NC-VALVE SERIES09

with shape memory alloy actuator

The memetis normally closed 2/2-way valve enables complex fluidic systems in small dimensions with very low power consumption and noiseless switching.
The ultracompact valve is a perfect fit for fluidics in life sciences and other small but complex fluidic applications.

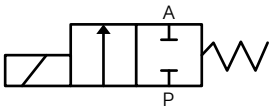
Specifications

Parameter	Value
Functionality	2/2-way seat valve normally closed (NC)
Media (separated)	Liquids or gases
Dimensions	20.0 x 5.0 x 8.0 mm³
Internal volume	< 4 µl
Nominal width DN	0.75 mm
Max. pressure @input	2.0 bar
Max. pressure @output	1.2 bar
Switching time* on / off	< 0.05 s / < 0.16 s
Typical flow rates*	3 000 ml/min (air) 90 ml/min (water)
K_V value	~ 0.007 m³/h
Temperature range	< 50 °C
Lifetime	> 10^7 cycles
Housing material**	PEEK or PPS
Membrane material**	Silicone or FKM
Fluidic connection	Screwed flange connection (FKM O-rings included)
Power consumption	< 0.30 W
Nominal current	≤ 0.50 A
Electrical connections	Pin-contact (pitch 1.27 mm)

* @20 °C & 1 bar (optimized heating current)
** contact us for other material requirements

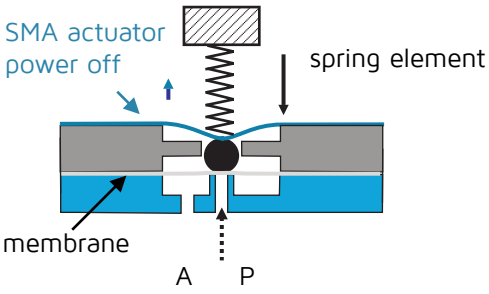
Functionality

2/2-way NC

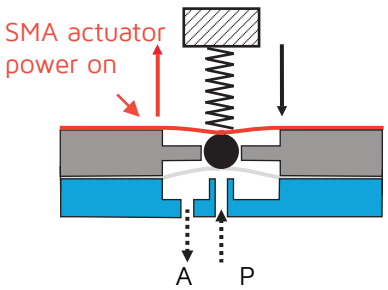


The miniature valve from memetis contains a shape memory alloy actuator that opens the valve.

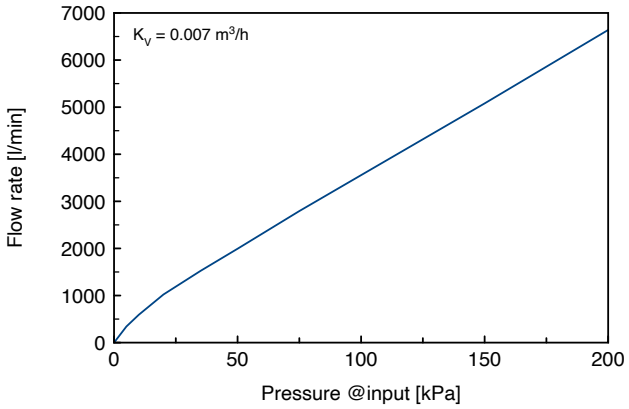
closed state



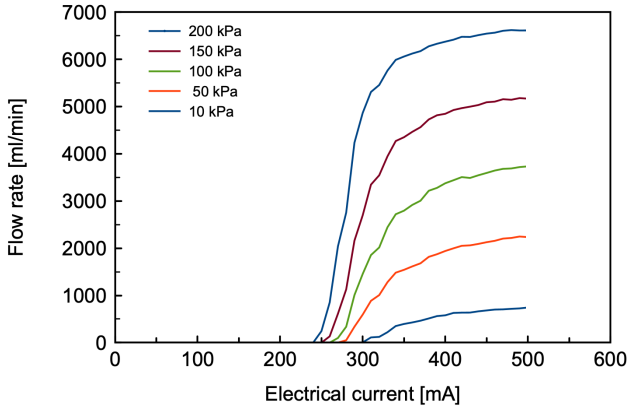
open state



Typical Flow Characteristics



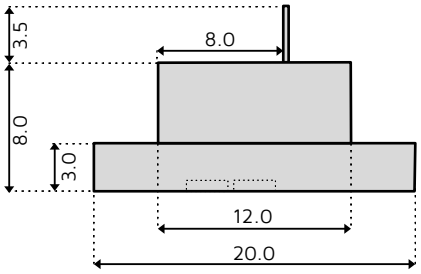
Graph 1: Flow rate of a memetis 2/2-way NC valve (PEEK) for pressures of 0.05 bar up to 2 bar (input pressure) for air at room temperature without output pressure.



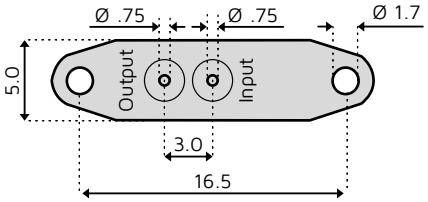
Graph 2: Flow rate depending on applied electrical current for a memetis 2/2-way NC valve (PEEK). A current of 0.5 A corresponds to a power consumption of 0.3 W.

Drawings and Integration

Side view



Bottom view

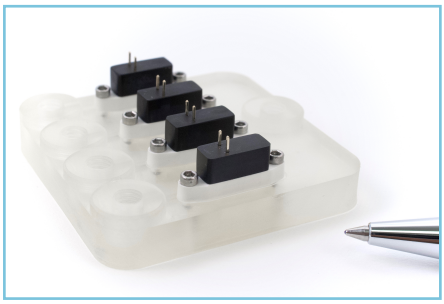


The memetis NC valve can be integrated by flange mount, using two M1.6 screws.
O-rings are already integrated in the valve.

Complementary memetis Products

Programmed **electronic control unit (ECU)**, powered by 5 V microUSB-port, to control up to two memetis valves. The ECU includes cables for electrical connection and has digitals input channels (I/O, I2C).

memetis **fluidic adapter** enables to connect our valves with different fluidic connectors. Available with a Polycarbonate base plate to observe the liquid flow or with a black base plate.



memetis offers customized **smart valve manifolds** to enable easy operation of complex fluidic systems.

Now available in our online shop: shop.memetis.com

Contact information

memetis GmbH, Gablonzer Str. 27, 76185 Karlsruhe, Germany
Tel. +49 721 47000240, Email contact@memetis.com