



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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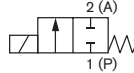
Explosion proof version

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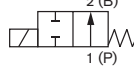
Technical data	
Available housing materials	Brass Stainless steel (1.4401) PP (Polypropylene) PVDF (Polyvinylfluoride)
Port connection	G 1/4; NPT 1/4; (RC 1/4 and G 1/8 on request)
Seal material	EDPM / FKM / FFKM / NBR
Medium for NBR	Neutral medium such as compressed air, town gas, water, hydraulic oil, 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 aggressive mediums, hot air, hot oils
EPDM	
for FKM	
for FFKM	
All Materials - For more exact info. please refer to our chemical resistance chart	
Medium temperature for body material brass or stainless steel	NBR 0 to +80 °C EPDM -30 to +90 °C FKM 0 to +90 °C FFKM +5 to +90 °C
Medium temperature for body material PP or PVDF	NBR 0 to +80 °C EPDM -30 to +80 °C FKM 0 to +80 °C FFKM +5 to +80 °C
Viscosity	Max. 37mm ² /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 stainless steel.	100%
Duty cycle for PP and PVDF	40% ED (60% intermittent operation) in 30min for 8W version 100% ED for 5W version

Circuit function

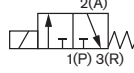
A 2/2-way direct acting valve, normally closed



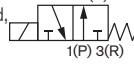
B 2/2-way direct acting valve, normally open



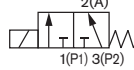
C 3/2-way valve, direct acting, when de-energised Port A exhausted



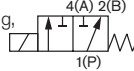
D 3/2-way valve, servo-assisted, outlet B normally pressurized



E Mixer valve, direct-acting, in de-energized position, P2→A open, P1 closed



F Distribution valve, direct-acting, in de-energized position, P→B open, A closed



T 3/2 way valve, universal function, flow direction as required

**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	H
Installation	As required, preferably with actuator upright
Weight [kg]	
with metal body	0.47
with plastic housing	0.40

Standard power consumption

Frequency AC Inrush [VA]	Hold [VA]	Operation [W]	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 water [m³/h]:		Standard ¹⁾		Impulse ²⁾
		DC	AC [50 or 60Hz]	Pressure range ⁴⁾ [bar]	Vacuum ³⁾ Pressure range ⁴⁾ [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
E	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]	Standard ¹⁾		Vacuum Pressure range ⁴⁾ [bar]	Impulse ²⁾ Pressure range ⁴⁾ [bar]
			Pressure range ⁴⁾ [bar] AC [50 or 60Hz]	Pressure range ⁴⁾ [bar] DC		
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 - 3.5	-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

