

2/2-WAY SOLENOID VALVE, PILOT-OPERATED IN DIAPHRAGM DESIGN



Description:

- 2/2-way valve
- seat valve in diaphragm design
- pilot-operated
- female thread acc. to ISO228
- duty cycle 100% (VDE0580)
- any installation position, upright solenoid position recommended
- equipped with adjustable close muting from 1 1/4"

Comments:

Only minor solenoid force is required, because a pilot hole uses the pressure difference.

The valve is equipped with an adjustable **close muting from size 1 1/4"**. Smaller sizes are upgradable. **Voltage tolerance +10% / -10%** at maximum pressure and standard ambient temperature. Please note the **flow direction** (marked with arrow on the body) during installation.

Types with other voltage, coil power or sealing on request! These can be found in the catalog under "spare parts and accessories". Included is the **connector socket GS01 (28x21mm), or GS02 (28x28mm)**. Further connector sockets can be found in the catalog under "square parts and accessories". **Higher protection class** than IP65 with special coils and connector sockets is possible on request.

Threads according to EN 228: It describes the threaded connection of a parallel male thread with a parallel female thread and is marked with "G".

Range of application:

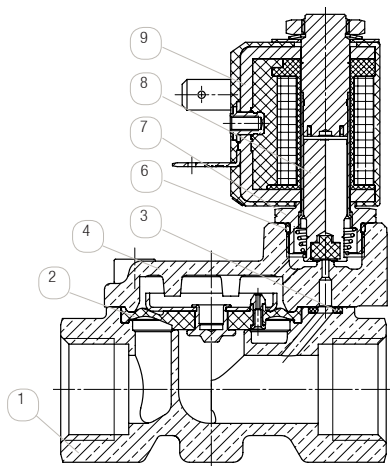
- viscosity 22mm²/s
- medium temperature: -10°C up to +90°C
- ambient temperature: -10°C up to +35°C
- working pressure: 0.3 - 16 bar
from 1 1/4 0,5 - 16 bar
- The minimum pressure is necessary for pressure difference
- IP65 (with a professionally installed connector socket) according to DIN EN 60529
- for hot and cold water, oil and air

References:

For contaminated fluids insertion of a strainer is recommended

At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

Attention! The conditions imposed on the Ex approvals lead to reduction of the permissible standard temperature ranges in the cases of explosion protected solenoids.



For details about the order code see "Order information". An overview of the complete material code you can find at the beginning of each product section of the product catalogue.

pos.	part	brass		stainless steel		optional material	
1	body	CW617N	A	1.4581	O		
4	cover	CW617N		1.4581			
2	diaphragm	NBR	B	NBR	B	EPDM*	E
						FKM*	V
3	o-ring (servo hole)	NBR		NBR		EPDM / FKM	
6	o-ring (plunger spot)	NBR		NBR		EPDM / FKM	

wear parts of the sealing system:

- Pos. 2: diaphragm
- Pos. 3: o-ring for pilot hole
- if applicable sealing for adjustable close muting (not illustrated)

wear parts solenoid system:

- Pos. 7: tube
- Pos. 8: plunger
- Pos. 9: solenoid
- Pos. 6: o-ring for plunger spot

* **Other medium temperature** for optional sealing:

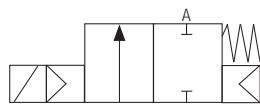
- EPDM up to max. 120°C (a high temperature solenoid may be necessary)
- FKM up to max. 130°C (a high temperature solenoid may be necessary)

options:

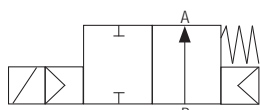
- NO: opened in rest position
- HA: manual override
- RS: adjustable close muting (3/4" up to 1")
- VU: vacuum design
- AA: sealed plunger
- OF: free of oil and grease
- BU: free of non-ferrous metal
- PS: positioning indicator
- EX: ATEX Ex II 2G EEx m II T4 and
Ex II 2G EEx md IIc T4, T5, T6
- CV: chemically nickel plated body
- NPT: pipe thread ANSI B 1.20.1
- MF: with mechanical spring

Other special options on request!

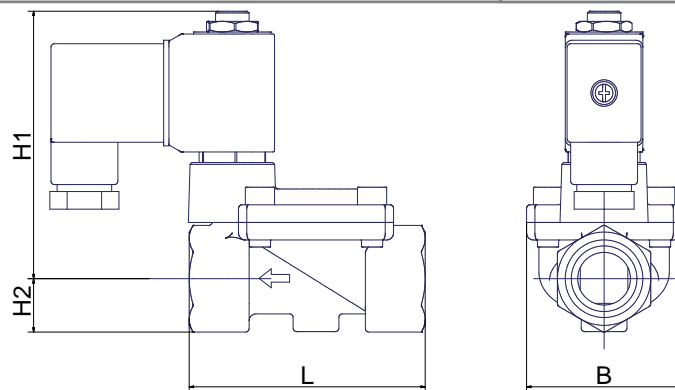
2/2-WAY SOLENOID VALVE, PILOT-OPERATED IN DIAPHRAGM DESIGN



function NC (normally closed valve)



function NO (normally opened valve)



