

Series 9 Pulse Valves

High-performance media resistant solenoid valves

FEATURES

- Flange mount, axial flow, 2-way normally closed valves
- Operates as fast as 2 ms (with IOTA ONE valve controller as fast as 160 μ s)
- Delivers repeatable pulses and high repetition rates
- Leak-tight to 1×10^{-7} cm³/s/atm Helium
- Constructed of non-corrosive stainless steel
- RoHS compliant



MEDIA COMPATIBILITY

Liquids and gases

WETTED MATERIALS

Body:
316L stainless steel, PTFE

Poppet:
PTFE or Vespel

O-ring:
FFKM

ELECTRICAL

Power	11.2, 12 W
Voltage	20, 28 V _{DC}
Current/Resistance ($\Omega \pm 5\%$ @ 21 °C)	
20 V _{DC}	594 mA/33 Ω
28 V _{DC}	400 mA/70 Ω

PHYSICAL PROPERTIES

Operating environment	4 to 105 °C
Weight	approx. 80 g
Porting	1.3" standard flange, 1/4" A-Lok fittings
Internal volume	various

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PERFORMANCE CHARACTERISTICS

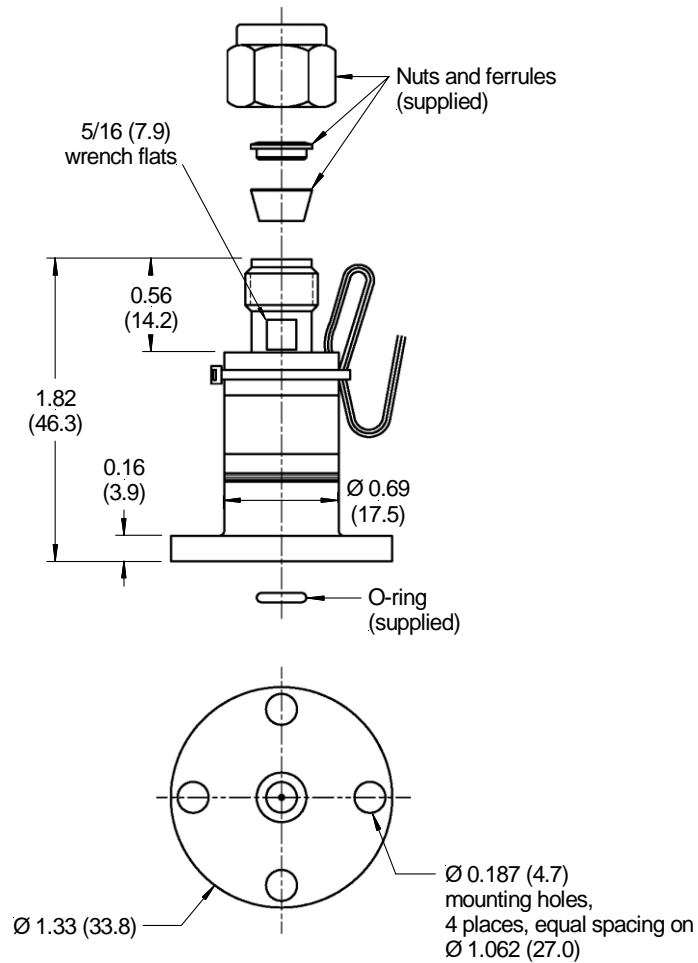
Part no.	Pressure	Orifice sizes ¹	Leak rate ²
Refer to ORDERING INFORMATION	Vacuum...86 bar (1250 psi)	0.004" (0.10 mm)	$1 \times 10^{-7} \text{ cm}^3/\text{s}/\text{atm Helium}$
		0.020" (0.51 mm)	
		0.031" (0.79 mm)	
	Vacuum...50 bar (750 psi)	0.039" (0.99 mm)	

Notes:

1. Straight orifices (no cone) available in all diameters. Cone shaped orifices only available in 0.020" and 0.031" diameters.
2. Not rated for continuous duty at maximum temperature.

OUTLINE DRAWING

1/4" A-Lok, standard flange, no cone



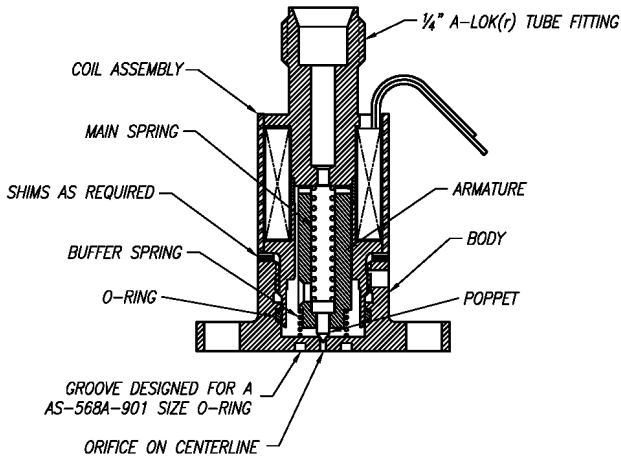
dimensions in inches (mm)