¹⁾ Rated power consumption 8W

²⁾ Inrush power 11W

³⁾ Vacuum possible for all seal materials

⁴⁾ Pressure values [bar] with respect to atmospheric pressure

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

Other circuit functions

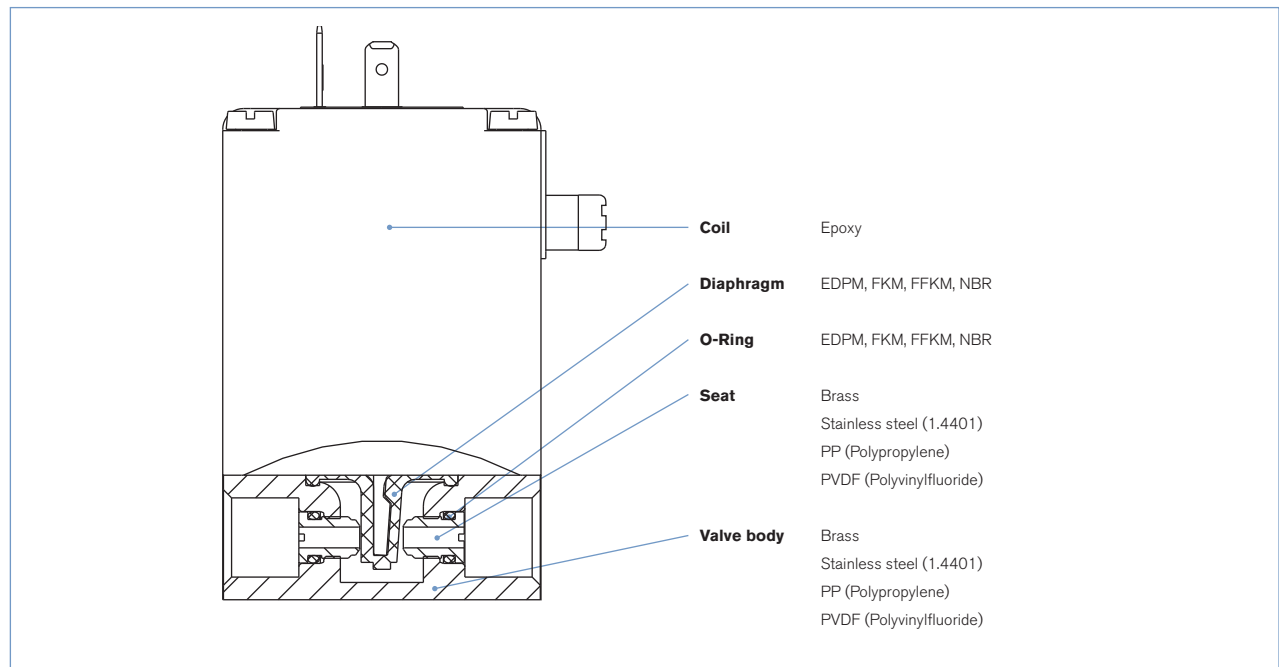
The valves are fitted with different springs for a specific circuit function. When used in other circuit functions the permissible operating pressure changes acc. to the following table.

Metal body (8W respectively 11W)																		
Circuit function	Max. operating pressure [bar] when using the valve in a new circuit function																	
	Orifice 2mm						Orifice 3mm						Orifice 4mm					
	A ¹⁾	B ¹⁾	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
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 (8W respectively 11W)																		
Circuit function	Max. operating pressure [bar] when using the valve in a new circuit function																	
	Orifice 2mm						Orifice 3mm						Orifice 4mm					
	A ¹⁾	B ¹⁾	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
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	5

