



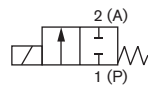
## Direct-acting 2/2 or 3/2-way solenoid valve

- Direct-acting, media-separated valve up to DN 25
- Vibration resistant, block mounted coil system
- Energy saving power reduction for DC versions
- High safety due to electrical position feedback
- Robust, service friendly manual override

The valve operates according to the lever principle and can therefore switch big orifices directly. Available in 2/2-way version as well as a 3/2-way valve. The armature works horizontally on a tightly coupled toggle. The cylinder seal, located at the lower lever, is pressed by the horizontal movement of the valve seat. The plastic-coated metal lever forms a unit with the implemented gas-tight membrane. With this construction the actuator is disconnected from the media fluid housing.

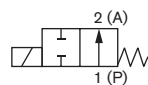
### Circuit function A

2/2-way valve, direct-acting,  
Normally closed



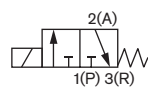
### Circuit function B

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



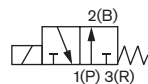
### Circuit function C

3/2-way valve, direct-acting,  
in de-energized position,  
port A exhausted



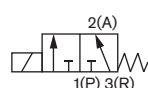
### Circuit function D

3/2-way valve, direct acting,  
in de-energized position,  
port B pressurized



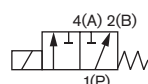
### Circuit function E

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



### Circuit function F

distribution valve, direct-acting,  
in de-energized passage,  
P→B open



Technical data	
<b>Body material</b>	PVC, PVDF, brass
<b>Seal material</b>	NBR, EPDM, FKM
<b>Medium</b>	Aggressive and non-aggressive fluids, neutral gases, aggressive gases according to their diffusion properties
<b>Medium temperature (Body + Seal)</b>	PVC / EPDM -10 to +50 °C PVC / FKM -10 to +50 °C Brass / EPDM -30 to +130 °C * Brass / FKM -10 to +130 °C * Brass / NBR -10 to +90 °C PVDF / FKM -10 to +70 °C PVDF / EPDM -10 to +70 °C
<b>Ambient temperature</b>	Max. +50 °C
<b>Viscosity</b>	37 mm <sup>2</sup> /s
<b>Operating voltage</b>	24 V / UC, 230 V / UC, 24 V / 50 Hz, 230 V / 50 Hz
<b>Voltage tolerance</b>	±10 %
<b>Cycling rate</b>	60/min at AC Max. 6/min at UC
<b>Duty cycle</b>	100%
<b>Electrical connection</b>	Cable plug (supplied as standard)
<b>Protection class</b>	IP65 with cable plug
<b>Installation</b>	As required, preferably with actuator upright

\* High performance version, AC/DC max. +90 °C

Response times [ms]:	Measured at valve outlet at 6 bar and +20°C.
Opening (10 to 20)	Pressure rise 0 to 90%,
Closing (40 to 60)	Pressure relief 100 to 10%

Electrical power consumption			
Inrush	UC [W]		Hold
AC [VA]	UC [W]	AC [VA/W]	UC [W]
100-120	100	48/16	9

### Flow rate: Kv value water [m<sup>3</sup>/h]

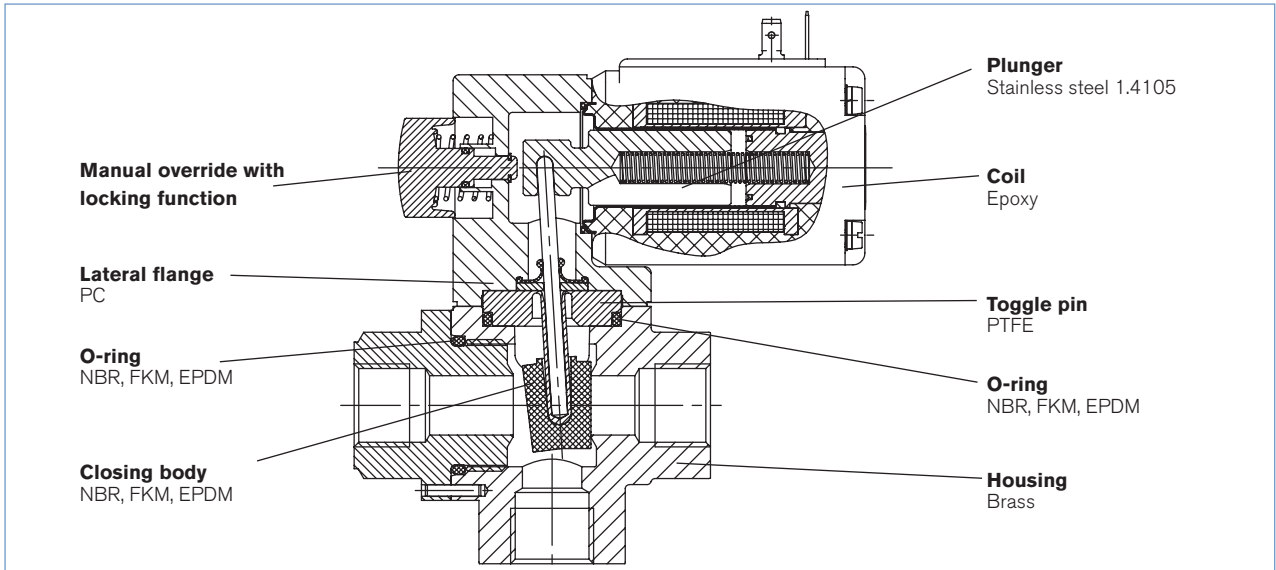
Measured at +20 °C, 1 bar pressure at valve inlet and free outlet

