0	FKM	PVDF	023 472	069 079	087 837
	4.0	NBR	Brass	025 084	-	046 007
	4.0	EPDM	PP	021 660	067 731	063 118
	4.0	EPDM	PVDF	057 573	-	125 507
	5.0	FKM	PP	062 624	067 007	022 619
	5.0	FKM	PVDF	064 512	-	063 786
	5.0	EPDM	PP	061 321	054 261	049 969
	5.0	EPDM	PVDF	120 184	059 802	130 117
B 2)	3.0	FKM	Brass	141 917	130 146	141 919
	4.0	FKM	Brass	141 920	141 921	141 923
	3.0	FKM	Stainless steel	141 928	141 929	141 931
	4.0	FKM	Stainless steel	141 932	141 933	141 935
С	2.0	NBR	Brass	041 103	042 129	041 105
	3.0	NBR	Brass	041 107	041 108	041 116
	3.0	FKM	Stainless steel	052 344	045 024	052 059
	4.0	NBR	Brass	042 218	042 695	042 329
	4.0	FKM	Stainless steel	050 483	043 324	050 979
	4.0	FKM	PP	-	088 420	-
	4.0	FKM	PVDF	055 788	-	019 078
	4.0	EPDM	PP	-	-	063 625
D	2.0	NBR	Brass	056 984	041 858	041 137
	3.0	NBR	Brass	041 139	041 141	041 147
	4.0	NBR	Brass	043 129	042 696	042 903
Е	3.0	FKM	PP	069 917	066 230	022 294
	3.0	EPDM	PP	078 556	-	078 559
	4.0	FKM	PP	061 077	086 921	053 406
	4.0	FKM	PVDF	022 340	020 550	085 599
	4.0	EPDM	PP	067 160	044 693	066 033
F	4.0	FKM	PP	020 528	-	-
	4.0	EPDM	PP	-	-	066 032
Т	2.0	FKM	Brass	124 922	138 316	124 925
	3.0	FKM	Brass	124 927	124 928	124 930
	2.0	FKM	Stainless steel	124 932	124 933	124 935
	3.0	FKM	Stainless steel	124 937	124 938	124 940

<sup>&</sup>lt;sup>2)</sup> The listed ID numbers and circuit functions have a body with a straight channel

 $\textbf{Note:} \ \mathsf{Further} \ \mathsf{versions} \ \mathsf{on} \ \mathsf{request}$ 

#### Order chart for accessories



# burkert



#### **Circuit function**

- **A** 2/2 way direct-acting solenoid valve, normally closed
- 1 (P)
- **B** 2/2 way direct-acting solenoid valve, normally open
- 1 (P)
- **C** 3/2 way direct-acting solenoid valve, normally closed
- 12 A T T WM
- **D** 3/2 way direct-acting solenoid valve, normally open
- 10 Z(B) 1(P) 3(R)
- **E** 3/2 way mixing solenoid valve
- 1(P1) 3(P2)
- **F** 3/2 way direct-acting, distribution solenoid valve
- 4(A) 2(B) 1(P)
- T 3/2 way direct-acting solenoid valve, flow direction optional