The following table applies for the GMV2103 in standard design NC or NO with the solenoids M01 or M02:

match code	size [inch]	nominal size [mm]	working pressure [bar]		L [mm]	H1 [mm]	H2 [mm]	B [mm]	weight [kg]	CV* [m³/h]	solenoid power	
			min.	max.							AC*	DC
GMV2103-02xx130-M01-x	1/4	13	0.3	16	67	75	15	45.6	0.4	1.56	16/10VA	7W
GMV2103-03xx130-M01-x	3/8	13	0.3	16	67	75	15	45.6	0.4	3.3	16/10VA	7W
GMV2103-04xx130-M01-x	1/2	13	0.3	16	67	75	15	45.6	0.4	3.78	16/10VA	7W
GMV2103-05xx210-M01-x	3/4	21	0.3	16	82	84.75	20.25	51.6	0.6	6	16/10VA	7W
GMV2103-06xx250-M01-x	1	25	0.3	16	96	92	23	72	1.2	9.6	16/10VA	7W
GMV2103-07xx400-M02-x	1 1/4	40	0.5	16	140	109	31	96	2.8	22.2	36/18VA	14W
GMV2103-08xx400-M02-x	1 1/2	40	0.5	16	140	109	31	96	2.8	24	36/18VA	14W
GMV2103-09xx500-M02-x	2	50	0.5	16	168	119	39	112	3.9	32.4	36/18VA	14W

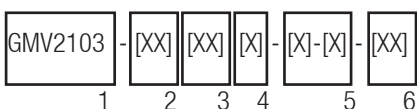
*solenoid power for AC: listed are the pick-up power and the holding power.

*CV value: The nominal flow rate CVs acc. to VDI/VDE 2173 shows the water quantity in cubic meter per hour with the valve fully opened, $\Delta p=1$ and the water temperature between 5°C and 30°C.

For the following options other solenoids are required and therefore other technical values apply (see table on the right):

- working pressure up to 1" max. 20bar: **G03/G04** with power 11W / 18W
- TH: high temperature design up to 130°C: **G13** with power 14W
- EX: ATEX solenoid (EXII 2G EEX md IIc T4, T5, T6): **G20** with power 10W

match code	working pressure [bar]		H1 [mm]	H2 [mm]	B [mm]	weight [kg]
	min.	max.				
GMV2103-02xx130-Gxx-x	0.3	20	90	15	45	0.8
GMV2103-03xx130-Gxx-x	0.3	20	90	15	45	0.8
GMV2103-04xx130-Gxx-x	0.3	20	90	15	45	0.8
GMV2103-05xx210-Gxx-x	0.3	20	97	24	70	1.2
GMV2103-06xx250-Gxx-x	0.3	20	97	24	70	1.2
GMV2103-07xx400-Gxx-x	0.5	16	110	33	96	2.8
GMV2103-08xx400-Gxx-x	0.5	16	110	33	96	2.8
GMV2103-09xx500-Gxx-x	0.5	16	121	40	112	3.9

**Order information:****1: type: GMV2103****2: connection size: 02-09 (see table)****3: materials:**

- 1. digit: body material
A=brass
O=stainless steel
- 2. digit: sealing
B=NBR
E=EPDM
V=FKM

4. nominal size in 1/10mm (see table)**5: operation:**

- 1. digit (3 digits): specification solenoid type (see table / options)
- 2. digit: specification voltage:
0: 230V AC
1: 24V DC
2: 110V AC (on request)
Other voltage on request.

6: options (see "options")

Please ask for field specifications that are not listed in this data sheet.

Before installation please consider the installation and maintenance manual, especially the safety indications!

Heating and power of solenoid coils

default solenoid valves are designed for continuous operation (100% ED = power-on time) under normal operating conditions. The pulling force of a solenoid coil is basically influenced by three elements:

- the self-heating of the magnet coil
- the medium temperature
- the ambient temperature

Solenoid coils are by default designed for a maximum ambient temperature of +35 °C. This specification applies for the maximum allowable operating pressure specified in the data sheet of the corresponding valve, 100% duty cycle and a medium temperature of +90 °C.

A higher ambient temperature is possible, when lower values are applied for the other influencing parameters. When the max. operation pressure and max. ambient temperature of +50 °C is given the medium temperature is not allowed to be higher than max. +50 °C. In addition to that, deviations from the default design temperature range are possible, e.g. when temperature coils or other constructive measures are used. Please contact the MIT headquarters to discuss the specific application.

More precise specifications and technical data with regard to the operating conditions can be found in the data sheets of the solenoid coils and the solenoid valve regarded. Please observe that the surface temperature of a permanently loaded coil can amount up to +120 °C, solely by the self-heating of the coil. The power consumption of our default solenoid valves was calculated to DIN VDE 05820 for a coil temperature of +20 °C.