

Flipper Solenoid Valve with Isolating Diaphragm for Analytical Applications



- 2/2- and 3/2-way; orifices from 5/64" to 5/16"
- 1/4", 3/8" and manifold mount connections
- PTFE diaphragm hermetically isolates the solenoid system from the fluid
- Resistant to contamination and does not magnetize particles
- Lockable manual override standard
- Body materials: PTFE, PVC, stainless steel
- Feedback diagnostics available

The Type 121 is a direct-acting solenoid valve with flipper armature. The special design makes the valve less sensitive to contaminated fluids than plunger-type valves and provides long service life even under dry-run conditions.

The isolation of the solenoid from the fluid is achieved by the use of a PTFE diaphragm on the fluid side and a FKM diaphragm on the solenoid side. The solenoid epoxy encapsulation efficiently dissipates the heat generated by the coil.

The valve is available as 2-way normally closed circuit function. Other circuit functions including 3/2-way are available on request.

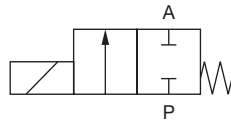
Applications

- Surface treatment
- Photochemistry
- Dairies
- Breweries
- Food processing industry
- Biochemistry
- Analytical instruments
- Plastic production
- Color chemistry
- Pharmaceutical industry

Technical data

Circuit Function

A 2/2-way valve, normally closed



Other functions on request

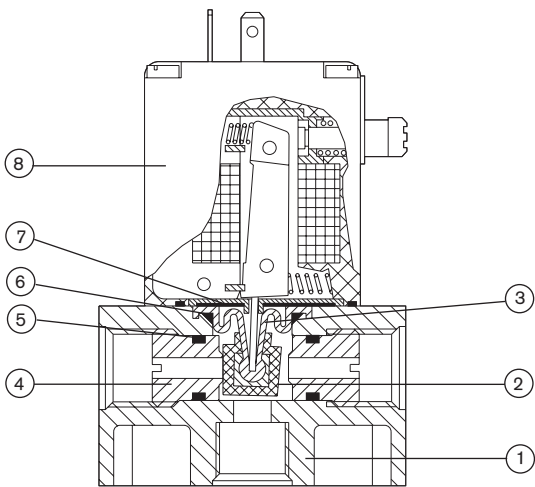
Operating data (valve)

Technical data	
Pressure range max.	0 – 58 PSI (see specifications)
Port connection	Threaded port NPT 1/4, NPT 3/8
Orifice	5/64 – 5/16 inch
Body material	PTFE, 316 Stainless Steel (PVC, PVDF, PP on request)
Seal material	FKM, EPDM, FFKM
Fluids	EPDM: Alkalis, acids up to a medium concentration, washing and bleaching lyes. FKM: Oxydizing acids, salt solutions, exhaust gas, FFKM: Flavors, ether, ester kezones
Fluid temperature	14 to 194°F (FKM) -22 to 194°F (EPDM) -14 to 122°F (FFKM)
Ambient temperature	max. 122°F
Max. viscosity	Approx. 37 cSt
Approx. Response Times	
opening:	15 – 25 ms
closing:	15 – 25 ms

Operating data (actuator)

Technical data	
Operating voltages	12 – 24 VDC, 24 to 240 VAC
Voltage tolerance	±10 %
Power consumption	AC 40 VA (inrush) 18 VA / 7 W (hold) DC 8.5 W UC 40 W (inrush), 3 W (hold)
Duty cycle	100% continuously rates with stainless steel body. Intermittent operation: PTFE–body 40% 10 min. AC or DC use: 100% continuously rated
Cycling rate	approx 600 c.p.m. AC or DC use: approx. 10 c.p.m.
Protection class	NEMA 4 (IP 65) with cable plug Type 2508
Electrical connection	spade connector (DIN 43650, form A)
Installation	as required

