

## Solenoid Valve for Aggressive Fluids, Direct Acting



- NPT 3/8, NPT 1/2, NPT 3/4
- On/off, mixer or distributor function
- Body materials: PVC, PVDF (on request)
- No differential pressure required for switching
- Double seal to valve interior
- Simple installation and removal
- Non-metallic valve internals
- Lockable manual override available as a standard feature

Direct-acting solenoid valve, available in 2- and 3-way versions. A separating diaphragm isolates the actuator from the fluid.

The valve is insensitive to contaminated fluids, except for sharp solid bodies and long fibers.

The flow path through the valve is dependent on the chosen circuit function. The solenoid epoxy encapsulation efficiently dissipates the heat generated by the coil.

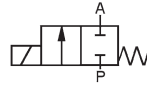
### Applications

- Aggressive gases and liquids
- Bases and acids up to a medium concentration
- Water treatment
- Chemical cleaning and washing systems
- Food and beverage industry
- Photochemistry
- Electroplating systems
- Chlorine dosage
- Etching technology

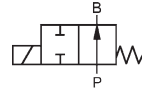
**Technical data**

**Circuit Function**

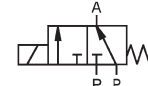
**A** 2/2-way valve, normally closed



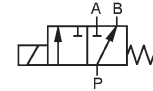
**B** 2/2-way valve, normally open



**E** Mixer valve, when de-energized pressure port P2 open, P1 closed



**F** Distributor valve, when de-energized pressure port P connected to outlet B



**Body material**

Hard-PVC (resistant to DIN 8062 and 8061)  
PVDF on request

**Specifications**

Orifice [inches]	C <sub>v</sub> -Value Water [GPM]	Port Connection [NPT]	Pressure Range for Circuit Functions				Weight [lb.]
			F [PSI]	E [PSI]	A [PSI]	B [PSI]	
3/8"	2.33	3/8 or 1/2	0-14	0-9	0-42	0-28	2.64
9/16"	5.2 <sup>1)</sup>	1/2 or 3/4	0-7.2	0-4.2	0-14	0-14	2.64
3/4"	7.0 <sup>1)</sup>	3/4	0-3.6	0-2.2	0-7.2	0-7.2	2.64

<sup>1)</sup> The C<sub>v</sub>-values of the orifice sizes 9/16" and 3/4" are 4.0 and 5.8, respectively, in the circuit functions E and F. All pressures quoted are gauge pressures with respect to the prevailing atmospheric pressure.

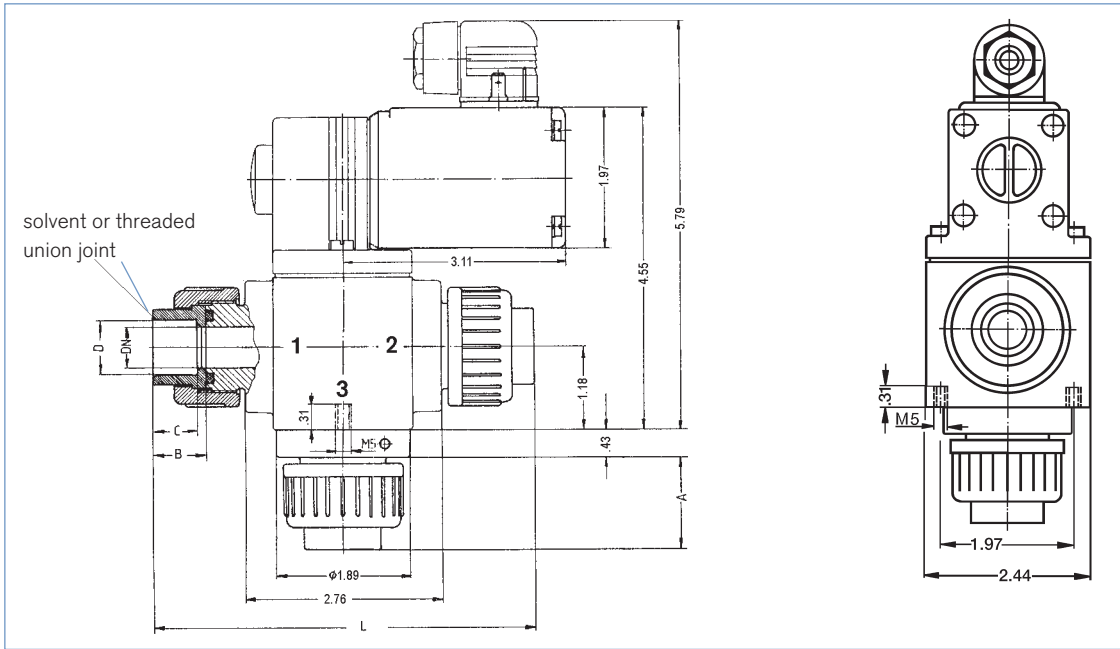
**Operating data (valve)**

Seal Materials/Fluids Handled/ Temp. -Range		PVC	PVDF
<b>NBR</b>	Neutral fluids, e.g. compressed air, town gas, water, hydraulic oil, oils and fats without additives	14°F to 122°F	14°F to 158°F
<b>EPDM</b>	Alkalis, acids up to medium concentration, alkaline washing and bleaching lyes	-22°F to 122°F	-22°F to 158°F
<b>FKM</b>	Oxidizing acids and substances salt solutions, oils with additives	14°F to 122°F	-22°F to 158°F
<b>For more detailed information see resistance chart (Leaflet-No. 1896009).</b>			
<b>Max. ambient temperature</b>		122°F	
<b>Max. viscosity</b>		4x10 <sup>-4</sup> ft <sup>2</sup> /sec	
<b>Response times</b>	opening	10-20 ms	
	closing	40-60 ms	
<b>The response times have been measured at a nominal pressure with air. They depend upon the orifice, pressure and viscosity of the handled fluid.</b>			
<b>Installation</b>		As required, but preferably upright	

