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Selection Chart

Solenoid valves

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Solenoid valves at a glance

Category	Type	Function	Required Δp [in bar]	Process connection	Pressure range [in bar] [in MPa]	Media temperature [in °C]	Diameter [DN in mm]	Body material			Seal material Diaphragm material					Media				Forerunner type	Special features and versions	Area of application
								Brass	VA	Plastic	NBR	EPDM	FKM	PTFE*	FFKM*	Neutral fluids	Contaminated fluids	Aggressive fluids	Neutral gases			
Direct-acting plunger valves	6011	2/2	–	M5, G1/8, NPT 1/8, SFB	0 … 21 0 … 2.1	–10 … +100	1.2 … 2.4	S	S	S	S	S	S	N	N	x	–	–	x	–		□
	6012	3/2	–	M5, G1/8 … 1/4, PIC, NPT 1/8, SFB	0 … 10 0 … 1	–10 … +100	1.2 … 2.0	S	S	S	S	S	S	N	N	x	–	–	x	–		□
	6013	2/2	–	G 1/8 … 3/8, NPT 1/8 … 3/8, SFB	0 … 25 0 … 2.5	–10 … +180	2 … 6	S	S	N	S	A	S	S	A	x	–	–	x	–	FFKM only as seat seal	□
	6014	3/2	–	G 1/8 … 1/4, NPT 1/8 … 1/4, SFB	0 … 16 0 … 1.6	–10 … +120	1.5 … 3.0	S	S	S	S	A	S	A	A	x	–	–	x	–	PTFE only up to DN 2.0; FFKM only seat seal and DN 2.0	□
	6027	2/2	–	G 1/4 … 1/2, NPT 1/4 … 1/2	0 … 250 0 … 25	–40 … +160	1,2 … 12	S	S	N	N	A	S	S	N	x	–	o	x	0285, 2200, 0243, 0255		□
	2610	2/2	–	G 1/4 … 1/2 NPT 1/4 … 1/2	0 … 10 0 … 1	–200 … +180	6 … 10	S	S	N	N	N	N	S	N	x	–	x	x	–	Media separated	
Direct-acting pivoted armature valves	0330	2/2 3/2	–	G 1/4, NPT 1/8	0 … 16 0 … 1.6	–30 … +90	2 … 4	S	S	N	S	A	S	N	A	x	x	x	x	0124, 0332, 0780, 0788	Media separated	
	0331	2/2 3/2	–	SFB	0 … 16 0 … 1.6	–30 … +90	2 … 3	S	S	N	N	A	S	N	N	x	x	x	x	0125, 0333, 0780, 0788	Media separated	
	0121	2/2 3/2	–	G 1/4, G 3/8	0 … 4 0 … 0.4	–10 … +90	2 … 8	N	S	S	N	A	S	N	S	x	x	x	x	0789	Up to DN 8, media separated	
Direct-acting toggle valves	0131	2/2 3/2	–	G 3/8 … 1/2	0 … 3 0 … 0.3	–30 … +50	10 … 20	S	N	S	N	S	S	N	N	x	x	x		0323, 0223	Media separated	
Servo-assisted piston valves	6240	2/2	–	G 1/4 … 1/2	0 … 250 (25/40) 0 … 25 (2.5/4)	–40 … +160	6, 13	S	S	N	N	A	S	S	N	x	–	o	x	2400		○
	5404	2/2	1.0	G 1/2 … 1 NPT 1/4 … 2, DIN flange	1 … 50 0.1 … 5	–10 … +160	12 … 25	S	N	N	S	N	A	S	N	x	–	–	x	0404, 0406	Flange version in grey cast iron	○
	6407	2/2	–	G 1/2 … 1, DIN flange	0 … 10 0 … 1	–20 … +150	13 … 25	S	N	N	N	N	N	S	N	x	–	–	x	0407	Flange version in grey cast iron, fixed coupled	○
	0340	3/2	0.5	G 1/4 … 1 1/2	0.5 … 16 0.05 … 1.6	0 … +90	8 … 40	S	N	N	S	N	N	N	N	x	–	–	x	0342, 0786	Pilot media separated	
Servo-assisted diaphragm valves	6213EV	2/2	– (HP00)	G 1/4 … 2, NPT 3/8 … 1	0 … 10 0 … 1	–30 … +120	10 … 40	S	S	N	S	S	S	N	N	x	–	–	x	–	Spring coupled	△
	6281EV	2/2	0.5	G 3/8 … 2, NPT 1/2 … 1	0.2 … 16 0.02 … 1.6	–30 … +120	13 … 50	S	S	N	S	S	S	N	N	x	–	–	x	0280, 5281		△
	0290	2/2	–	G 1/2 … 2, NPT 1/2 … 2 1/2, DIN flange	0 … 16 0 … 1.6	–30 … +120	12 … 50	S	S	N	S	S	S	N	N	x	–	–	x	–	Flange version in grey cast iron, fixed coupled	△
	5282	2/2	0.2	G 1/2 … 2 1/2, DIN flange	0.2 … 16 0.02 … 1.6	–30 … +90	13 … 50	S	S	S1	S	S	S	N	N	x	x	x	x	–	Flange version in grey cast iron, pilot media separated	△