Materials



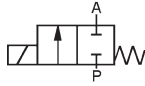
- 1 Valve body: PTFE, 316 Stainless Steel (PVC, PVDF, PP on request)
- 2 Seal: FFKM, FKM, EPDM
- 3 Toggle pin: Hostaflo TF 1502
- 4 Seat: 316 Stainless Steel
- 5 O-Rings: FKM, EPDM
- 6 Seal: PTFE
- 7 Isolating diaphragm: FKM, EPDM, FFKM
- 8 Coil body: Epoxy

Schematic drawing shows stainless steel version

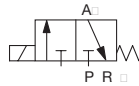
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Specifications – ordering chart (other versions on request)

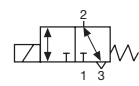
Circuit function
A 2/2-way valve,
 normally closed



C 3-way,
 normally closed



F 3-way,
 diverting



PVC body

Circuit function	Port	Orifice	C _v	SCFM	Pressure range [PSI]	Seal material	Weight [lb]	Item no. Voltage / Frequency [V/Hz]		
								24/DC ¹⁾	120/60	240/60
A	3/8	1/4	0.71	21.2	0 – 29	FKM	11.3	048 749 T	450 656 J	--
						EPDM	11.3	049 337 F	453 487 R	--
		5/16	1.2	36.0	0 – 14	EPDM	11.3	--	450 543 H	--
						FKM	11.3	147 277 A	453 968 A	--
C	3/8	1/4	0.71	21.2	0 – 14	EPDM	11.3	--	454 651 D	456 186 N
						FKM	11.3	050 797 A	454 402 V	--
		5/16	0.71	21.2	0 – 14	EPDM	11.3	--	--	--
						FKM	11.3	154 455 U	--	--
F	3/8	1/4	0.71	21.2	0 – 29	FKM	11.3	049 533 U	453 426 K	453 427 L
						EPDM	11.3	040 062 A	450 857 C	452 733 V

PTFE body

Circuit function	Port	Orifice	C _v	SCFM	Pressure range [PSI]	Seal material	Weight [lb]	Item no. Voltage / Frequency [V/Hz]		
								24/DC ¹⁾	120/60	240/60
A	3/8	5/32	0.35	21.2	0 – 58	FFKM	11.3	122 632	457 453 S	457 454 T
		1/4	0.71	21.2	0 – 29	FFKM	11.3	457 455 U	455 494 J	457 456 V
C	3/8	5/32	0.35	21.2	0 – 29	FFKM	11.3	--	456 267 E	--
		1/4	0.71	21.2	0 – 14	FFKM	11.3	--	455 444 X	455 473 U
F	3/8	5/32	0.35	21.2	0 – 58	FFKM	11.3	--	--	--
		1/4	0.71	21.2	0 – 29	FFKM	11.3	141 134 M	455 096 N	--