# **Explosion proof version**

Available body materials PVDF (Polyvinyiffluoride) Port connection G 1/4; NPT 1/4; (RC 1/4 and G 1/8 on request)  Seal material EDPM / FKM / FFKM / NBR  Medium for NBR	Technical data								
Port connection G 1/4; NPT 1/4; (RC 1/4 and G 1/8 on request)  Seal material EDPM / FKM / FFKM / NBR  Medium for NBR Neutral medium such as compressed air, town gas, water, hydraulic oil, oils and fats without additives, oxygen  Alkalis, acids to medium concentrations, alkaline washing and bleaching lyes  Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen  for FKM Aggressive mediums, hot air, hot oils  All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material EPDM -30 to +80 °C FKM 0 to +80 °C FFKM +5 to 90°C  Medium temperature for body material EPDM -30 to +80 °C FFKM 0 to +80 °C FFKM 0 to +80 °C FFKM 15 to +80 °C FFKM 15 to +80 °C FFKM 5 to +80 °C FFKM 5 to +80 °C FFKM 15 to +80 °C FFKM 15 to +80 °C FFKM 230V (further voltages on request)  Prequency Voltages  AC/DC  Voltage tolerance  AC/DC  Voltage tolerance  Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class  I 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130° Db  Certificate  EPS 16.0049X	Available body	Brass, stainless steel (1.4401), PP (Polypropylene)							
Seal material   EDPM / FKM / FFKM / NBR	materials	PVDF (Polyvinylfluoride)							
Neutral medium such as compressed air, town gas, water, hydraulic oil, oils and fats without additives, oxygen	Port connection	G 1/4; NPT 1/4; (RC 1/4 and G 1/8 on request)							
for NBR  Neutral medium such as compressed air, town gas, water, hydraulic oil, oils and fats without additives, oxygen  Alkalis, acids to medium concentrations, alkaline washing and bleaching lyes  Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen  for FKM  Aggressive mediums, hot air, hot oils  All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material brass or stainless  FKM  O to +80 °C  FFKM  FFKM  O to +90 °C  Medium temperature for body material PP or PVDF  FKM  O to +80 °C  FFKM  FFKM  O to +80 °C  FFKM  FFKM  O to +80 °C  FFKM	Seal material	EDPM / FKM / FFKM / NBR							
oil, oils and fats without additives, oxygen  Alkalis, acids to medium concentrations, alkaline washing and bleaching lyes  for FKM  Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen  for FFKM  Aggressive mediums, hot air, hot oils  All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material brass or stainless FKM  Oto +80 °C  EPDM  30 to +90 °C  FKM  Oto +80 °C  FFKM  5 to 90 °C  Medium temperature PKM  Oto +80 °C  FFKM  Oto	Medium								
for FFKM Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen  for FFKM Aggressive mediums, hot air, hot oils  All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material brass or stainless steel FFKM +5 to 90°C  Medium temperature for body material brass or stainless FFKM +5 to 90°C  Medium temperature for body material EPDM -30 to +80 °C FFKM +5 to 90°C  Medium temperature for body material EPDM -30 to +80 °C FFKM 0 to +80 °C FFKM 0 to +80 °C FFKM +5 to +80°C  Viscosity Max. 37mm²/s  Ambient temperature. Max. +55°C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class Coil insulation class  H  Type of protection  EPS 16 ATEX 1 111 X IECEX EPS 16.0049X	for NBR	Neutral medium such as compressed air, town gas, water, hydraulic							
bleaching lyes  for FKM Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen  for FFKM Aggressive mediums, hot air, hot oils  All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material brass or stainless steel FKM 0 to +90 °C FFKM +5 to 90 °C  Medium temperature for body material FPDM -30 to +80 °C  EPDM -30 to +80 °C  FFKM 0 to +80 °C  FFKM 0 to +80 °C  FFKM +5 to +80 °C  FFKM +5 to +80 °C  Viscosity Max. 37mm²/s  Ambient temperature. Max. +55 °C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance H/- 10%  Duty cycle Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class  I) 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130° Db  Certificate EPS 16.0049X		oil, oils and fats without additives, oxygen							