### Pressure values [bar]

Overpressure with respect to atmospheric pressure

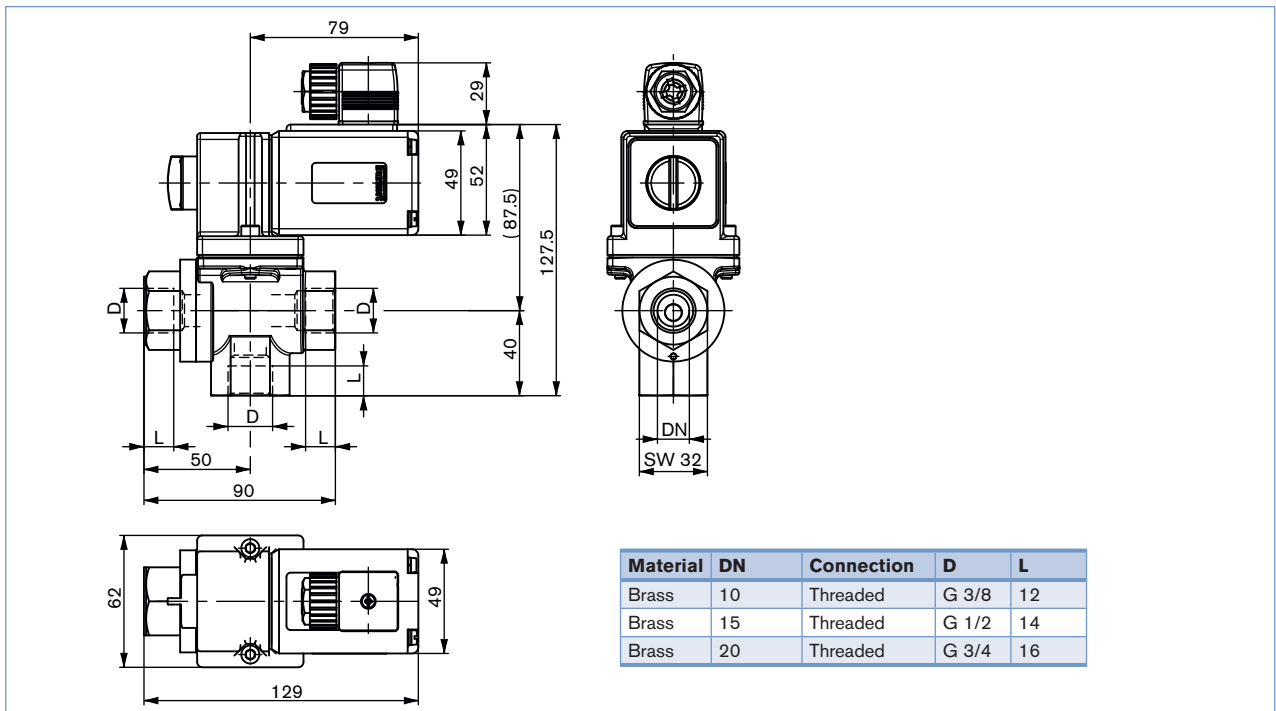
Materials

3/2-way brass version



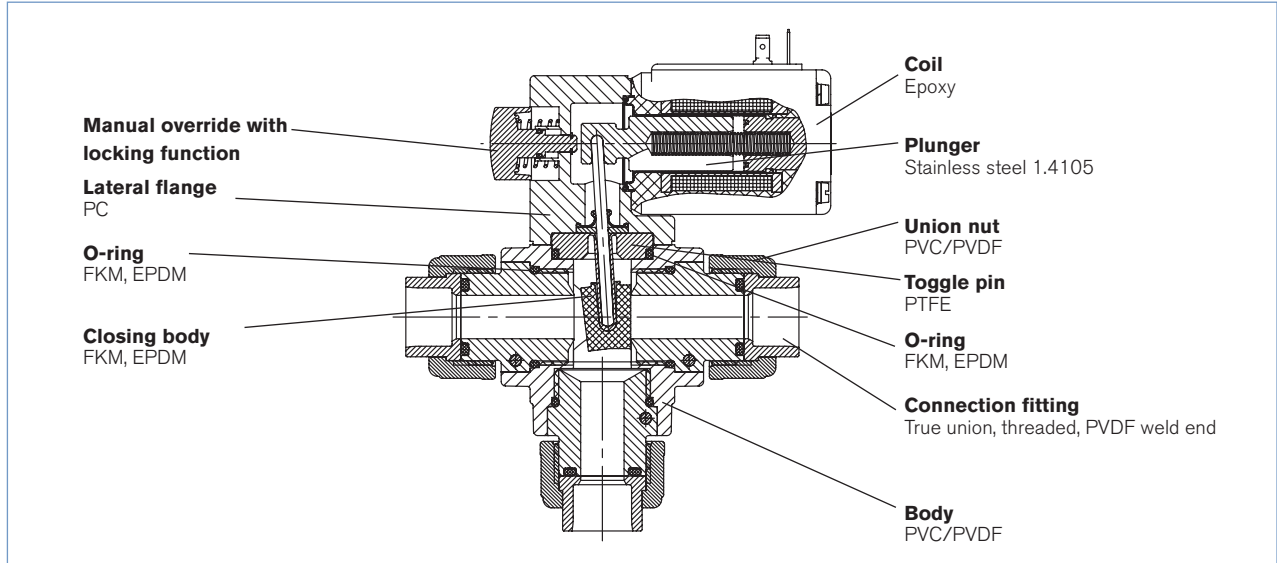
Dimensions [mm]