PIC = Push-in connection | SFB= Specific flange Bürkert

□ Universal for gases + fluids

S = Standard | A = On request | N = Not available | 1 = plastic version: Type 0142

○ Gas and/or steam applications

** only as seal material | x = suitable | o = partially suitable | - = not suitable*

△ suitable for water applications

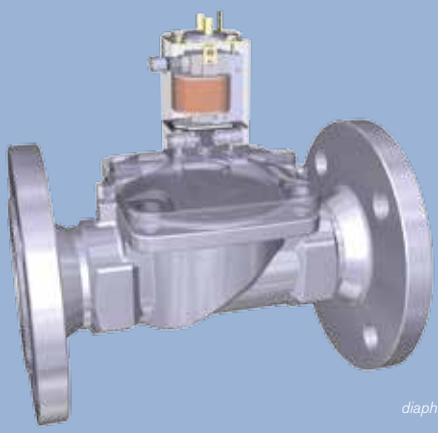
Water vapour pressure table

Temperature	Pressure		
°C	bar	MPa	psi
100	1.0	0.1	14.5
110	1.4	0.1	20.3
120	2.0	0.2	29.0
130	2.7	0.3	39.2
140	3.6	0.4	52.2
150	4.8	0.5	69.6
160	6.2	0.6	89.8
170	7.9	0.8	114.6
180	10.0	1.0	145.0
190	12.5	1.3	181.3
200	15.5	1.6	224.8
210	19.1	1.9	277.0
220	23.2	2.3	336.4
230	28.0	2.8	406.0
240	33.5	3.3	485.8
250	39.8	4.0	577.1