for FKM Oxydizing acids and substances, hot oils with additives, salt solutions, waste gases, oxygen  Aggressive mediums, hot air, hot oils  All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material FKM 0 to +80 °C EPDM -30 to +90 °C FKM 0 to +90 °C FKM 0 to +80 °C EPDM -30 to +80 °C FKM 0 to +80 °C FKM 0 to +80 °C FFKM +5 to +80 °C FFKM +5 to +80 °C FFKM 0 to +90 °C FFKM 0 to +80 °C FFKM 0 to +90 °	for EPDM	Alkalis, acids to medium concentrations, alkaline washing and							
waste gases, oxygen  for FFKM Aggressive mediums, hot air, hot oils  All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material brass or stainless steel FFKM 0 to +90 °C  Medium temperature for body material PP or PVDF  FFKM 0 to +80 °C  FFKM 15 to 90°C  Wascosity Max. 37mm²/s  Ambient temperature. Max. +55°C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class H  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		bleaching lyes							
Aggressive mediums, hot air, hot oils  All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material brass or stainless steel  FKM 0 to +90 °C  FFKM +5 to 90 °C  Medium temperature for body material PP or PVDF  FKM 0 to +80 °C  EPDM -30 to +80 °C  EPDM -30 to +80 °C  FFKM +5 to 90 °C  FKM 0 to +80 °C  FFKM +5 to +80 °C  FFKM 10 to +	for FKM	Oxydizing acids and substances, hot oils with additives, salt solutions,							
All Materials - For more exact info. please refer to our chemical resistance chart  Medium temperature for body material brass or stainless steel FKM 0 to +90 °C FKM 0 to +90 °C FKM +5 to 90 °C  Medium temperature for body material PP or PVDF FKM 0 to +80 °C FFKM +5 to +80 °C  Viscosity Max. 37mm²/s  Ambient temperature. Max. +55 °C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10 %  Duty cycle 100 %  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class IP65  Coil insulation class H  Type of protection II 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130 ° Db  Certificate EPS 16.0049X		waste gases, oxygen							
Medium temperature for body material brass or stainless steel FKM 0 to +90 °C FKM +5 to 90 °C  Medium temperature for body material EPDM -30 to +80 °C  Medium temperature for body material EPDM -30 to +80 °C  FFKM 0 to +80 °C  FFKM 0 to +80 °C  FFKM +5 to +80 °C  FFKM +5 to +80 °C  FFKM +5 to +80 °C  Viscosity Max. 37mm²/s  Ambient temperature. Max. +55 °C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class IP65  Coil insulation class H  Type of protection II 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130° Db  Certificate EPS 16.0049X	for FFKM	Aggressive mediums, hot air, hot oils							
for body material brass or stainless steel FKM 0 to +90 °C  Medium temperature for body material PP or PVDF FKM 0 to +80 °C FFKM +5 to 90°C  Wax. 37mm²/s  Ambient temperature. Max. +55°C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class IP65  Coil insulation class H  Type of protection II 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130° Db  Certificate EPS 16.0049X	All Materials - For mor	e exact info. please refer to our chemical resistance chart							
brass or stainless steel  FKM 0 to +90 °C  Medium temperature for body material PP or PVDF  FKM 0 to +80 °C  FFKM +5 to +80 °C  Viscosity  Max. 37mm²/s  Ambient temperature.  Max. +55 °C  Voltages 24V, 230V (further voltages on request)  Frequency  AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection  Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class  Coil insulation class  H  Type of protection  Il 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	Medium temperature	NBR 0 to +80 °C							
Steel	for body material	EPDM -30 to +90°C							
Medium temperature for body material PP or PVDF	brass or stainless	FKM 0 to +90 °C							