3/2-way brass version



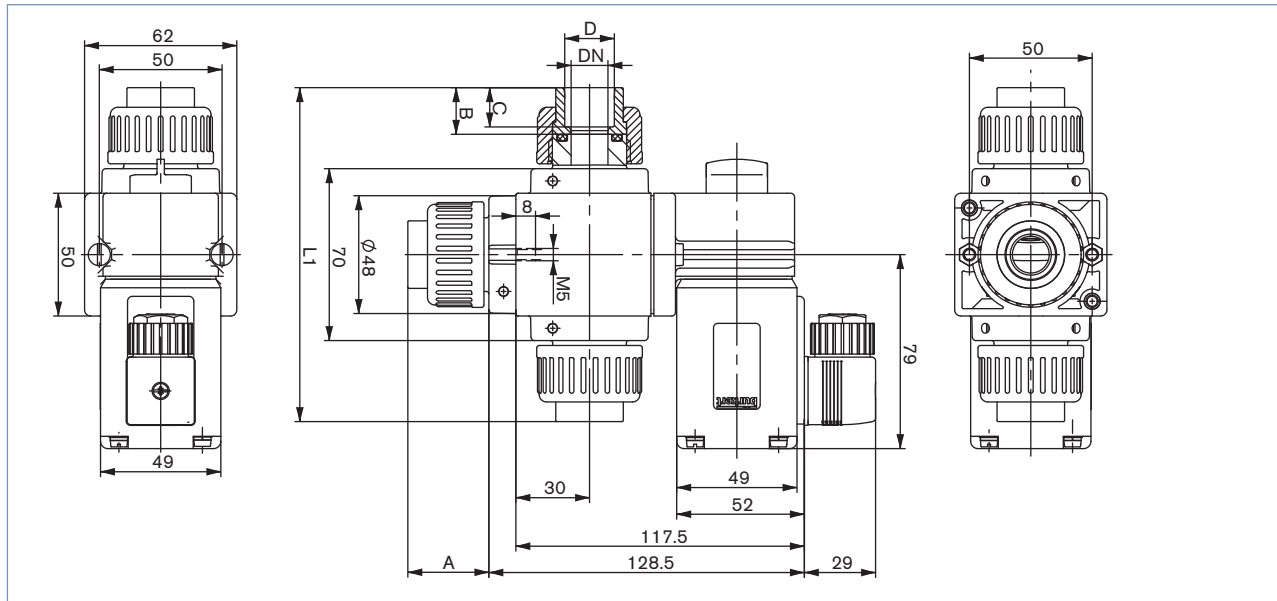
Materials

3/2-way plastic version with union nut and connection fitting



Dimensions [mm]

3/2-way plastic version with union nut and connection fitting



Material	DN	Connection	A	B	C	D	1 L
PVC	10	True union	30	17	14	Ø 16.2	130
		Threaded connection	30	17	12	G 3/8	130
		Threaded connection	30	17	12	NPT 3/8	130
	10 (with port for DN 15)	True union	32	19	16	Ø 20.2	134
		Threaded connection	32	19	13	G 1/2	134
		Threaded connection	32	19	14	NPT 1/2	134
	15	True union	33	19	16	Ø 20.2	136
		Threaded connection	33	19	13	G 1/2	136
		Threaded connection	33	19	14	NPT 1/2	136
	15 (with port for DN 20)	True union	36	22	19	Ø 25.2	142
		Threaded connection	36	22	15	G 3/4	142
		Threaded connection	36	22	16	NPT 3/4	142
20	True union	37	22	19	Ø 25.2	144	
	Threaded connection	37	22	15	G 3/4	144	
	Threaded connection	37	22	16	NPT 3/4	144	
PVDF	10	Weld end	31	18	15	Ø 15.5	132
	15	Weld end	33	19	16	Ø 19.35	136
	20	Weld end	36	21	18	Ø 24.5	142