Reference: saturated vapour

Water vapour pressure table

Pressure conversion



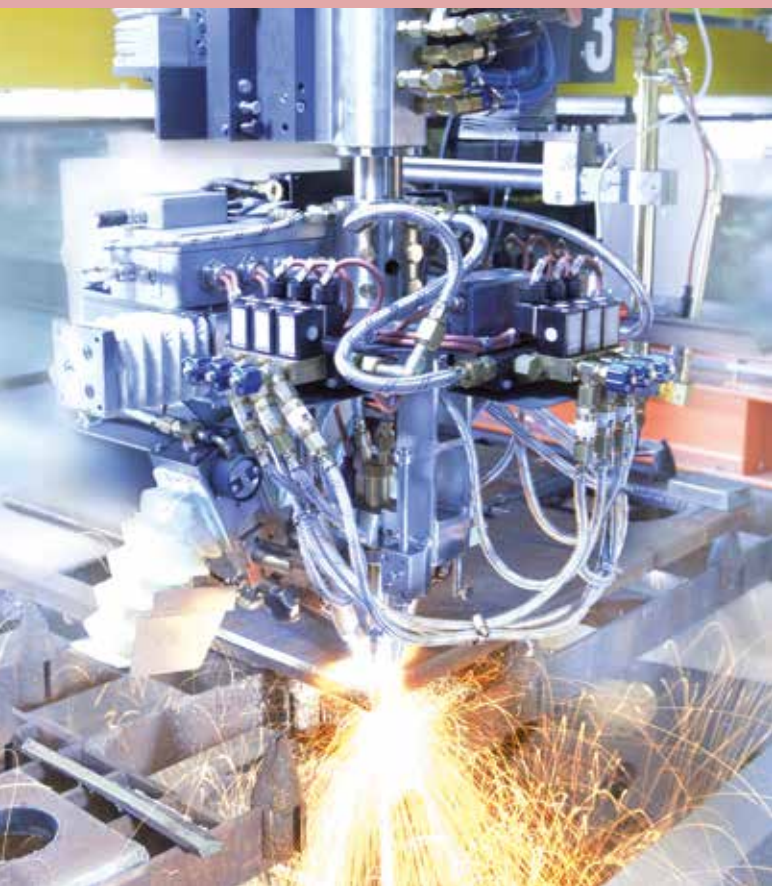
Servo-assisted diaphragm valve 5282

	Pa	MPa	bar	mbar =hPa	psi
Pa	1	$1x10^{-6}$	$1x10^{-5}$	$1x10^{-2}$	$1.45x10^{-4}$
MPa	$1x10^{6}$	1	10	$1x10^{4}$	145.04
bar	$1x10^{5}$	0,1	1	$1x10^{-3}$	14.5
mbar	100	$1x10^{-4}$	$1x10^{-3}$	1	$1.45x10^{-2}$
psi	$6.89x10^{3}$	$6.89x10^{-3}$	$6.89x10^{-2}$	68.9	1

MPa	bar	psi
0	0	0.0
0.01	0.1	1.5
0.02	0.2	2.9
0.05	0.5	7.3
0.1	1	14.5
0.25	2.5	36
0.6	6	87.0
1	10	145.0
1.6	16	232.1
2	20	290.1
2.5	25	362.6
4	40	580.2
6.4	64	928.2
10	100	1,450.4
12	120	1,740.5
16	160	2,320.6
20	200	2,900.8
25	250	3,625.9

Pressure conversion

Temperature conversion



-40 ... + 100°C

°C	°F
–40	–40
–30	–22
–20	–4
–10	14
0	32
10	50
20	68
30	86
40	104
50	122
60	140
70	158
80	176
90	194
100	212

°C= (5/9) x (°F-32)
°F= (9/5) x °C+32

+110 ... + 250°C

°C	°F
110	230
120	248
130	266
140	284
150	302
160	320
170	338
180	356
190	374
200	392
210	410
220	428
230	446
240	464
250	482

Temperature conversion

Kinematic viscosity

Solenoid valve Type 6027

Centistokes (=mm²/s)	°Engler	Saybolt Universal Second	Redwood Second (No. 1)	*Example / at temperature*
cSt	**°E**	**SUS**	**SRW No. 1**	
1	1	28	27	*Water / 20 °C*
12	2	65	55	
22	3	100	90	
30	4	140	120	
38	5	175	155	
45	6	210	185	
60	8	275	245	*Vegetable oil / 20 °C*
75	10	345	305	
90	12	415	370	
115	15	525	465	
150	20	685	610	
200	26	910	810	
300	39	1385	1215	
400	53	1820	1620	
500	66	2275	2025	
750	97	3365	2995	
1500	197	6820	6075	*Natural honey / 45 °C*

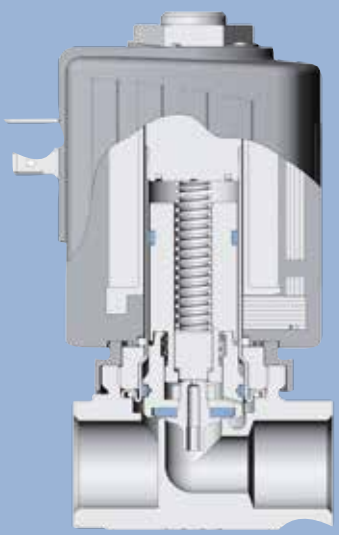
The maximum viscosity specified in the data sheets refers to the indicated switching times. Higher viscosities can be switched, but increase the switching time.

