

MEMETIS

Shape Memory Alloy Valve - MVL

2/2-Way, Media Separated, Normally Closed, Seat Valve

DESCRIPTION

The Memetis MVL is a normally closed micro valve designed for Microfluidics OEMs. The MVL is ideal for complex fluidic systems due to its small size, low power consumption, and quick hysteresis. The small size of the valve is achieved through both the use of shape memory alloy foil and the method through which a diaphragm is attached at the factory.

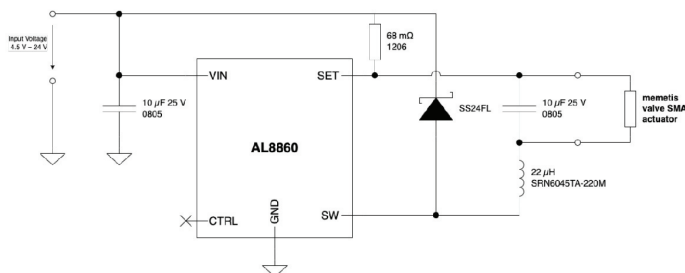
Mounting of the valve body in process is achieved with adaptors or a manifold. The small size, inert wetted materials, and noiseless operation make this an ideal valve for a variety of applications involving low volume dosing.



FEATURES

- Ultra-compact size
- Minimal Internal Volume
- Ideal for Low Flow and Microflow Applications
- Customizable inert & biocompatible wetted materials
- Extremely low power consumption
- Long service life of up to 10 million switching cycles

EXEMPLARY CIRCUIT DESIGN FOR CONSTANT CURRENT SOURCE



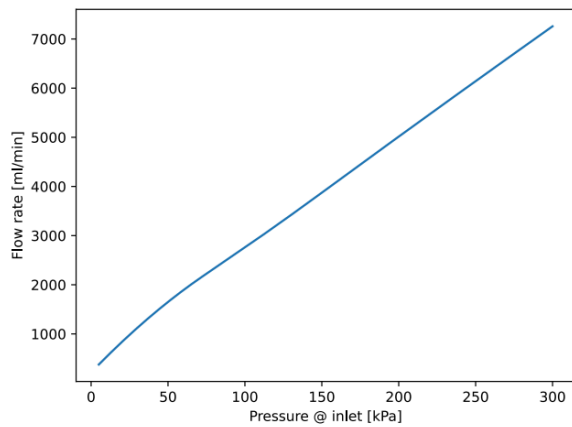
SPECIFICATIONS

GENERAL

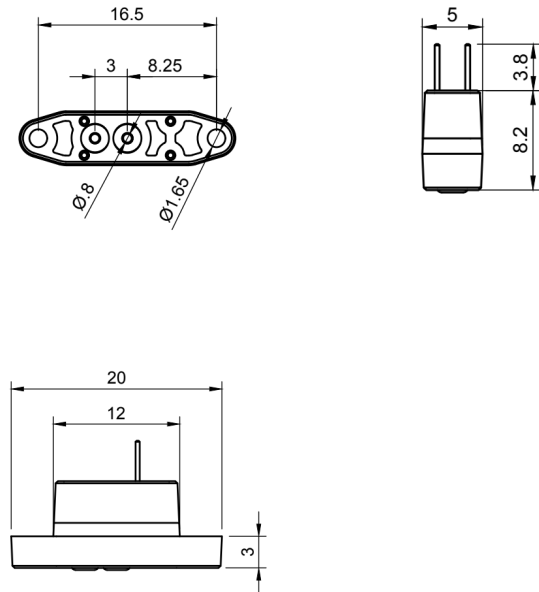
Functionality 2/2	way seat valve normally closed (NC)
Media (separated)	Liquids and gases
Dimensions	20.0 x 5.0 x 8.0 mm ³
Internal Volume	< 6.5 μl
Nominal orifice	0.75 mm
Max. pressure @ input	3.00 bar
Max. pressure @ output	2.00 bar
Switching time ¹ on/off	< 0.05 s / < 0.16 s
Nominal flow rates ¹	3000 ml/min (air) 90 ml/min (water)
Kv value	~ 0.005 m ³ /h
Temperature Range	< 50 °C
Lifetime	> 10 million cycles
Housing material ²	PEEK
Membrane material ²	Silicone (others available)
Fluidic connection	Screwed flange connection (silicone O-rings included)
Power consumption 3 range	< 0.125 W - 0.25 W
Nominal current range	350 - 500 MA
Electrical connections	Pin-contact (pitch 1.27 mm)

1 @20°C and 1 bar (optimized heating current).
 2 Contact us for other material requirements.
 3 Overcurrent may reduce life. Do not operate at constant voltage.

FLOW RATE CHARACTERISTIC



DIMENSIONS (MM)



ORDERING INFORMATION

ABCDE

EXAMPLE: MVL-22-NC-08-14P-PEEK-SIL

A Model	B Port Configuration	C State	D Orifice size	E Max Pressure	F Body Material	G Membrane Material
MVL	22 - 2/2 way	NC - normally closed	075 - 0.75 mm	3P - 2 bar 14P - 3 bar	PEEK	SIL - Silicone

Special materials and connections are available in OEM quantities. Please consult us.

Options			
Model	Description	Model	Description
ECU-P2-mono	Electrical control unit, programmable, USB Connection, I/O channels, I2C interface, 2 Channels, drive up to two monostable valves.	AD-MVL22-PEEK-1v-T1032	Fluid adapter for valves, Polycarbonate, 1 Inlet / 1 Outlet, Male Luer Connector, transparent.
ECU-S1-NC	Electrical control unit, USB B Micro or external power supply, controls 1 Series 09 MC valve.	AD-MVL22-PEEK-4v-T1032	Fluid adapter for valves, 3D-printed, 1 Inlet / 1 Outlet, Male Luer Connector.



Electrical Control Unit (ECU) can control up to two Memetis valves.



Memetis Fluidic Adapter with polycarbonate base to observe liquid flow.



Memetis Fluidic Adapter with black base plate.