## Ordering chart for valves

## 3/2-way version, seal material EPDM

Body material	Circuit function	Orifice [mm]	Port connection [inch resp. mm]	Kv value water [m³/h]	Pressure range [bar]	Item no. per voltage / frequency			
						24 V/UC	230 V/UC	24 V/50 Hz	230 V/50 Hz
PVC	C	10	G 3/8	2.0	0-1	x	x	-	-
			G 1/2	2.0	0-1	x	x	-	-
			True union Ø 16	2.0	0-1	x	x	-	-
			True union Ø 20	2.0	0-1	x	x	-	-
		15	G 1/2	4.0	0-0.5	x	x	-	-
			True union Ø 20	4.0	0-0.5	x	x	-	-
			True union Ø 25	4.0	0-0.5	x	x	-	-
		20	G 3/4	5.0	0-0.25	x	x	-	-
			True union Ø 25	5.0	0-0.25	x	x	-	-
	D	10	G 3/8	2.0	0-1	x	x	x	x
			G 1/2	2.0	0-1	x	x	x	x
			True union Ø 16	2.0	0-1	x	x	x	x
			True union Ø 20	2.0	0-1	x	x	x	x
		15	G 1/2	4.0	0.5	x	x	x	x
			True union Ø 20	4.0	0.5	x	x	x	x
			True union Ø 25	4.0	0.5	x	x	x	x
		20	G 3/4	5.0	0-0.25	x	x	x	x
			True union Ø 25	5.0	0-0.25	x	x	x	x
		F	10	G 3/8	2.0	0-1	x	x	x
	G 1/2			2.0	0-1	x	x	076 537	x
	True union Ø 16			2.0	0-1	055 770	x	064 266	052 546
True union Ø 20	2.0			0-1	x	x	x	x	
15	G 1/2		4.0	0.5	025 876	x	x	x	
	True union Ø 20		4.0	0.5	049 883	x	058 279	052 071	
	True union Ø 25		4.0	0.5	x	x	x	x	
20	G 3/4		5.0	0-0.25	x	x	x	x	
	True union Ø 25		5.0	0-0.25	067 076	x	040 921	054 564	
PVDF	F		10	Weld end Ø 16	2.0	0-1	x	x	x
		15	Weld end Ø 20	4.0	0-0.5	x	x	x	x
		20	Weld end Ø 25	5.0	0-0.25	x	x	x	x
Brass	C	10	G 3/8	2.0	0-1	x	x	-	-
		15	G 1/2	4.0	0-0.5	046 648	x	-	-
		20	G 3/4	5.0	0-0.25	x	x	-	-
	D	10	G 3/8	2.0	0-1	x	x	x	x
		15	G 1/2	4.0	0-0.5	x	x	x	x
		20	G 3/4	5.0	0-0.25	x	x	x	x
	F	10	G 3/8	2.0	0-1	x	x	x	x
		15	G 1/2	4.0	0-0.5	x	x	x	053 634
		20	G 3/4	5.0	0-0.25	x	x	x	x

## 3/2-way version, seal material NBR

Body material	Circuit function	Orifice [mm]	Port connection [inch]	Kv value water [m³/h]	Pressure range [bar]	Item no. per voltage / frequency			
						24 V/UC	230 V/UC	24 V/50 Hz	230 V/50 Hz
Brass	C	10	G 3/8	2.0	0-1	048 997	059 302	-	-
		15	G 1/2	4.0	0-0.5	062 737	062 481	-	-
		20	G 3/4	5.0	0-0.25	x	049 470	-	-
	D	10	G 3/8	2.0	0-1	x	x	x	x
		15	G 1/2	4.0	0-0.5	021 964	x	x	051 556
		20	G 3/4	5.0	0-0.25	x	x	x	x
	F	10	G 3/8	2.0	0-1	064 025	x	x	062 960
		15	G 1/2	4.0	0-0.5	x	x	045 916	062 124
		20	G 3/4	5.0	0-0.25	140 798	x	062 119	079 567