Kinematic viscosity

Coil encapsulation

Abbre-viations	Materials	General chemical resistance
PA	Polyamide	See plastics for bodies.
EP	Epoxy	Resistant to nearly all chemicals. Not resistant to low-molecular organic acids in high concentrations and highly oxidising substances.
1.4305	Stainless steel	Resistant to light acids and caustic solutions.

Coil encapsulation



Piston valve Type 6240

General:

The Kv value corresponds to the water flow rate through a valve (in m^3/h) at a pressure differential of 1 bar (exactly 0.98 bar) and a water temperature of 5 – 30 °C. Depending on the valve size it is often stated in l/min.

Fluids:

For fluids the minimum required Kv value for a valve is determined from the operating data required for the application based on the following equation, if the pressure loss is between 0.35 and 1 bar:

$$Kv = Q \cdot \sqrt{\frac{1\ bar}{\Delta p} \cdot \frac{\rho}{1000\ kg/m^3}}$$

Special case – water:

For water as a medium (ρ = 1000 kg/m³) the formula is simplified to:

$$Kv = Q \cdot \sqrt{\frac{1\ bar}{\Delta p}}$$

Conversion factors:

$Kv = 0.86 \cdot c_v$

$Kv = 1{,}078 \cdot Q_{Nn}$

Kv	*= Flow coefficient*
Q	*= Volume flow rate*
Δp	*= Pressure differential (inlet pressure – outlet pressure)*
ρ	*= Density of the fluid*
c_v	*= Volume flow in USgal/min of water*
Q_{Nn}	*= Volume flow in l/min of air*

Plastics for bodies

Abbre-viations	Materials	General chemical resistance
PVC PVC-HT	Polyvinyl chloride, hard	Resistant to most acids and caustic solutions, and saline solutions.
PP PE	Polypropylene, Polyethylene	Resistant to many organic solvents, aqueous solutions of acids, bases and salts.
PA	Polyamide	Resistant to greases, oils, waxes, fuels, weak bases, aliphatic and aromatic hydrocarbons.
PTFE	Polytetra-fluorethylene	Resistant to nearly all chemicals. Not resistant to liquid sodium and fluorides.
PVDF	Polyvinylidene fluoride	Not resistant to hot solvents such as ketone, ester and highly alkaline solutions.
PPS	Polyphenylene sulfide	Resistant to aqueous mineral acids, bases, aliphatic and aromatic hydrocarbons, many ketones, alcohols, halogenated hydrocarbons, oils, greases, water and hydrolysis.
PEEK	Polyether-etherketone	Resistant to most chemicals. Not resistant to concentrated sulphuric and nitric acid and certain halogenated hydrocarbons.

Plastics for bodies

Seal & diaphragm materials

Pivoted armature valve Type 330

Abbre-viations	Materials	General chemical resistance
PTFE*	Polytetrafluorethylene	See plastic materials for bodies.
EPDM	Ethylene-propylene-diene rubber	Resistant to ozone and hot water. Not oil and grease resistant.
FKM	Fluorocarbon rubber	Resistant to oil and many chemicals, as well as heat.
NBR	Nitrile rubber	Resistant to oil.
FFKM	Perfluoroelastomers	Resistant to extreme heat, weather and most chemicals.

** only seal material*

Seal & diaphragm materials

Product overview 01
Solenoid valves
 # 894492 DE
 # 894486 EN

Pivoted armature valve 330
 # 894286 DE
 # 894287 EN

Solenoid valve 6240
 # 894345 DE
 # 894346 EN

Solenoid valve 6027
 # 894427 DE
 # 894428 EN

EV series solenoid valves
 # 894417 DE
 # 894418 EN

Plunger solenoid valves
 # 894392 DE
 # 894393 EN

Brochures