for body material PP or PVDF FKM 0 to +80 °C FFKM +5 to +80 °C FFKM +5 to +80 °C  Viscosity Max. 37mm²/s  Ambient temperature. Max. +55 °C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class Coil insulation class H  Type of protection Il 2 G Ex mb IIC T4 Gb Il 2 D EX mb IIIC T130° Db  Certificate EPS 16 ATEX 1 111 X IECEx EPS 16.0049X	steel	FFKM +5 to 90°C							
PP or PVDF  FKM 0 to +80 °C FFKM +5 to +80 °C  Viscosity  Max. 37mm²/s  Ambient temperature.  Max. +55 °C  Voltages  24V, 230V (further voltages on request)  Frequency  AC/DC  Voltage tolerance  +/- 10%  Duty cycle  100%  Electrical connection  Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class  Coil insulation class  H  Type of protection  Il 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	Medium temperature	NBR 0 to +80 °C							
FFKM +5 to +80°C  Viscosity Max. 37mm²/s  Ambient temperature. Max. +55°C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class IP65  Coil insulation class H  Type of protection II 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130° Db  Certificate EPS 16.0049X	for body material	EPDM -30 to +80°C							
Viscosity  Max. 37mm²/s  Ambient temperature.  Max. +55°C  Voltages  24V, 230V (further voltages on request)  Frequency  AC/DC  Voltage tolerance  +/- 10%  Duty cycle  100%  Electrical connection  Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class  IP65  Coil insulation class  H  Type of protection  Il 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	PP or PVDF	FKM 0 to +80 °C							
Ambient temperature. Max. +55°C  Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1)  Terminal box without safety fuse  Protection class IP65  Coil insulation class H  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		FFKM +5 to +80°C							
Voltages 24V, 230V (further voltages on request)  Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class IP65  Coil insulation class H  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	Viscosity	Max. 37mm <sup>2</sup> /s							
Frequency AC/DC  Voltage tolerance +/- 10%  Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class IP65  Coil insulation class H  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	Ambient temperature.	Max. +55°C							
Voltage tolerance	Voltages	24V, 230V (further voltages on request)							
Duty cycle 100%  Electrical connection Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class IP65  Coil insulation class H  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	Frequency	AC/DC							
Electrical connection  Moulded cable (For more detailed information, refer to the instruction manual ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class  IP65  Coil insulation class  H  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	Voltage tolerance	+/- 10%							
ACP016, chapter 7.6.1) Terminal box without safety fuse  Protection class IP65 Coil insulation class H Type of protection Il 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	Duty cycle	100%							
Terminal box without safety fuse  Protection class IP65  Coil insulation class H  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	<b>Electrical connection</b>	Moulded cable (For more detailed information, refer to the instruction manual							
Protection class IP65  Coil insulation class H  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		ACP016, chapter 7.6.1)							
Coil insulation class H  Type of protection      2 G Ex mb     C T4 Gb      2 D EX mb     C T130° Db  Certificate   EPS 16 ATEX 1 111 X     IECEx EPS 16.0049X		Terminal box without safety fuse							
Type of protection     2 G Ex mb    C T4 Gb      2 D EX mb    C T130° Db  Certificate  EPS 16 ATEX 1 111 X     ECEx EPS 16.0049X	Protection class	IP65							
2 D EX mb         C T130° Db	Coil insulation class	Н							
Certificate EPS 16 ATEX 1 111 X IECEx EPS 16.0049X	Type of protection	II 2 G Ex mb IIC T4 Gb							
IECEx EPS 16.0049X		II 2 D EX mb IIIC T130° Db							
	Certificate	EPS 16 ATEX 1 111 X							
Installation As required, preferably with actuator upright		IECEx EPS 16.0049X							
	Installation	As required, preferably with actuator upright							