X on request

- version not possible

## Ordering chart for valves

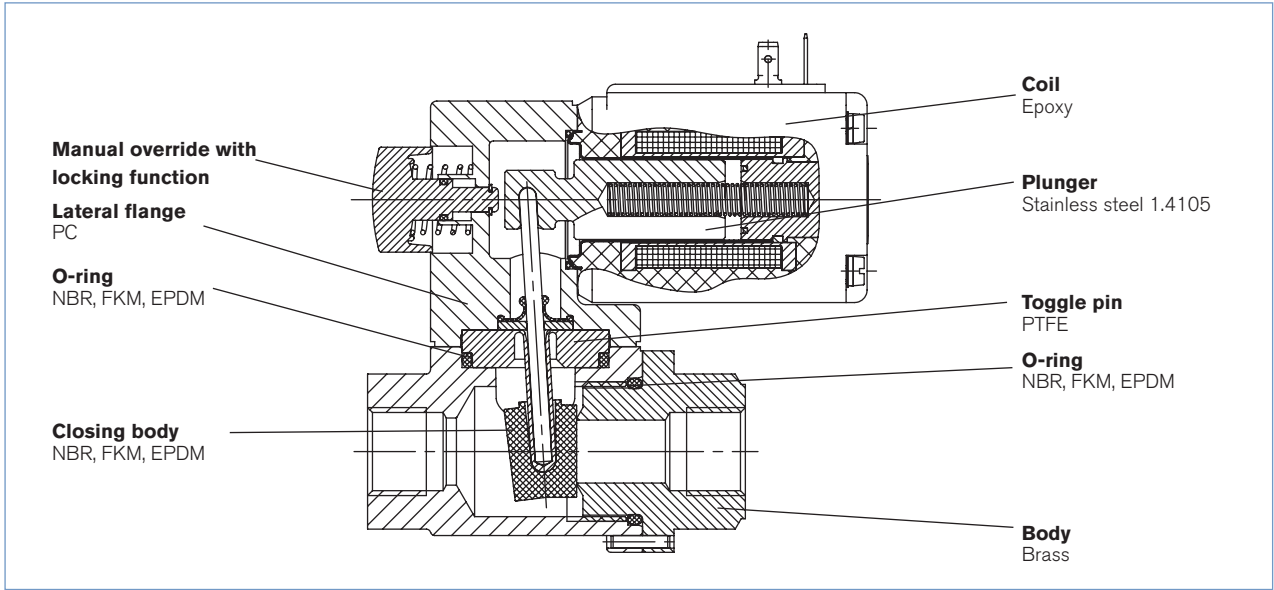
## 3/2-way version, seal material FKM

Body material	Circuit function	Orifice [mm]	Port connection [inch resp. mm]	Kv value water [m³/h]	Pressure range [bar]	Item no. per voltage / frequency				
						24 V/UC	230 V/UC	24 V/50 Hz	230 V/50 Hz	
PVC	C	10	G 3/8	2.0	0-1	x	x	-	-	
			G 1/2			x	x	-	-	
			True union Ø 16			x	x	-	-	
			True union Ø 20			x	x	-	-	
		15	G 1/2	4.0	0-0.5	x	x	-	-	
			True union Ø 20			x	x	-	-	
			True union Ø 25			x	x	-	-	
		20	G 3/4	5.0	0-0.25	x	x	-	-	
			True union Ø 25			x	x	-	-	
	D	10	2.0	0-1	G 3/8	x	x	x	x	
					G 1/2	x	x	x	x	
					True union Ø 16	x	x	x	x	
			True union Ø 20	x	x	x	172 866			
			15	4.0	0-0.5	G 1/2	x	x	x	x
						True union Ø 20	x	x	x	x
		True union Ø 25				4.0	0-0.5	x	x	x
		20	5.0	0-0.25	G 3/4	x	x	x	x	
					True union Ø 25	x	x	x	x	
		F	10	2.0	0-1	G 3/8	065 194	x	x	052 183
						G 1/2	x	x	x	x
True union Ø 16	058 362					x	x	052 619		
True union Ø 20	x			x	x	x				
15	4.0			0.5	G 1/2	x	x	x	x	
					True union Ø 20	058 710	x	x	050 904	
			True union Ø 25		x	020 687	x	042 470		
20	5.0		0-0.25	G 3/4	x	x	x	x		
				True union Ø 25	058 363	x	068 352	066 280		
PVDF	C		10	Weld end Ø 16	2.0	0-1	x	x	-	-
			15	Weld end Ø 20	4.0	0-0.5	x	x	-	-
		20	Weld end Ø 25	5.0	0-0.25	x	x	-	-	
	E	15	G 1/2	4.0	0-0.3	208100	x	-	-	
	F	10	Weld end Ø 16	2.0	0-1	x	x	x	235041	
		15	Weld end Ø 20	4.0	0-0.5	x	x	x	x	
20		Weld end Ø 25	5.0	0-0.25	x	x	x	x		
Brass	C	10	G 3/8	2.0	0-1	x	x	-	-	
		15	G 1/2	4.0	0-0.5	x	x	-	-	
		20	G 3/4	5.0	0-0.25	x	x	-	-	
		D	10	G 3/8	2.0	0-1	x	x	x	x
			15	G 1/2	4.0	0-0.5	x	x	x	x
			20	G 3/4	5.0	0-0.25	x	x	x	x
	F	10	G 3/8	2.0	0-1	x	x	x	x	
		15	G 1/2	4.0	0-0.5	053 050	069 814	x	058 915	
		20	G 3/4	5.0	0-0.25	x	x	x	x	