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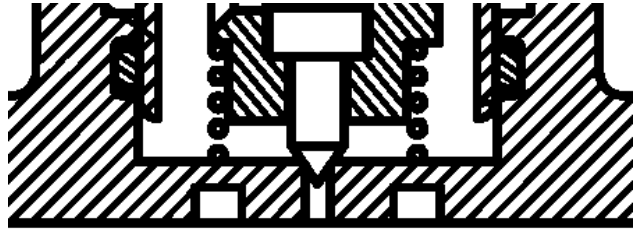
CROSS SECTION

1/4" A-Lok, standard flange, no cone

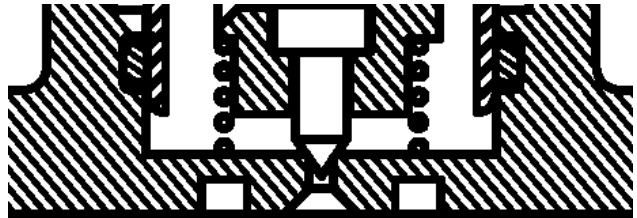


OUTLET PORT DETAIL

No cone



With cone



ORDERING INFORMATION

Part No.	Type	Operating Pressure	Orifice	Voltage	Porting (inlet/outlet)	Seals (poppet/O-ring)
9S1-A1-P1-9B02	2-way NC	Vac...86 bar (1250 psi)	0.10 mm (0.004")	28 V _{DC}	1/4" A-Lok, flange, no cone	PTFE & FFKM
9S2-A1-P3-9B02				20 V _{DC}		Vespel & FFKM
9S2-A1-P3-9B04			28 V _{DC}	0.51 mm (0.020")		PTFE & FFKM
9S1-A1-P1-9B04						20 V _{DC}
9S2-A1-P3-9B07			28 V _{DC}	0.79 mm (0.031")	1/4" A-Lok, flange, with cone	PTFE & FFKM
9S1-A1-P1-9B07						20 V _{DC}
9S1-A1-P1-9B08			28 V _{DC}	0.99 mm (0.039")	1/4" A-Lok, flange, no cone	PTFE & FFKM
9S2-A1-P3-9B08						20 V _{DC}
9S1-A1-P1-9B05		20 V _{DC}	Vac...50 bar (750 psi)	0.99 mm (0.039")		PTFE & FFKM
9S2-A1-P3-9B05						28 V _{DC}
9S2-A1-P3-9B06		28 V _{DC}	0.99 mm (0.039")	1/4" A-Lok, flange, no cone	Vespel & FFKM	
9S1-A1-P1-9B06					20 V _{DC}	PTFE & FFKM

Other options are available on request. Please contact First Sensor.

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MAINTENANCE SPARE PARTS

Note: Only complete packages (kit part number) are available for sale, but not individual BOM parts.

Teflon Pulse Valve Kit			
Kit part no.	BOM	Description	Qty.
009-PTFE-KIT	003-0023-050-002	POPPET HI-T TFE	10
	007-0003-102-001	Buffer Spring	5
	007-0002-064-001	Load Spring PTFE	5
	009-0997-100-001	O-RING VITON	5
	001-0044-020-001	O-ring Viton External	5
	009-0181-031-2	ARMATURE COATED BLACK TFE	1
	009-0292-071-001	SHIM .002	10
	009-0292-072-001	SHIM .005	10
	009-0292-073-001	SHIM .010	10
009-0292-074-001	SHIM .020	10	
Vespel Pulse Valve Kit			
Kit part no.	BOM	Description	Qty.
009-VSPL-KIT	009-0595-020-002	POPPET VESPEL TO .050	5
	007-0003-102-001	Buffer Spring	5
	007-0001-115-001	Load Spring Vespel	5
	009-0997-100-001	O-RING VITON	5
	001-0044-020-001	O-ring Viton External	5
	009-0181-031-2	ARMATURE COATED BLACK TFE	1
	009-0292-071-001	SHIM .002	10
	009-0292-072-001	SHIM .005	10
	009-0292-073-001	SHIM .010	10
009-0292-074-001	SHIM .020	10	
Kel-f Pulse Valve Kit			
Kit part no.	BOM	Description	Qty.
009-KELF-KIT	009-0185-020-002	KEL-F POPPET	10
	007-0003-102-001	Buffer Spring	5
	007-0002-064-001	Load Spring PTFE	5
	009-0997-100-001	O-RING VITON	5
	001-0044-020-001	O-ring Viton External	5
	009-0181-031-2	ARMATURE COATED BLACK TFE	1
	009-0292-071-001	SHIM .002	10
	009-0292-072-001	SHIM .005	10
	009-0292-073-001	SHIM .010	10
009-0292-074-001	SHIM .020	10	
PEEK Pulse Valve Kit			
Kit part no.	BOM	Description	Qty.
009-PEEK-KIT	009-0424-030-002	POPPET PEEK FOR .8MM	10
	007-0003-102-001	Buffer Spring	5
	007-0001-115-001	Load Spring Vespel	5
	009-0997-100-001	O-RING VITON	5
	001-0044-020-001	O-ring Viton External	5
	009-0181-031-2	ARMATURE COATED BLACK TFE	1
	009-0292-071-001	SHIM .002	10
	009-0292-072-001	SHIM .005	10
	009-0292-073-001	SHIM .010	10
009-0292-074-001	SHIM .020	10	

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