#### Cycling rate

	Max. cycling rate	For mediums temp	For ambient temp.			
Variant 1	20/min	Up to +70 °C	Up to +40 °C			
Variant 2	5/min	Up to +90 °C	Up to +40 °C			

#### Power consumption

i ottor oonsamption	
Inrush [W]	Operation [W]
40	3

#### Response times

Orifice [mm]	Opening [ms]	Closing [ms]
2 - 4	30	40

#### Response times [ms]:

Measured at valve outlet at 6 bar and +20 °C

Opening: Pressure rise 0 to 90%, Closing: Pressure drop 100 to 10%



# Technical data (continued)

# Pressure range and flow rate for metal body

Circuit function	DN	Kv value water [m³/h]	Standard Pressure range <sup>2) 3)</sup> [bar]	Vacuum Pressure range [bar]
A/B/C/D/F	2.0	0.11	0 - 16	-0.98 – 10
	3.0	0.18	0 - 10	-0.98 – 6
	4.0	0.23	0 – 5	-0.98 – 3
	5.0	0.29	0 – 4	-0.98 - 2.5
Е	2.0	0.11	0 – 10	-0.98 – 8
	3.0	0.18	0 – 6	-0.98 – 5
	4.0	0.23	0 - 3.5	-0.98 - 2.5
	5.0	0.29	0 – 3	-0.98 – 2
Т	2.0	0.11	0 – 10	-0.98 – 8
	3.0	0.18	0 – 6	-0.98 – 5

#### Pressure range and flow rate for plastic body

Circuit function	DN	Kv value water [m³/h]	Standard Pressure range <sup>2) 3)</sup> [bar]	Vacuum Pressure range [bar]
A/B/C/D/F	2.0	0.13	0 - 16	-0.98 – 10
	3.0	0.25	0 – 10	-0.98 – 6
	4.0	0.30	0 – 5	-0.98 – 3
	5.0	0.40	0 - 4.5	-0.98 – 1
E/T	2.0	0.13	0 - 10	-0.98 - 7
	3.0	0.25	0 – 6	-0.98 – 5
	4.0	0.30	0 – 3	-0.98 - 2.5

 $<sup>^{\</sup>mbox{\tiny 1)}}$  Measured at +20 °C, 1 bar  $^{\mbox{\tiny 2)}}$  pressure at valve inlet and free outlet.

<sup>&</sup>lt;sup>2)</sup> Devices with FKM or FFKM diaphragm are reduced to a max. pressure of 12 bar <sup>3)</sup> Pressure data [bar]: Measured as overpressure to the atmospheric pressure



#### Other circuit functions

The valves are fitted with different springs for a specific circuit function. When used in other circuit functions the permissable operating pressure changes acc. to the following table.

Metal body	Vietal body																	
Valve																		
operation	Orifice 2mm			Orific	e 3mm	n Orifi					e 4mm							
	A1)	<b>B</b> <sup>1)</sup>	С	D	E	F	Α	В	С	D	E	F	Α	В	С	D	Е	F
С	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
Т	8	8	10	10	10	8	6	6	6	6	6	6	3	3	3	3	3	3

Plastic bod	Plastic body																	
Valve																		
operation	Orifice 2mm Orifice 3mm							Orifice 4mm										
	<b>A</b> <sup>1)</sup>	<b>B</b> 1)	С	D	Е	F	Α	В	С	D	Е	F	Α	В	С	D	Е	F
С	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	

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

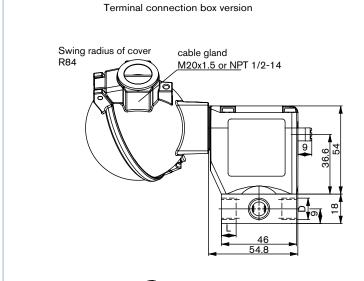
# **Additional options**

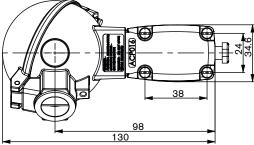
Option	Variable	Description
	Code	
Oxygen versions	NL02	Suitable for applications with oxygen
		(non-metal materials that are in contact with the medium, are tested and
		approved according to BAM)
Increased purity requirements e.g. oil, grease and	NL50/NL05	Wetted parts are specially cleaned and packaged in accordance with the
silicone-free		valves
Increased hermetic requirements	PCxx	Standard units are tested at 10 <sup>-2</sup> mbar x l / sec; feasable up to 10 <sup>-6</sup> mbar
Vacuum version	NA02	Suitable for vacuums up to -0.98bar
Increased purity and hermetic requirements	NA03	Wetted parts are specially cleaned and leak tested to 10 <sup>-4</sup> mbar x l/sec
Increased purity and hermetic requirements and vacu-	NA01	Wetted parts are specially cleaned and leak tested up to 10 <sup>-4</sup> mbar x l/sec
um version		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