X on request  
- version not possible

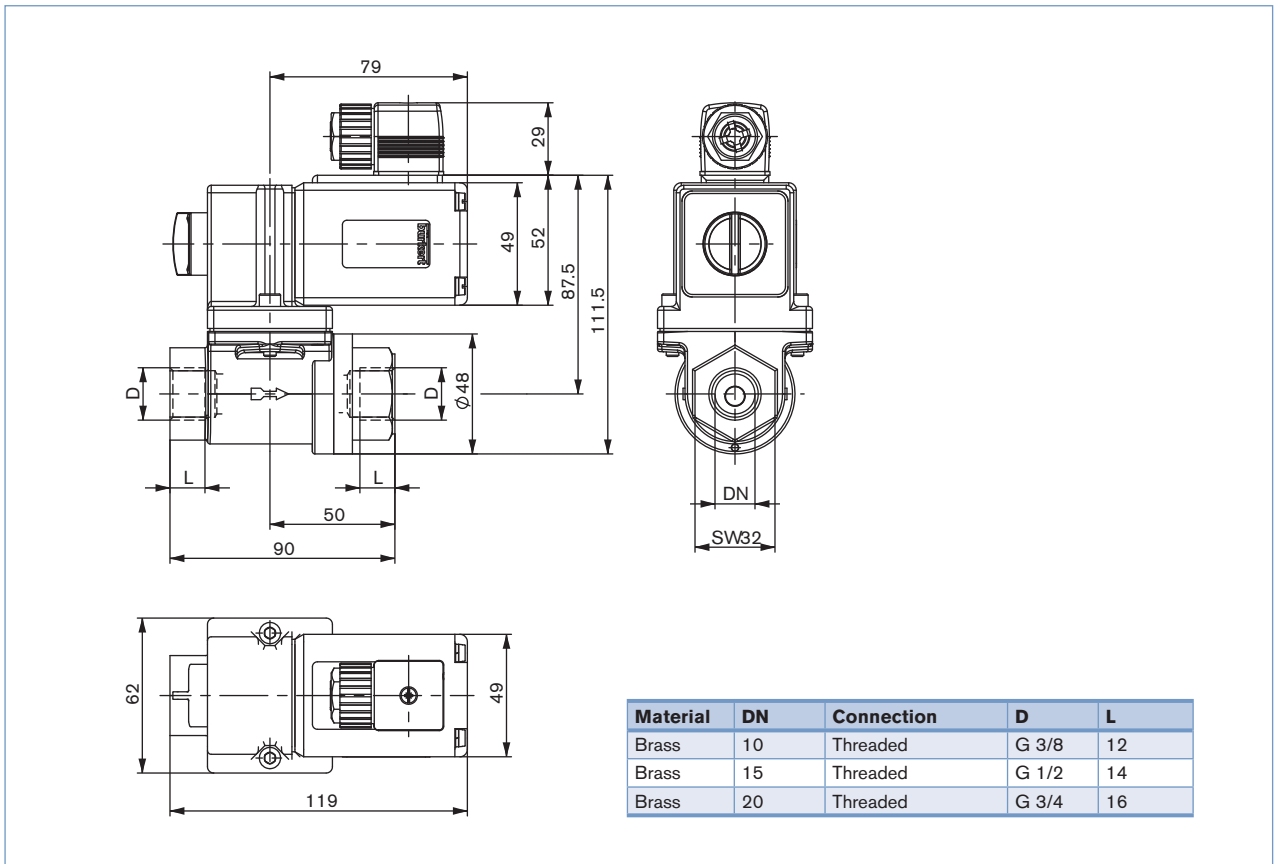
Materials

2/2-way brass version



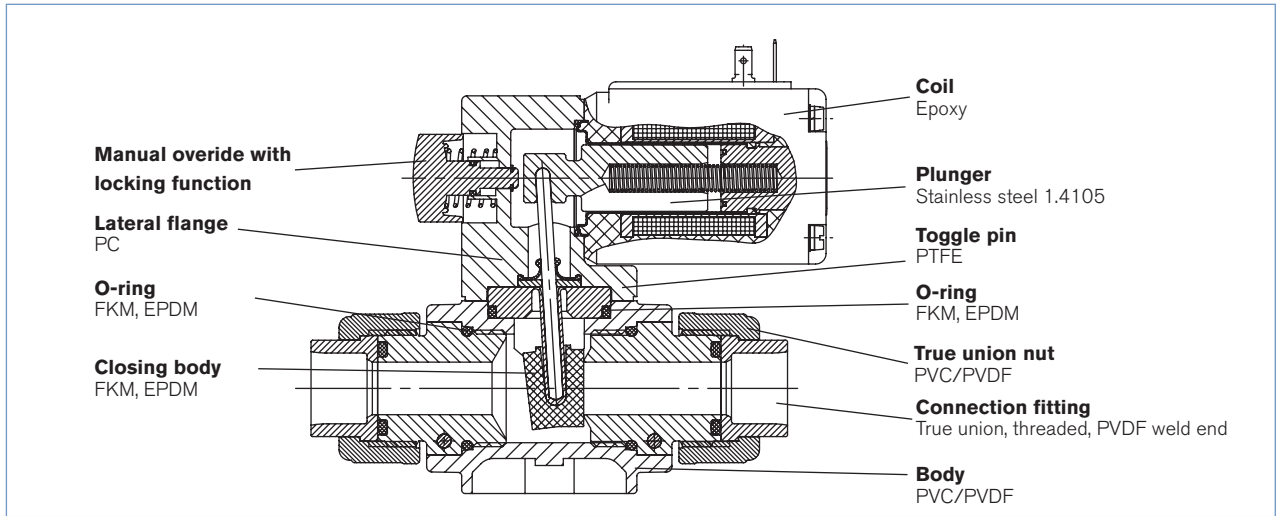
Dimensions [mm]