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

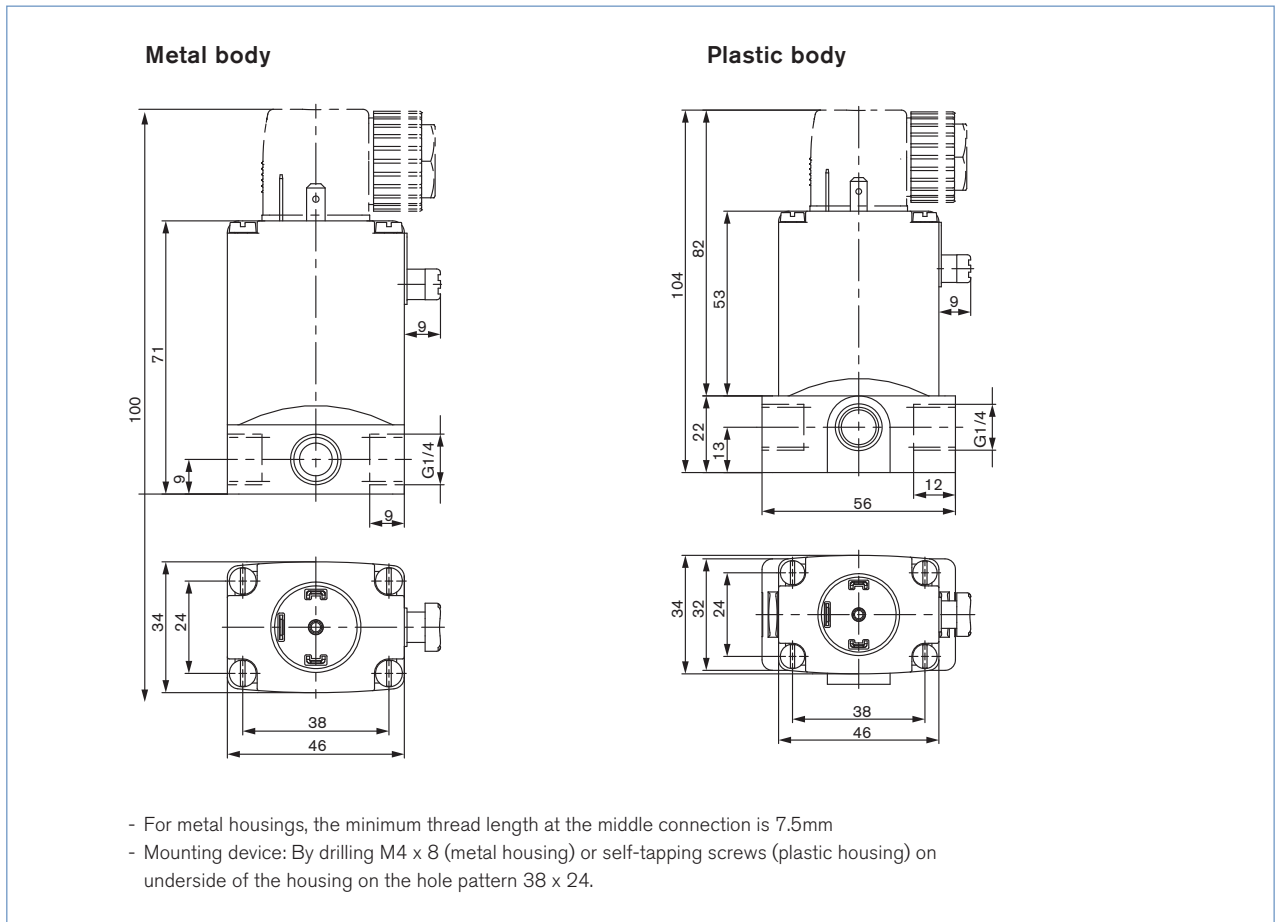
Additional options



Additional options

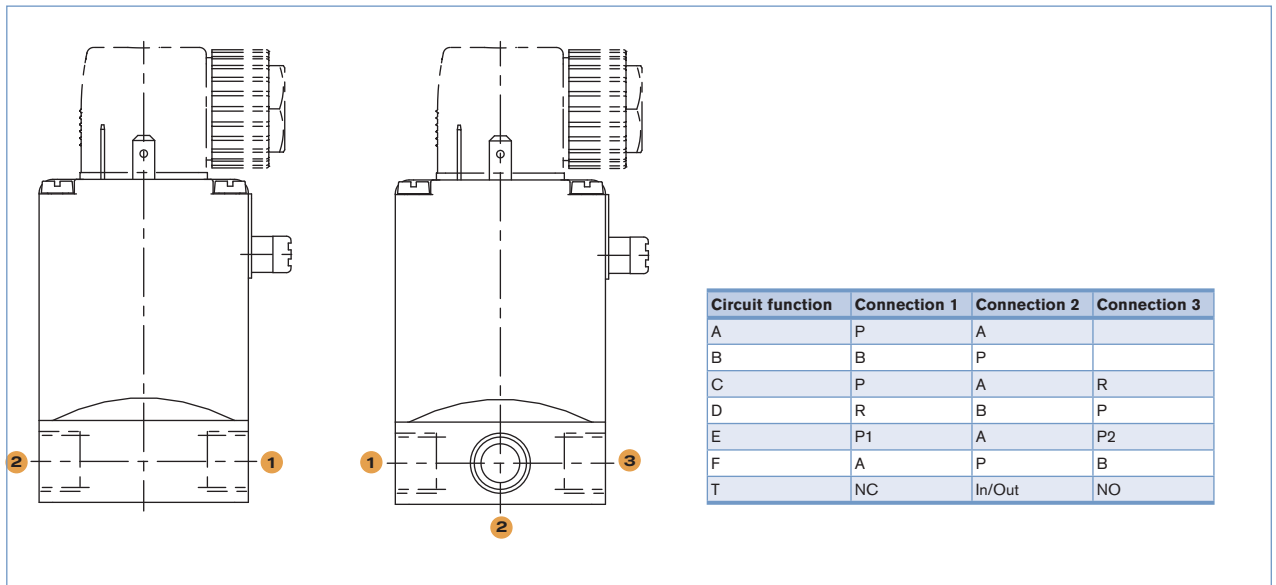
Option	Variable Code	Description
Impulse version	CF02	Bistable magnetic system with inrush and drop-off coil; Continuous operation or operation with short current pulses (min. 150 ms) possible
Oxygen versions	NL02	Suitable for applications with oxygen (non-metal materials that are in contact with the 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^{-2} mbar x l / sec; feasible up to 10^6 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^{-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 (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 General Purpose valve CSA General Purpose valve FM non-incendive for class I / II / III Div.2 T4
	PD45	FM explosionproof for class I Div. 1 and dust-ignitionproof 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, drinking water, FDA