**Operating data (actuator)**

<b>Operating voltage</b>	24, 120, 240, 60 Hz Standard 12-440V, 50 or 60 Hz or UC Available (UC=universal current)
<b>Voltage tolerance</b>	±10 %
<b>Power consumption</b>	AC 100-120 VA (inrush), 32 VA/16 W (hold) UC 100 W (inrush), 9 W (hold)
<b>Duty cycle</b>	100% continuously rated
<b>Cycling rate</b>	standard coil: 100-150 c.p.m. UC coil: max. 6 c.p.m.
<b>Rating</b>	IP 65 cable plug
<b>Port connection</b>	NPT 3/8, 1/2, 3/4, G 3/8, 1/2, 3/4, solvent joint 16, 20 and 25 mm ø

Dimensions [inches]

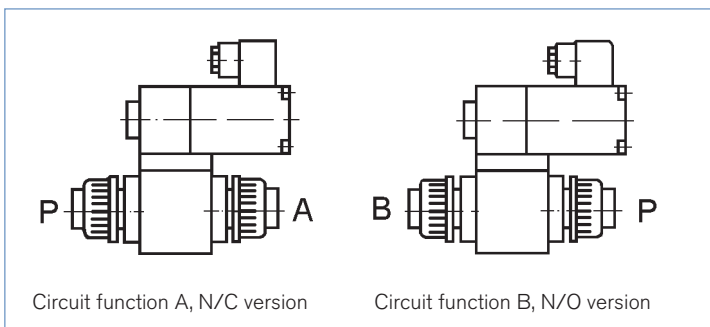


Circuit Function	Connections 3-Way-Valve		
Port	1	2	3
F	B	A	P
E	P2	P1	A

Orifice	A	B	C		D		L
			Threaded Joint	Solvent Joint	Solvent Joint	Threaded Joint	
3/8"	1.18	.67	.55	.47	ø .64	NPT 3/8	5.12
	1.30	.75	.63	.55	ø .80	NPT 1/2	5.35
9/16"	1.30	.75	.63	.55	ø .80	NPT 1/2	5.35
	1.46	.87	.75	.63	ø .99	NPT 3/4	5.67
3/4"	1.46	.87	.75	.63	ø .99	NPT 3/4	5.67

DTS 1000082391 EN Version: A Status: RL (released | freigegeben | valide) printed: 20.01.2015

Terminals



## Ordering chart (others available on request)

Valve operation	Orifice [inch]	C <sub>v</sub> [GPM]	Pressure range [PSI]	Port connection	Seal material	Voltage	Item no.
A	3/8	2.33	0 – 43	NPT 3/8	EPDM	120/60	453 055 S
						240/60	452 617 Z
					FKM	24/UC	457 991 N
					120/60	454 835 N	
				NPT 1/2	EPDM	24/UC	454 234 T
						120/60	453 576 Z
	9/16	5.20	0 – 14.5	NPT 1/2	EPDM	24/UC	462 468 C
						120/60	452 620 G
					FKM	120/60	450 011X
				NPT 3/4	EPDM	120/60	455 025 N
					FKM	120/60	454 842 V
				3/4	7.0	0 – 7.2	NPT 3/4
FKM	120/60	450 856 B					
B	3/8	2.33	0 – 43	NPT 1/2	EPDM	120/UC	453 820 S
	9/16	5.20	0 – 14.5	NPT 1/2	EPDM	120/UC	454 160 D
				NPT 3/4	FKM	120/UC	456 744 C
	3/4	7.0	0 – 7.2	NPT 3/4	EPDM	120/UC	451 949 D
E	9/16	4.0	0 – 4.2	NPT 1/2	EPDM	24/UC	452 629 D
						120/UC	455 643 E
F	3/8	2.33	0 – 14.5	NPT 3/8	FKM	24/UC	456 284 Y
						120/60	450 791 A
				NPT 1/2	FKM	120/60	456 061 T
						120/60	456 061 T
	9/16	4.0	0 – 7.2	NPT 1/2	EPDM	24/UC	452 757 D
						120/60	456 635 T
						240/60	452 636 U
					FKM	120/60	040 905 D
		240/60	456 750 N				
	3/4	5.8	0 – 3.5	NPT 3/4	EPDM	120/60	452 638 E
FKM					120/60	454 361 A	
					240/60	454 693 Y	

DTS 1000082391 EN Version: A Status: RL (released | freigegeben | validé) printed: 20.01.2015