

2/2-WAY SOLENOID VALVE, FORCE PILOT OPERATED, FLANGE VERSION

**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.

Description:

- 2/2-way valve in flange version
- Piston poppet valve
- Force pilot operated
- Overall length EN558-1, line 1
- Duty cycle 100% (VDE0580)
- Installation position: with standing magnet
- Flange EN1092-1; Version grey iron: (PN16, version cast steel and VA: PN40)
- Adjustable close muting DN32 - DN100
- Version in gray iron and cast steel have a thick-coat passivation as corrosion protection
- Connector plug EN 175301-803 respectively terminal box (depending on magnet type)

Explanation:

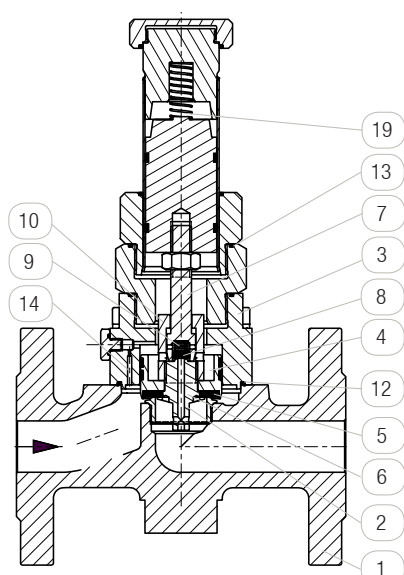
Voltage tolerance +10% / -10% at maximal pressure and ambient temperature. Please note the **flow pattern** (arrow mark on body).

The setting of a defined minimum or maximum flow rate is possible via the basic quantity setting available on request. Valves with flanges acc. to ANSI available.

Other tensions and coil power as well as sealings on request. You find these in the catalog under „Spare parts and accessories“. The **connector plug EN175301-803** is included in the scope of supply. You find more connector plugs under accessories and spare parts in the catalog. On request a **higher protection class** than IP65 is possible, with special coils and connector plugs.

Application area:

- Viscosity 22mm²/s
- Media temperature -10°C to +80°C
- Ambient temperature -10°C to +35°C
- Operating pressure gray iron: 0 to 16bar, cast steel and VA: 0 to 40bar
- No differential pressure necessary
- IP65 (with correct installed connector plug) DIN 40050
- For hot and cold water, oil and air,



Pos.	Component	Cast iron	Cast steel	Stainless steel
1	Body	EN-GJL-250 thick layer	K GP240GH thick layer	L 1.4581 from DN65: 1.4408
2	Seat	1.4301		
3	Cover	up to DN50: Messing from DN65: EN-GJL-250	up to DN50: Messing from DN65: GP240GH	1.4581 from DN65: 1.4408
4	Valve disk	1.4104		
5,8	Seat sealing, Pilot seat sealing	NBR* (Version PN25) PTFE (Version PN40)	B NBR* (Version PN25) T PTFE (Version PN40)	B NBR* (Version PN25) T PTFE (Version PN40)
6	Pilot seat	1.4104	1.4104	1.4104
7	Pilot spindle	1.4104	1.4104	1.4104
9, 19	Spring	1.4310	1.4310	1.4310
10	Cap nut	1.4104	1.4104	1.4104
12,13	O-ring, cover, body and tube	NBR*	NBR*	NBR*
14	Piston guide band	PTFE-coal	PTFE-coal	PTFE-coal

*Optional seals in FKM, EPDM and PTFE for PN25 version possible. Diverging temperature possible. Possibly use of another solenoid necessary.

Wear parts:

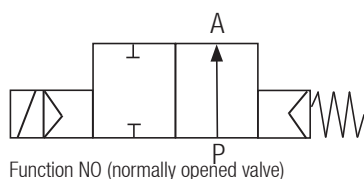
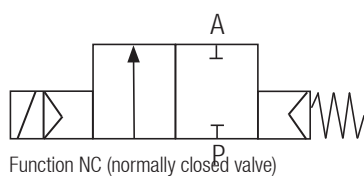
- Pilot seat
- Complete valve piston
- Pilot spindle
- Cap nut
- Groove ring
- Guide star
- O-ring
- Disk
- Spring
- Tube
- Plunger
- Coil
- plug or terminal box

Wear parts can vary depending on the valve design. Service set: incl. Complete piston

Sealing set: contains all seals, WITHOUT piston and seat sealing

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.