Stainless steel body

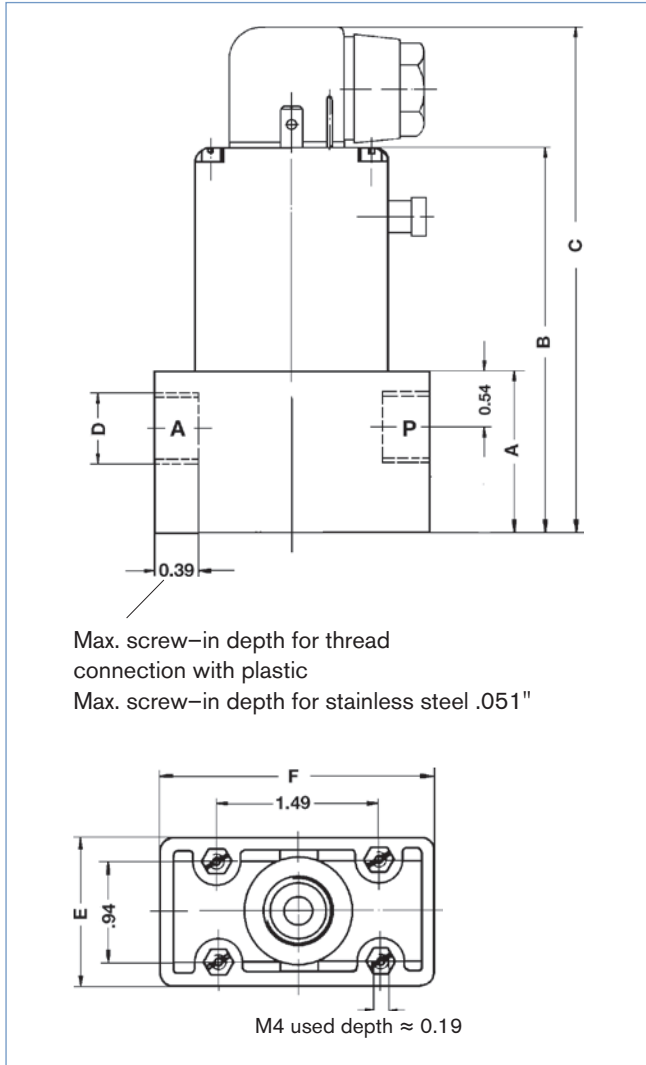
Circuit function	Port	Orifice	C _v	SCFM	Pressure range [PSI]	Seal material	Weight [lb]	Item no. Voltage / Frequency [V/Hz]		
								24/DC ¹⁾	120/60	240/60
A	3/8	5/32	0.35	10.6	0 – 58	EPDM	11.3	457 457 W	457 458 F	457 459 G
						FKM	11.3	457 463 U	457 464 V	457 465 W
		1/4	0.71	21.2	0 – 29	EPDM	11.3	457 460 D	457 461 S	457 462 T
						FKM	11.3	457 466 X	457 467 Y	457 468 H
C	3/8	5/32	0.71	21.2	0 – 29	EPDM	11.3	023 001 R	--	--
						FKM	11.3	058 461 D	--	--
		1/4	0.71	21.2	0 – 14	EPDM	11.3	--	--	--
						FKM	11.3	055 563 Y	--	--
F	3/8	5/32	0.71	21.2	0 – 58	EPDM	11.3	057 116 J	--	--
						FKM	11.3	040 161 A	--	--
		1/4	0.71	21.2	0 – 29	EPDM	11.3	025 015 G	--	--
						FKM	11.3	050 980 E	--	--

¹⁾ Maximum pressure for DC voltage

Options

- Vacuum
- Electrical feedback signaller
- Solvent joint, tube connection
- Electrical connection: molded in cable

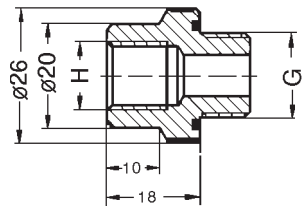
Dimensions [mm]



The seats on the valve have been set and must not be adjusted.

Body material	Dimensions [inch]						
	A	B	C	D	E	F	G
PTFE	1.49	3.58	4.72	G 3/8	1.37	2.99	0.57
Stainless	1.41	3.50	4.64	G 1/4	1.25	2.99	0.51

Reducing Fitting



Dimension G: G 3/8"
 Dimension H: G 1/4" or ø0.48"

Reducing Fitting	Material	O - Ring	Item no. Single part
G 3/8 - G 1/4	PTFE	FKM	005 580 V
G 3/8 - G 1/4	PTFE	EPDM	005 646 A

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Engineering Design and Contract Manufacturing services available for your micro-fluidic system needs. Specializing in Value added Design and Fabrication of manifolds, brackets, cable harnesses and more. Manufacturing services include complete documentation, CAD, assembly and testing of complete systems and sub-assemblies including: valve mounting, fitting and tubing installation, cable harnesses, power boards, sheet metal and more.

In case of special application conditions, please consult for advice.

We reserve the right to make technical changes without notice.

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