Dimensions [mm]



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)

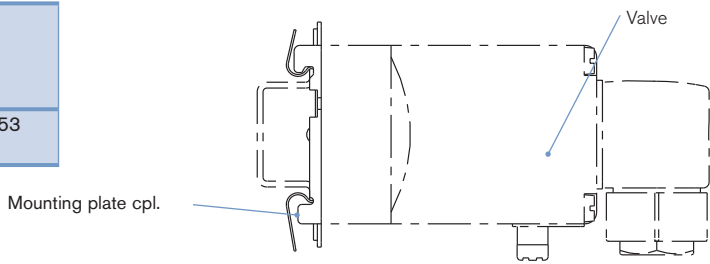
All devices with connection thread G 1/4, manual override and cable plug Type 2508

Circuit function	Orifice [mm]	Seal Material	Housing or seat material	Item no. per voltage/frequency [V/Hz]		
				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
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
C	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
	3.0	FKM	PP	069 917	066 230	022 294
E	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
	4.0	FKM	PP	020 528	-	-
F	4.0	EPDM	PP	-	-	066 032
	4.0	FKM	PP	-	-	-
T	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

²⁾ The listed ID numbers and circuit functions have a body with a straight channel**Note:** Further versions on request

Order chart for accessories

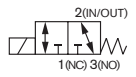
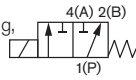
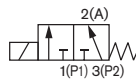
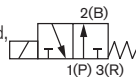
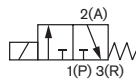
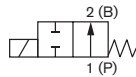
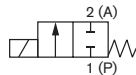
Description	Item no.
Mounting plate cpl. for DIN rail mounting	013 253





Circuit function

- A** 2/2-way direct acting valve, normally closed
- B** 2/2-way direct acting valve, normally open
- C** 3/2-way valve, direct acting, when de-energised Port A exhausted
- D** 3/2-way valve, servo-assisted, outlet B normally pressurized
- E** Mixer valve, direct-acting, in de-energized position, P2→A open, P1 closed
- F** Distribution valve, direct-acting, in de-energized position, P→B open, A closed
- T** 3/2 way valve, universal function, flow direction as required



Explosion proof version

Technical data	
Available body materials	Brass, stainless steel (1.4401), PP (Polypropylene) PVDF (Polyvinylfluoride)
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
for 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 info. please refer to our chemical resistance chart	
Medium temperature for body material brass or stainless steel	NBR 0 to +80 °C EPDM -30 to +90°C FKM 0 to +90 °C FFKM +5 to 90°C
Medium temperature for body material PP or PVDF	NBR 0 to +80 °C EPDM -30 to +80°C FKM 0 to +80 °C FFKM +5 to +80°C
Viscosity	Max. 37mm ² /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 (Terminal box version)	II 2 G Ex d e IIC T4 bzw. T5 II 2 G Ex d e mb IIC T4 bzw. T5 II 2 D Ex tD A21 IP65 T135°C bzw. 100°C
Certificate (Terminal box version)	PTB 03 ATEX 1030 X IECEX PTB 05.0026X
Type of protection (Cable version)	II 2 G Ex mb IIC T4 Gb II 2 D EX mb IIIC T130° Db
Certificate (Cable version)	EPS 16 ATEX 1 111 X IECEX EPS 16.0049X
Fuse	According to inrush current (see also ordering chart)
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

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 [m ³ /h]	Standard Pressure range ^{2) 3)} [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
E	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
T	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 [m ³ /h]	Standard Pressure range ^{2) 3)} [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

¹⁾ Measured at +20 °C, 1 bar²⁾ pressure at valve inlet and free outlet.

²⁾ Devices with FKM or FFKM diaphragm are reduced to a max. pressure of 12 bar

³⁾ 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 permissible operating pressure changes acc. to the following table.