2/2-way brass version



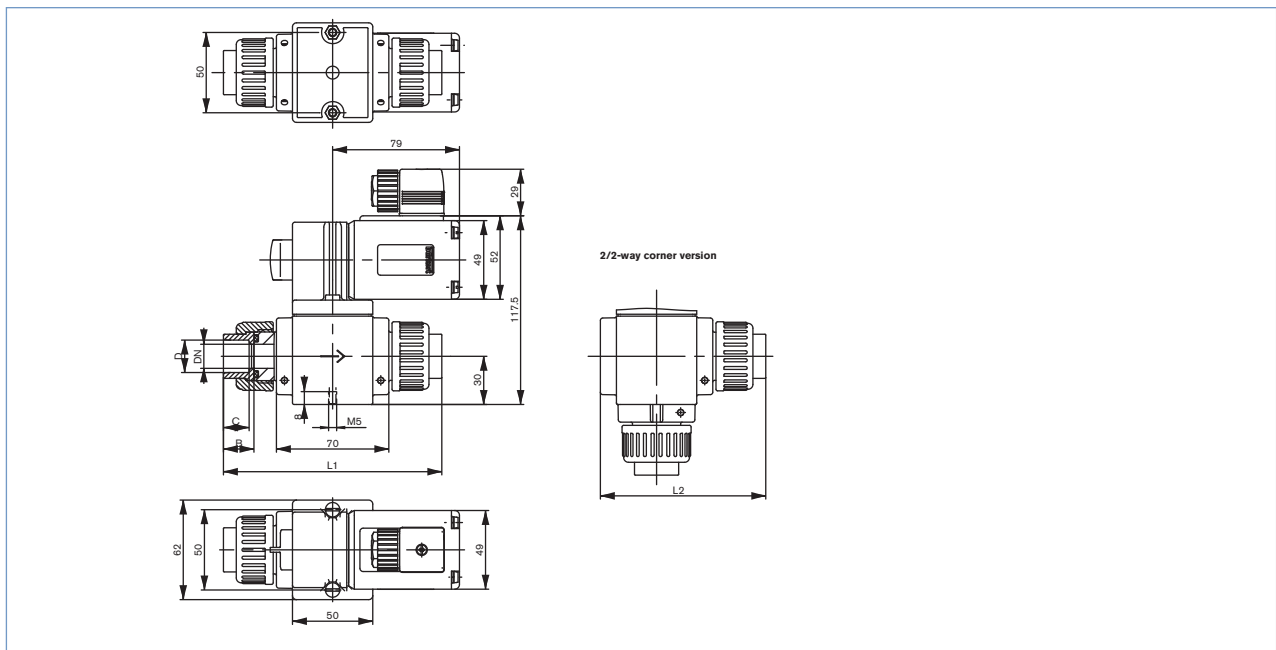
Materials

2/2-way plastic version with true union nut and connection fitting



Dimensions [mm]

2/2-way plastic version with true union nut and connection fitting



Material	DN	Connection	B	C	D	L 1	L 2
PVC	10	True union	17	14	Ø 16.2	130	99.5
		Threaded	17	12	G 3/8	130	99.5
		Threaded	17	12	NPT 3/8	130	99.5
	10 (with port for DN 15)	True union	19	16	Ø 20.2	134	101.5
		Threaded	19	13	G 1/2	134	101.5
		Threaded	19	14	NPT 1/2	134	101.5
	15	True union	19	16	Ø 20.2	136	103.0
		Threaded	19	13	G 1/2	136	103.0
		Threaded	19	14	NPT 1/2	136	103.0
	15 (with port for DN 20)	True union	22	19	Ø 25.2	142	106.0
		Threaded	22	15	G 3/4	142	106.0
		Threaded	22	16	NPT 3/4	142	106.0
20	True union	22	19	Ø 25.2	144	107.0	
	Threaded	22	15	G 3/4	144	107.0	
	Threaded	22	16	NPT 3/4	144	107.0	
PVDF	10	Weld end	18	15	Ø 15.5	132	100.5
	15	Weld end	19	16	Ø 19.35	136	103.0
	20	Weld end	21	18	Ø 24.5	142	106.0