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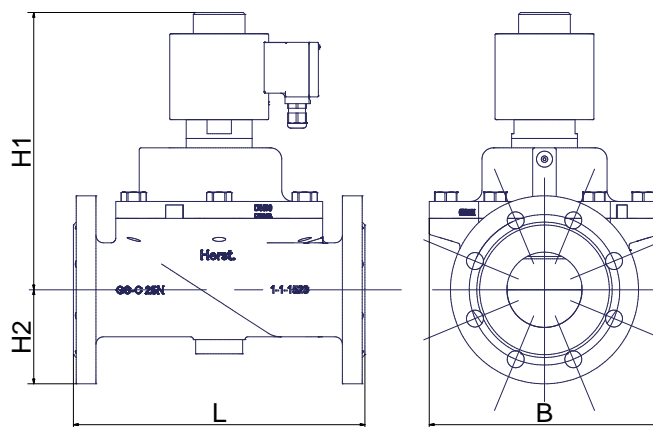


***Power coil AC:** Declared are the power suit and the holding power.

****CV-Value:** The nominal pressure of Kv to VDI / VDE 2173 indicates the water amount in m³ / h, found out at a pressure difference $\Delta p = 1 \text{ bar}$ and a media temperature from +5°C to 30°C.

Options:

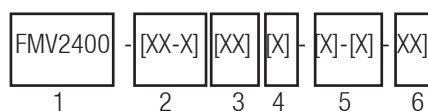
- NO: opened in rest position
- HA: manual override
- TH: temperature version upto 180°C
- OF: free of oil and grease
- BU: non-ferrous metals
- PS: position indication (from DN20)
- EX: explosion protection acc. to ATEX:
Ex II 2G EEx m II T4
Ex II 2G EEx em II T4
- GM: basic quantity setting
- AA: sealed plunger spot
- RS: adjustable close muting



Power of the coils:

Type	AC*	DC
G03	24VA / 15VA	11W
G04	43VA / 24VA	18,5W
G07		25W
G08	with separate rectifier	30W
G09		46W
G10		100W

Matchcode	Size		Working pressure						Dimensions [mm]				Weight [kg]		CV** [m ³ /h]			
	Con- nection [inch]	Nominal size [mm]	small coil		PN40		L	H1	H2	B		small coil	PN40					
			Coil	min	max	Coil	min	max	kl.	PN40	small coil	PN40	PN16	PN40	coil			
FMV2400-57-x xx500-x-x	DN50	50	G09	0	25	G10	0	40	230	224	252	82,5	165	14	16	46		
FMV2400-58-x xx650-x-x	DN65	65	G09	0	16	G10	0	40	290	270	310	92,5	185	35	21	75		
FMV2400-59-x xx800-x-x	DN80	80	G09	0	16	G11	0	40	310	315	480	100	200	44	39	97		
FMV2400-60-x xx1000-x-x	DN100	100	G10	0	16	G11	0	40	350	400	560	110	117,5	220	235	63	60	143
FMV2400-61-x xx1250-x-x	DN125	125	G10	0	16	G11	0	40	400	355	420	125	135	250	270	80	87	240
FMV2400-62-x xx1500-x-x	DN150	150	G11	0	16	G12	0	40	480	450	600	142,5	150	285	300	95	140	370
FMV2400-63-x xx2000-x-x	DN200	200	G12	0	40	G12	0	40	600	660	170	187,5	340	375	158	625		
FMV2400-64-x xx2500-x-x	DN250	250	G12	0	16	-	0	-	730	720	-	202,5	225	405	450	235	-	950
FMV2400-65-x xx3000-x-x	DN300	300	G12	0	10	-	0	-	850	750	-	230	257,5	460	515	320	-	1400



Appointment details:

1: Type: FMV2400

2: Connection size: 57-65 (see chart)
with pressure stage

- PN16: 1
- PN40: 3

3: Material:

- 1. Body material
L=gray iron
K=cast steel
O=stainless steel
- 2. Sealing
B=NBR (standard)

4. Nominal size in 1/10mm (s.chart)

5: Operation:

- 1. (3 digits): Indication of the coil type (s. chart/options)
- 2. Indication of the tension:
0: 230V AC
1: 24V DC
2: 110V AC (on request)
Other tensions on request.

6: Options (see „Options“)

Demands on your application conditions that are not listed on the data sheet, can be requested!

The guide book and the maintenance guidelines, particularly the given safety instructions have to be paid attention to before the installation!

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 +80 °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.