Metal body																		
Valve operation	Max. operating pressure [bar] when using the valve in a new circuit function																	
	Orifice 2mm						Orifice 3mm						Orifice 4mm					
	A ¹⁾	B ¹⁾	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
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

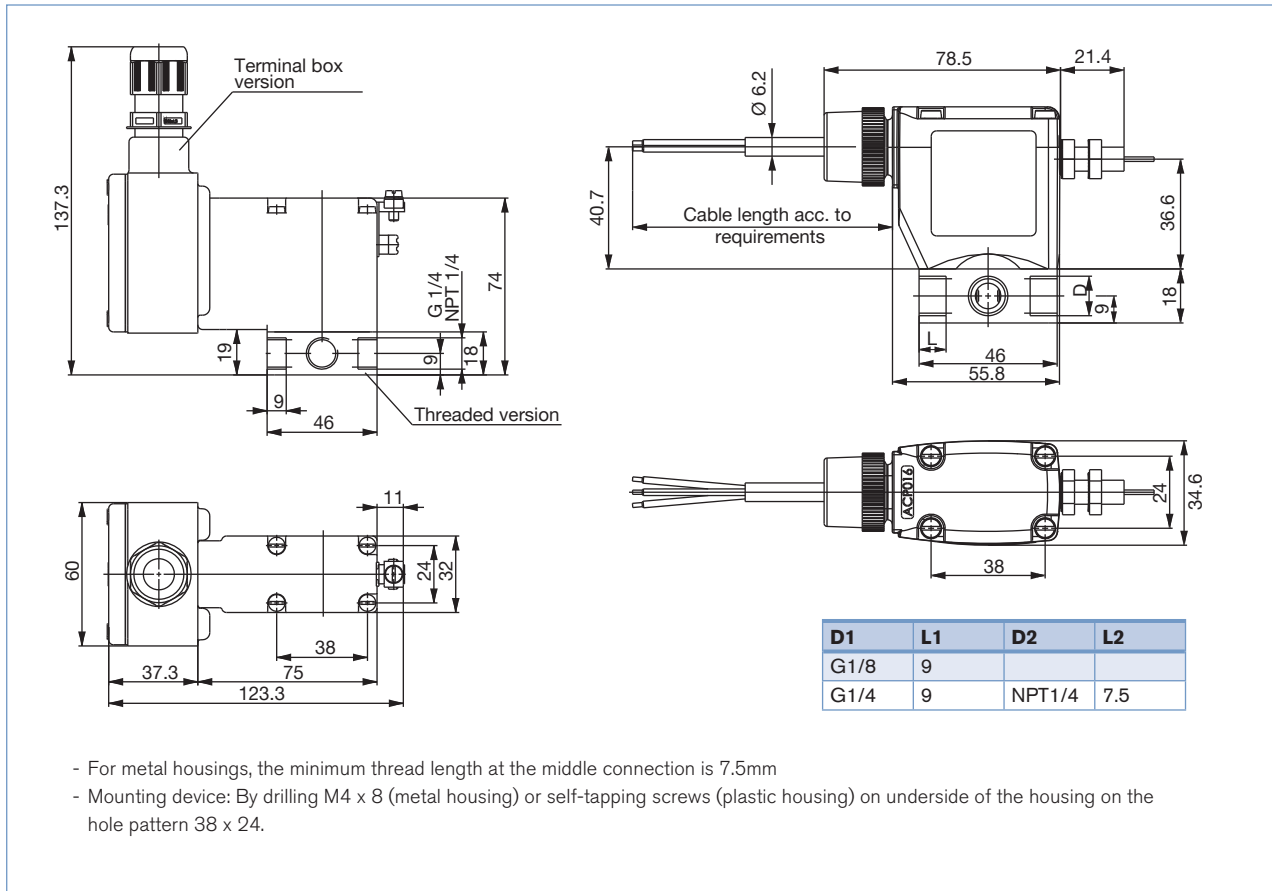
Plastic body																		
Valve operation	Max. operating pressure [bar] when using the valve in a new circuit function																	
	Orifice 2mm						Orifice 3mm						Orifice 4mm					
	A ¹⁾	B ¹⁾	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
C	16	1.5	16	1.5	1.5	16	10	1	10	1	1	10	5	0.8	5	0.8	0.8	5
D	4	16	4.5	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.