# burkert

100.3 95.3

# Dimensions [mm]



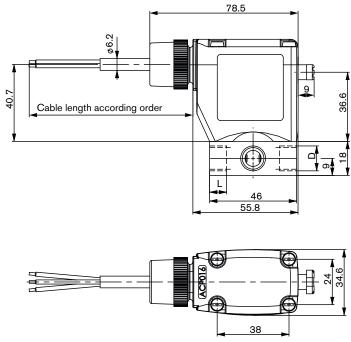


D1 L1 D2 L2 G 1/8 9 9

G 1/4 NPT 1/4 7.5 For G threads the dimensions D1 and L1are valid

For NPT threads the dimensions D2 and L2 are valid

Cable outlet version

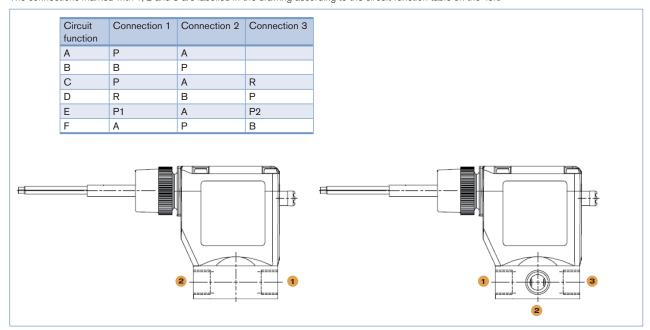






#### Port connections

The connections marked with 1, 2 and 3 are labelled in the drawing according to the circuit function table on the left.



# Ordering chart

#### All devices with connection thread G 1/4 and manual override

- - -	[m m]			le o		er voltage/ cy [V/Hz]
Circuit function	Orifice [r	Seal Material	Housing or seat material	Electrical	024/UC	230/UC
A <sup>2)</sup>	3.0	NBR	MS	Terminal box	306 165	306 167
	3.0	NBR	MS	cable	306 005	306 006
	3.0	FKM	Stainless steel	Terminal box	306 168	306 169
	3.0	FKM	Stainless steel	cable	306 007	306 008
С	3.0	NBR	MS	Terminal box	304 531	306 149
	3.0	NBR	MS	cable	305 982	305 985
	3.0	FKM	Stainless steel	Terminal box	306 154	306 164
	3.0	FKM	Stainless steel	cable	306 003	306 004
Е	3.0	FKM	Stainless steel	Terminal box	306 171	306 157
	3.0	FKM	Stainless steel	cable	306 009	306 010
F	3.0	FKM	Stainless steel	Terminal box	306 198	306 172
	3.0	FKM	Stainless steel	cable	306 011	306 012
	4.0	FKM	Stainless steel	Terminal box	306 151	-
	4.0	FKM	Stainless steel	cable	306 050	-

 $\textbf{Note:} \ \mathsf{Further} \ \mathsf{versions} \ \mathsf{on} \ \mathsf{request}$ 



#### Ex-Cable glands

(polyamide version included in delivery / surcharge applied for brass nickel plated version

		Ex Ap	provals		
Photo	Description	Certification	Identifica- tion	Item no	Drawing
	Brass. nickelpla- ted, 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,	773 278	SW/E  TL 29-37 mm  L 6 mm  D 20  SW 24 mm  E 27 mm
	Polyamide, 7-13 mm	PTB 13 ATEX 1015 X, IECEx PTB 13.0034X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	773 277	SW/E TL 36-45 mm L 10 mm D 20 SW 24 mm E 28 mm

#### Special tool to turn the junction box (not included in delivery)

Photo	Descrip- tion	Item no.
- 5Nm SW19	Set SC02-AC10 Special wrench Service Manual	293 488

To find your nearest Bürkert facility, click on the orange box  $\;\; o$ 