## Ordering chart for valves

## 2/2-way version, seal material EPDM

Body material	Circuit function	Orifice [mm]	Port connection [inch resp. mm]	Kv value water [m <sup>3</sup> /h]	Pressure range [bar]	Item no. per voltage / frequency			
						24 V/UC	230 V/UC	24 V/50 Hz	230 V/50 Hz
PVC	A	10	G 3/8	2.0	0-3	058 900	x	x	056 512
			G 1/2	2.0	0-3	023 759	x	x	056 795
			True union Ø 16	2.0	0-3	046 949	264 450	x	050 549
		15	True union Ø 20	2.0	0-3	x	x	x	056 791
			G 1/2	4.5	0-1	067 832	x	x	054 831
			True union Ø 20	4.5	0-1	050 809	168 193	051 028	055 423
	20	True union Ø 25	4.5	0-1	x	x	x	x	
		G 3/4	6.0	0-0.5	049 222	x	x	056 797	
		True union Ø 25	6.0	0-0.5	045 225	x	053 992	051 257	
	B	10	G 3/8	2.0	0-3	x	x	-	-
			G 1/2	2.0	0-3	x	x	-	-
			True union Ø 16	2.0	0-3	041 272	x	-	-
		15	True union Ø 20	2.0	0-3	x	x	-	-
			G 1/2	4.5	0-1	x	x	-	-
			True union Ø 20	4.5	0-1	x	x	-	-
	20	True union Ø 25	4.5	0-1	x	x	-	-	
		G 3/4	6.0	0-0.5	x	x	-	-	
		True union Ø 25	6.0	0-0.5	x	051 748	-	-	
PVDF	A	10	Weld end Ø 16	2.0	0-3	131 273	274 340	x	x
		15	Weld end Ø 20	4.5	0-1	x	x	x	197 985
		20	Weld end Ø 25	6.0	0-0.5	x	x	x	x
	B	15	Weld end Ø 20	4.5	0-1	x	x	-	-
Brass	A	10	G 3/8	2.0	0-3	x	x	x	x
		15	G 1/2	4.5	0-1	x	x	x	056 281
		20	G 3/4	6.0	0-0.5	x	x	x	x
	B	10	G 3/8	2.0	0-2	x	x	x	x
		15	G 1/2	4.5	0-1	049 793	x	x	x
		20	G 3/4	6.0	0-0.5	x	x	x	x

## 2/2-way version, seal material NBR

Body material	Circuit function	Orifice [mm]	Port connection [inch resp. mm]	Kv value water [m <sup>3</sup> /h]	Pressure range [bar]	Item no. per voltage / frequency			
						24 V/UC	230 V/UC	24 V/50 Hz	230 V/50 Hz
Brass	A	10	G 3/8	2.0	0-3	057 475	x	x	053 059
		15	G 1/2	4.5	0-1	054 102	x	x	052 221
		20	G 3/4	6.0	0-0.5	049 751	x	063 602	048 490
	B	10	G 3/8	2.0	0-2	x	051 685	x	x
		15	G 1/2	4.5	0-1	058 371	046 466	x	x
		20	G 3/4	6.0	0-0.5	050 461	053 807	x	x

X on request

- version not possible



## Ordering chart for valves

## 2/2-way version, seal material FKM

Body material	Circuit function	Orifice [mm]	Port connection [inch resp. mm]	Kv value water [m <sup>3</sup> /h]	Pressure range [bar]	Item no. per voltage / frequency			
						24 V/UC	230 V/UC	24 V/50 Hz	230 V/50 Hz
PVC	A	10	G 3/8	2.0	0-3	x	x	x	x
			G 1/2	2.0	0-3	086 273	x	x	x
			True union Ø 16	2.0	0-3	047 915	x	052 953	050 443
			True union Ø 20	2.0	0-3	056 060	x	055 817	056 789
		15	G 1/2	4.5	0-1	047 398	x	x	056 663
			True union Ø 20	4.5	0-1	053 882	x	051 641	050 787
			True union Ø 25	4.5	0-1	x	x	x	058 369
	20	G 3/4	6.0	0-0.5	x	x	x	056 794	
		True union Ø 25	6.0	0-0.5	056 495	x	050 551	051 351	
	B	10	G 3/8	2.0	0-3	x	x	-	-
			G 1/2	2.0	0-3	x	x	-	-
			True union Ø 16	2.0	0-3	058 361	053 221	-	-
			True union Ø 20	2.0	0-3	x	x	-	-
		15	G 1/2	4.5	0-1	x	x	-	-
True union Ø 20			4.5	0-1	047 503	045 439	-	-	
True union Ø 25			4.5	0-1	x	x	-	-	
20	G 3/4	6.0	0-0.5	x	x	-	-		
	True union Ø 25	6.0	0-0.5	051 969	x	-	-		
PVDF	A	10	Weld end Ø 16	2.0	0-3	78854	x	x	x
		15	Weld end Ø 20	4.5	0-1	x	x	x	130920
		20	Weld end Ø 25	6.0	0-0.5	x	x	x	x
	B	10	Weld end Ø 16	2.0	0-2	x	255332	-	-
		15	Weld end Ø 20	4.5	0-1	x	x	-	-
		20	Weld end Ø 25	6.0	0-0.5	x	x	-	?
Brass	A	10	G 3/8	2.0	0-3	054 053	x	048 664	044 502
		15	G 1/2	4.5	0-1	025 537	x	x	040 549
		20	G 3/4	6.0	0-0.5	069 752	x	x	048 622
	B	10	G 3/8	2.0	0-2	x	x	x	x
		15	G 1/2	4.5	0-1	059 360	046 643	x	x
		20	G 3/4	6.0	0-0.5	x	x	x	x

X on request  
- version not possible

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