Additional options

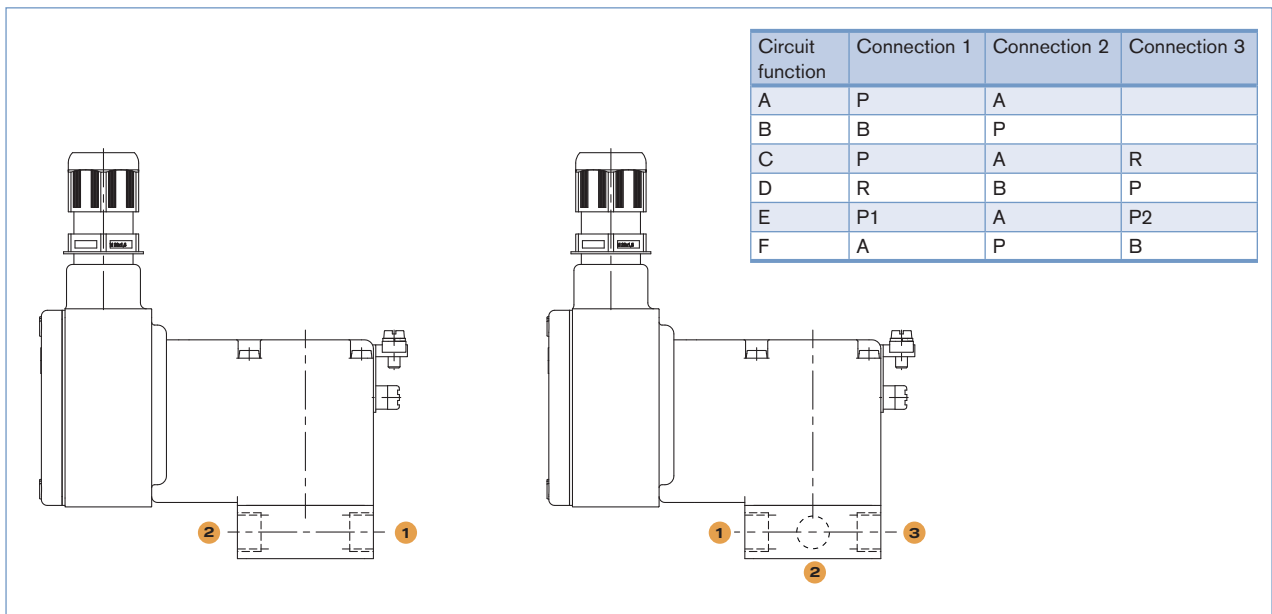
Option	Variable Code	Description
Oxygen versions	NL02	Suitable for applications with oxygen (non-metal materials that are in contact with the medium, are tested and approved according to BAM)
Increased purity requirements e.g. oil, grease and silicone-free	NL50/NL05	Wetted parts are specially cleaned 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 -0.98bar
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

Dimensions [mm]



Port connections

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



Recommended fusing rate (no fuse is required for the cable version)

Voltage [V]	Max. current [A]
24	2
230	0.5
110–120	0.8

Ordering chart

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

Circuit function	Orifice [mm]	Seal Material	Housing or seat material	Electrical connection	Item no. per voltage/frequency [V/Hz]	
					024/UC	230/UC
A ²⁾	3.0	NBR	MS	Terminal box	137 077	137 079
	3.0	NBR	MS	cable	306 005	306 006
	3.0	FKM	Stainless steel	Terminal box	137 081	137 083
	3.0	FKM	Stainless steel	cable	306 007	306 008
C	3.0	NBR	MS	Terminal box	124 619	125 567
	3.0	NBR	MS	cable	305 982	305 985
	3.0	FKM	Stainless steel	Terminal box	135 080	137 075
	3.0	FKM	Stainless steel	cable	306 003	306 004
E	3.0	FKM	Stainless steel	Terminal box	137 085	135 624
	3.0	FKM	Stainless steel	cable	306 009	306 010
F	3.0	FKM	Stainless steel	Terminal box	146 203	137 089
	3.0	FKM	Stainless steel	cable	306 011	306 012
T	4.0	FKM	Stainless steel	Terminal box	133 712	–
	4.0	FKM	Stainless steel	cable	306 050	–

Note: Further versions on request

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